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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

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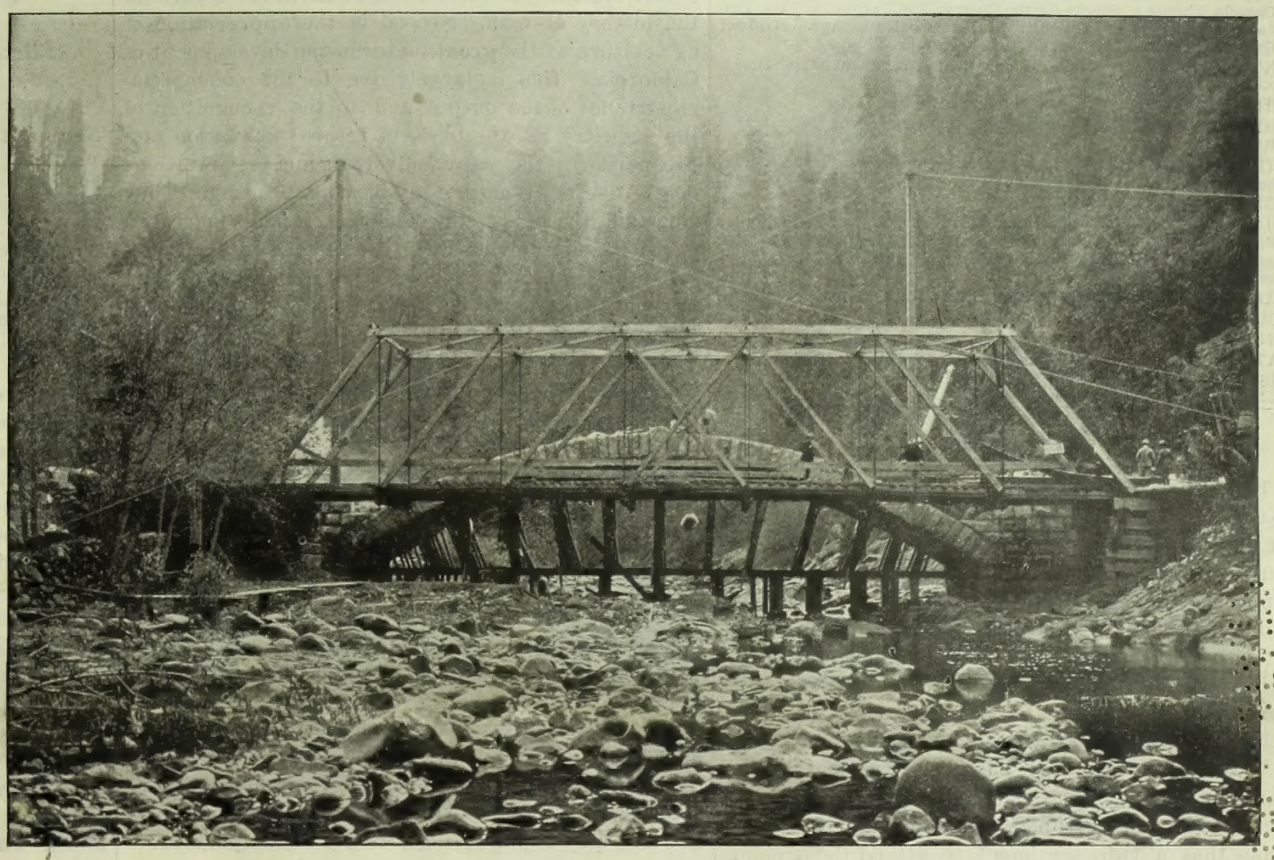
A Fine Stone Bridge in the Sierras.

In our issue of November 12 we gave a distant view of the stone bridge recently erected with State funds on the Lake Tahoe State Highway under the direction of the State Department of Highways and promised more detailed views later. They appear upon this page. This State Highway is entirely in El Dorado county and extends from Placerville to the eastern boundary of California, near Lake Tahoe. It traverses about 60 miles of exceedingly picturesque mountain country and constitutes one of the important wagon roads from California valleys to Nevada. The particular interest in it at this time is the permanent character of its structures as evidenced by the stone bridge at Riverton replacing the old wooden structure still seen beside it in the pictures. The stone bridge is an 81-foot span of granite exceedingly neat in design and solid in construction. The pictures show to a certain extent the way in which such structures are built up—the stones being properly placed upon a timber arch until the span is complete.

California is certainly making some progress in securing permanent road structures in the place of temporary timber affairs which cost so much and last so little. The State Highway Commission from its establishment ten years ago has constantly urged reform in this respect. Some of the counties are doing good work in this line and Napa county leads them all. During the last decade the county has built fourteen stone bridges and a number of stone culverts at a cost of about $54,000, which is manifested by the people of Napa county in their road work is quite characteristic of their general disposition to build up the county and its prosperity upon lasting foundations. It is creditable to a county to be able to claim the largest stone bridge west of the Rocky mountains, for that distinction belongs to one of their structures.

The stone bridges of Napa county range in length from 50 to 300 feet. The shorter bridges consist of single arches, spanning the smaller streams, and giving abundant waterway during flood seasons. The longer bridges consist of arches in series. The spans of these longer bridges vary from 55 to 75 feet for each span. Two of the larger bridges deserve special mention. The first constructed was the one over the Napa river, near St. Helena. This bridge is 212 feet over all, and has three 55-foot arches, with piers and abutments resting on bedrock. The center arch is somewhat higher than the others. The second is over Putah creek, near Monticello, and is a somewhat larger and more imposing structure. It consists of three 70-foot arches carried down to bedrock. The center span is 42 feet above low water. The abutments are 6 feet below the surface, resting on bedrock. The piers are 16 feet at their base and 10 feet at spring line, and also rest on bedrock. The arch stones are 3 feet 6 inches deep, $12\frac{3}{16}$ inches at crown, and 11 inches at base, laid in cement mortar. The stone used in the bridges is a native sandstone, and is found in abundance near the site.

It is extremely strong, having stood a test of 8000 to 12,000 pounds pressure to the inch. There were used in the construction of the last mentioned bridge $2600\frac{1}{2}$ cubic yards of material, 675 barrels of cement, 380 barrels of lime, 55,000 feet of lumber for false work, $1\frac{3}{4}$ tons of iron. The only article purchased outside of Napa county was the cement. The entire cost of the bridge was $19,980, while the two combination wooden-iron bridges erected at this point represent in their construction and maintenance an outlay of $53,000, and yet, after this enormous outlay, all there was to show for it was a pile of broken and rotten timbers.



Construction of New Stone Bridge at Riverton, Lake Tahoe State Highway, Showing Old Combination Truss Bridge.



New Bridge, Riverton, Lake Tahoe State Highway. Longest Stone Arch Span (81 Feet) on Pacific Coast.

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The Week.

The old year closed with a storm, which fortunately had a far southern reach and precipitated a lot of water just where it was most needed—in the southern counties—in addition to reinforcing the supply in other parts of the State. This visitation, and the atmospheric conditions which follow it and promise more as we write, have done much to cheer and assure all to enter upon the New Year with increased expectation, and with increased energy as well. The low temperatures which sometimes come at this time of the year have been averted by the mantle of haze, which is sufficient winter clothing for even tender semi-tropical vegetation, and there comes thus a twin sentiment to attend the opening year—joy for what has come and for what has been thus far escaped.

Markets have shown fair animation, although two business days were knocked out of the week on holiday account. Wheat has been tending upward, both here and East. May wheat sold up to $1.15⅝ per bushel in Chicago, and same option touched $1.46¾ per cental here. A full cargo of 3300 tons cleared for Europe. Grain charter market is lifeless and quotable nominally at 15 shillings per ton for wheat cargoes to customary European ports. Barley is not being neglected and full figures are being paid. Two steamer shipments aggregating 4000 tons were made this week to Japan. One of the above steamers took, in addition to barley, 1500 tons oats and 27,000 bales hay. The two cargoes represent a coin value of $160,200. Oats are meeting with a firm market. Large corn is being offered freely at last quoted decline. Lima beans are a little easier, owing to more favorable weather south; prices for other beans remain steady. Bran and middlings are in only moderate supply and prices unchanged. Demand is fair for beef and mutton and values without noteworthy fluctuation. Hogs are not in heavy supply, but packers operate slowly at present prices. Butter market is lacking in firmness. Cheese values are unchanged. Eggs are lower, the usual thing here for January, just as are snows and blizzards East. Poultry of most kinds sold well, especially turkeys and big, fat chickens. Potato market was steady for best, but dull and weak for common. Onions went at concessions to buyers. Apples of fine quality were in good request. Oranges and lemons were in ample stock for the prevailing frosty weather. In dried fruits there is a fair outward movement and prices unchanged, although market is strong for apricots and peaches. Almond market is quiet and steady. Choice walnuts are in light stock and stiffly held. Little doing in honey. Hops quiet here, but 30c is reported bid in the country. Wool growers may yet tread on velvet; manufacturers want not only every pound of domestic wool, but will have to import heavy quantities.

The week opened with the assembling of the Legislature in Sacramento. There is a Senatorial issue to be met first and then things of agricultural interest are likely to happen in rapid succession. There are, of course, other matters of great public interest to be cared for, but if one should form an idea of what the Legislature is to do from the current comments in the newspapers both of city and country, it would be that the body is to assemble for the promotion of agriculture in its varied forms. This prominence of agriculture is easily to be accounted for. First is the general popularization of the industry as an undertaking of both economic and scientific interest. This not only pervades the whole of this country, but is fast becoming a world-thought as never before in the history of man. Second is the appreciation of agriculture as the great factor in the development of California. This is largely due to the commercial importance of the output and to the recognition of the industry as the basis of future population and prosperity by the many individuals and organizations now active in promotive talking and printing. They command the public ear and eye. Third is increased activity and confidence of the agriculturists themselves in urging the claims of their industry to public favor in the form of appropriation of money for educational, investigational and protective undertakings. These three lines of progress naturally lead to command of public attention, and the Legislature and the Governor will both have their hands full of propositions for generous expenditure of State money. What they really can do without unduly lifting the tax rate remains to be seen. Certainly there never was a time, though, in which the public called for liberal treatment of the group of allied special branches which comprise the agricultural industry of California, and the legislators are simply voicing the demands of their constituents in the multitude of of enactments which they will bring forward. Those favoring special things should remember this, however, that the State cannot possibly do all the good things at once, and there should be a cordial feeling of forbearance and of sharing among those who are urging important projects, all of which may be exceedingly timely and important.

There will be occasion also to search carefully into the statements which are made by those who have some particular notions or interests to serve. It is not always possible to discern the motive which may prompt some one to really serious perversion of the facts. This is a case in point. The writer happens to be a member of the school board of the city of Berkeley, and as such received the other day an anonymous typewritten circular charging that the efforts now being made to promote agriculture and nature study as subjects to be taught in the public schools, were really an attempt of the University of California to rule the public schools of the State. We cannot see what the University wishes such mastery for, but the writer of the circular seems to know that or intimates that he does, and raises a cry of alarm that the introduction of agriculture and natural science is the way in which the schools are to be captured. Now the fact is that the initiative of the movement to teach agriculture in the schools does not come from the University at all, although the ignorant anonymous writer either does not know that or ignores it. The initiative comes straight from the farmers themselves. The California State Grange made the first definite declaration for it. The State Fruit Growers' Convention followed and other organizations, general and local, are taking it up. The University approves it and those teaching such branches in the University are ready to do all that they can to promote it, but to charge the institution with taking up that agitation and pushing it to gain for itself some sort of a mastery, is an insult to the thinking farmers who believe that modification of the curriculum in the lower schools is essential to the higher development of their industry. No one should be influenced by a publication which the writer is ashamed to decently father.

Do not be too late in ordering your seeds, plants, vines and fruit trees from the seedsmen and nurserymen. It is a very good season for planting and there will be a vast amount of it done. There are thousands of new places to be planted this year by the throngs of new settlers, and old owners are showing much activity also. This means that those in the seed and plant trade will have a busy season, and, from what we hear, supplies of the best things are not very large. To get what you want, and to get it in time and in good shape, do not wait too long in sending in your order. Long as our planting season is, there is apt to be a rush toward the end, and, when that comes, it is not good either for the trade or the planter. Study the announcements in our advertising columns by the best nurserymen and seedsmen in the State, send for their catalogues and write to them about what you want, and do it now. Early planting, if well done, invites the fullest success.

QUERIES AND REPLIES.

Effects of Climatic Conditions Upon Apple Characters.

TO THE EDITOR:—I send you specimens of Yellow Newtown Pippin apples grown in the Hood river and the Rogue river districts of Oregon and one of our own fruits of the same variety grown in the Pajaro valley. How do you account for the differences of color, character of skin and of form also? Are they from different types of the variety or due to climatic conditions alone? I have secured grafting wood and propose to compare them when grown under similar conditions by working over old trees with the northern scions.—C. H. RODGERS, Watsonville.

We receive with pleasure the samples and your inquiries concerning them are exceedingly interesting and important. It seems to us that part of the difference in the specimens is plainly to be attributed to atmospheric conditions. The Hood river region lying east of the Cascade mountains partakes measurably of the climate of the interior and the characters which are given to fruit by interior climates are clearness and brilliance of color, fine texture of skin and freedom from discoloration (russet and the like), all of which minister to a very high refinement of the fruit in its external characters, as is shown by the product of eastern Washington, eastern Oregon, Idaho, etc. It was saddening to a Californian to note the distressing difference between the external appearance of the fruits of the coast valleys of California when compared with interior fruit from the region just named as they were all exhibited together at the Oregon Irrigation Congress in 1903.

The specimen from Rogue river valley shows the effect of the compromise climate existing in that district which is separated from the immediate coast by considerable distance and by a high range of mountains, while it is also denied interior conditions by the intervention of the higher range of the Cascades, so that one might expect that the Rogue river fruit would bear the marks of the interior condition and the coast condition combined which this sample manifests. It loses in clearness of color by the occurrence of greenish patches and by the occurrence of the russety marks.

The Watsonville specimen shows the effects of California coast conditions in their fullest development: dull color, large intermixture of green, very large russety areas and a general thickening and coarseness of the skin.

The foregoing it seems to us are clearly climatic modifications. We are not so sure that the variation in form is to be accounted for in the same way. It is quite possible, of course, that there should be a modification of form produced by the same influence that affects color and texture and we have seen modifications of form in other fruits from different parts of California which seem to warrant such a conclusion. We doubt if anything but a careful experiment will, however, actually determine it. There may be, of course, an irregularity of form, resulting from lack of selection of proper type in propagation. Our California nurserymen, and nurserymen generally for that matter, have given altogether too little attention to taking buds and scions from trees having the best form of the variety and have been too much content to propagate from anything handy which bore the name. If that is true then the irregularity of the Watsonville specimen which you send may be to some extent due to that; but on the other hand, we have no particular reason to think that the propagators of apple trees in the north,

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from whose stock trees were taken bearing the specimens which you send, have been any more careful in this respect than have our nurserymen. Such experiment as you have in view is absolutely necessary to a settlement of the question, for as you have secured grafting wood from the trees bearing the fruit which is of such acceptable form, it will be exceedingly interesting to know what your results are.

Bringing Up Recumbent Trees.

TO THE EDITOR:—I am looking for information regarding the pruning of plum trees. The variety I have is the Satsuma. I bought one-year-old trees, cut them back to 26 inches in height and trimmed the branches to about 6 inches from the trunk, leaving five to six limbs to the tree—this being done at the time of planting. They made a good growth and the following winter I pruned the growth back one-half. The limbs had a tendency to straggle out, and many downward, so in pruning I made the cut leaving the bud on top, thinking the following growth would grow up, but many of the branches grew straight out and downward and the limbs are quite heavy, making good growth this year. I have seven acres set to apples and plums and cut them all back alike, my aim, of course, being to have low trees Do you think it advisable to cut or prune the plum trees back again this year, same as I did last? Leaving the bud on top of the limb for new growth would be the only way to have them grow up right, would it not? In pruning this way would it reduce the bearing of the tree and the tree benefit by not fruiting so heavily? The trees have been planted two years, and a few were two-year-olds when planted. I am an amateur in growing an orchard and am very desirous of having an up-to-date fruit farm.—AMATEUR, Los Angeles county.

Some of our fruit trees have such irregular growth habit that they do not readily take to the vase form and an upright growth, which on all accounts is most desirable in a California orchard. You have done the best that could be done with the trees which you describe and now you will have to continue undercutting less frequently, seeking now an opportunity to develop a small branch which has an upright tendency and cutting away everything beyond it. It is sometimes desirable, however, to allow a young tree to follow the groveling habit to a certain extent until it gets more stiffness and rigidity in its growth and then cut back to upward-growing branches, continuing that course until you secure the form which you have in mind. Sometimes props are used to hold up the branches; sometimes they are tied from one to another through the center of the tree with bale rope or fence wire, and recently a method has been introduced at Watsonville by which lower horizontal branches are drawn up toward the center of the tree by means of a device specially made for this purpose, known as Hoyt's tree support. This is a very good arrangement to overcome such difficulty as you describe. It would be better to resort to some arrangement of this kind to support the branches and let them carry a fair amount of fruit rather than to continue the cutting back. Fuller details concerning methods of pruning different fruits are discussed in our book on "California Fruits and How to Grow Them."

Is It the Canada Thistle?

TO THE EDITOR:—Kindly advise me regarding the best method (if there is any) of eradicating the Canadian thistle. In the present instance they are growing on very fertile land, sediment formed by river and salt water. Can the thistle be killed by mowing in summer and filling the hollow stock remaining in the ground with a strong solution of common salt or acid or any other ingredient?—READER, Humboldt county.

Are you sure you have the Canadian thistle to deal with? Our own observation has been that this particularly pernicious thistle does not grow in California. It is not a large thistle and is particularly objectionable on account of its running roots and multiplication by sprouting from them. From what you say about the possibility of putting something in a hollow stalk remaining on the ground, we apprehend that the plant you ask about is not the Canada thistle, but the Spanish thistle—a large plant with variegated leaves and a stalk an inch or more in diameter at the ground. This plant grows only from seed and is an annual; consequently can be kept under control by cutting before the plant has a chance to bloom or ripen seed, and it would be better to rely upon this treatment than to undertake to treat the roots with poison. We are quite interested to know, however, whether it is really the Canada thistle that you have to deal with or some lesser evil. If you can send a fuller description of the plant it would enable us to determine this fact for you.

Stocks for the Cherry.

TO THE EDITOR:—I am about to plant a quantity of cherry trees and am seeking information as to proper root for the cherry in this light, more or less shallow foot hill soil, well drained. The relative merits of the Mazzard and Mahaleb roots is what I would like to ascertain. One very successful grower here claims his 25-year-old cherry trees are all on Mahaleb and that the Mazzard root has not done well. Others, who believe their trees to be on Mazzard, are also successful. There is considerable die-back on cherries all over this district. My own experience with Mazzard root is: Planted 150 Royal Annes and Oregons four years ago, all on Mazzard root. Ten per cent have died from no apparent cause, while the balance have done well.—GROWER, Placer county.

The Mahaleb root is more hardy than the Mazzard and is less subject to injury by soil saturation during the winter season and for this reason it is coming to be popular in the Sacramento river lands. It is also more hardy against injury by summer drouth on shallow soils, which is the occasion for the die-back of the cherry tree in some parts of the State. While there may be particular places in which the Mahaleb is the better root, we still think that the conclusions of forty-years' experience in California cherry growing, which approve the Mazzard, are on the whole trustworthy. The Mazzard is a better grower and, where moisture conditions are fairly good, leaves little to be desired. With others, as in your own experience, a few trees will fail without apparent cause, and there may be several reasons for this, although the chief reason is probably that the failing trees stand either in the places where water gathers in the winter time, or where the soil is too shallow to retain moisture enough to carry the tree through the dry season. We would endeavor to ascertain by observation the soil conditions where these individual trees have failed and try to correct these conditions by drainage or by a little more water during the irrigating season, as the case may be. The Mahaleb is not only a poorer grower than the Mazzard, but it is also inhospitable to the buds of some varieties, and double working has to be resorted to, which is expensive, both in outlay and time.

The California Vine Disease.

TO THE EDITOR:—Can you inform me if anything new has been found as a cure for the "California Vine disease?" While attending the late Fruit Growers' Convention I made what inquiries I could. I found leading growers very pessimistic regarding the outcome, one man saying "that he regarded the European varieties as doomed," and was devoting his attention to the Munson seedlings, hoping to find some that would take the place of the European. I tried spraying with Bordeaux mixture last year, but cannot see that it did any good.—SUBSCRIBER, Alma.

Serious as the disease is, it is going too fast to pronounce doom upon the European varieties. We expect that there will continue to be sad losses in certain localities; but to give up the contest is too premature certainly. We are confident that the escape will be found, and many investigations and experiments are working toward that end, but until demonstrations are made we do not feel like asking people to place too much dependence upon our assurance. As for the Munson direct-producers, we expect you met one of our friends of the Santa Clara district who has been doing much enterprising work with them. The effort is worth a lifetime of careful observation, but it is at present warranted neither to approve them nor to condemn the others for all time. The question is one which the world has to live a little longer to determine.

The Doubling of Gros Prunes.

TO THE EDITOR:—Can anything be done to overcome the tendency of the Gros prune to double? It interferes with the sale of them.—GROWER, Contra Costa county.

The Gros prune has the bad habit of coming double and there is nothing that can be done for it, because it is the natural disposition of the variety. Some years the doubling will be worse than others, but there is probably nothing that can be done to regulate it. If the trees are strong and healthy they can, of course, be grafted over to some other plum like the Victoria, which quite closely resembles the Gros prune in color, size, form, etc., and is not given to doubling.

Deformation by Apple Mildew.

TO THE EDITOR:—I am forwarding you under separate cover some twigs of Ben Davis, which are shortened and thickened badly and covered with buds near together. These may grow on the larger branches in bunches of brush. Sometimes we find it on our Rome Beauty or Johnathan, but in lesser extent. Again out of one of these "bunches" a bud will throw up a growth of 3 or 4 feet long, to all appearances strong and healthy.—GROWER, Payette, Idaho.

Mildew is quite abundant on the twigs and is no doubt the cause of the peculiar growth. This is a powdery mildew which appears on the young growth early in the season, causing the leaves to become curled and subsequently to brown or blacken. The sequence of this injury to the leaves is the shortening and swelling of the young wood. The protection of the tree consists in prompt treatment of the mildew, and this is perhaps most easily accomplished by the use of sublimed sulphur blown into the new growth with a bellows, or shaken upon the foliage from a bag at the end of a pole. If a good coating of sulphur is lodged upon the new growth the evaporation of it will kill the fungus spores. The fungus would also be destroyed by the Bordeaux mixture if you prefer to spray, and if you spray for the codlin moth the addition of Bordeaux mixture would enable you to attack both the moth and the mildew at one operation.

Grape Pomace for Morning Glory.

TO THE EDITOR:—I notice an inquiry in regard to morning glory. I have been told that grape pomace spread over the ground would kill morning glory, but can't say how true it is; I haven't tried it.—T. J. TRUE, Sebastopol.

A good, solid cap of grape pomace would exclude light and air, and if held solid long enough would kill morning glory or any other aerial plant. Possibly also there might be enough acid created by fermentation of pomace, scattered and worked into the soil in sufficient quantity, to kill this or any other plant. If, however, one gets an idea that morning glory will die sooner than other plants under such treatment, he is likely to be mistaken. The proposition is, then, whether one is willing to knock out his land from growing anything for a period. The whole question is, however, one of fact, not reasoning. If any reader has done it, let him say when and how.

Preserving Cider.

TO THE EDITOR:—Will you please give me the recipe for making unfermented cider without heating? I am told that a certain quantity of mustard added to the cider will prevent fermentation. Will you kindly tell me through the PACIFIC RURAL PRESS how much sulphur should be added to a gallon of cider?—SUBSCRIBER, Pomona.

Mustard seed for cider keeping is an old household prescription. We remember that in our childhood we got an idea that it was resorted to chiefly by those who had a taste for hard cider and that the mustard plaster was chiefly for its effect upon their own consciences or for meeting the objections of their wives or other advisers. We remember also an impression that deacons as a class largely took the mustard route to comfort. We never heard of using sulphur—though the sulphur salts are often used in the preservatives sold for cider keeping. You can buy such preservatives at the stores and they are probably the best you can do unless you use heat in pasteurization processes.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 4, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	4.04	17.37	18 53	19 27	62	40
Red Bluff	2 52	14 76	12.18	12 00	58	30
Sacramento	.50	8.78	4.73	8.10	68	32
San Francisco	.45	10 18	6.20	10.66	60	42
Fresno	.87	6.18	.92	3.61	68	30
Independence	T	.45	.42	1.78	58	30
San Luis Obispo	1.50	6.47	.82	7.88	72	34
Los Angeles	1.68	3 56	.43	6.83	78	42
San Diego	.80	2.59	.42	3.56	72	46
Yuma	T	.91	.66	1.71	70	34

ENTOMOLOGICAL.

The Entomological Equipment of the Horticultural Commissioner.

By Professor C. W. Woodworth of the University of California at the Fruit Growers' Convention at San Jose.

California has led the world in the effort to control its fruit pests. At the time the first laws were enacted establishing our system of horticultural commissioners they placed us well in the lead in the matter of practical control. We have, however, remained practically stationary through two decades, while other States have advanced, until now only State pride prevents us acknowledging that we have been left behind. Many have expressed their conviction that our laws should be radically changed and brought in line with the progress of other States, if not to new and advanced ground which will again assure us the leadership. We ought to be able to command the services of the best men and draw them from any part of the world, instead of seeing our island neighbor deplete our own forces. We should add to our system of county and State horticultural officers, the two items entirely neglected in the past, a department for investigation and a scheme of centralized control. These are the two points which have given efficiency to the Eastern inspection systems.

But it is not my purpose to-day to discuss the subject of horticultural legislation, but rather the means of making our present system more efficient—particularly to indicate what might be done in the study of insects.

Preparation for Office.—In every department of human effort the tendency of the age is to insist upon a special preparation of those undertaking any work, because of the greater average efficiency of those thus trained. The application of this principle to the office of horticultural commissioner is something that cannot be too strongly insisted upon. Laws are not the really important thing. The personnel of those entrusted with their administration largely determine whether laws are useful or not. A strong public sentiment which will insist that the horticultural commissioner shall be a man specially qualified for his position, will go far towards making the position worthy the best efforts of the best equipped men.

In comparatively few instances in the past has the man appointed to this position made any special effort to prepare, except in the most general and superficlal manner, for the duties of the office. Usually he has first secured the place, and then attempted to inform himself upon the subjects in which his duties require knowledge. In many cases commissioners have after a time become quite well informed and have proven efficient and valuable officers, and continued long in the service to the full satisfaction of their constituents. Whatever of success has been attained in this work in this State has been due to men of this class. These men have felt the need of knowledge so keenly that they have fitted themselves in the hard school of experience. They will be doubtless the first to appreciate the importance of insisting upon the appointment of properly qualified men to these positions.

Qualifications.—Perhaps none will take issue against this general principle, but may be inclined to doubt the possibility of finding or commanding specially qualified men, and may differ as to what constitutes the most important qualifications for the office.

Some years ago, in the course of a conversation with a gentleman who has charge of the administration of one of the most effective State systems of horticultural inspection, he remarked that he regarded the most important qualification of an inspector to be honesty. He considered it so important that he would be willing to overlook almost any deficiency in technical knowledge if he could be assured that this quality of a man's character was highly developed. In a centralized system like the one which he controlled, where every determination made in the course of inspection work was checked up in the main office, the possession of technical knowledge may be less essential than here; still here, as well as there, honesty must be reckoned as the qualification par excellence.

Honesty.—Honesty is of many kinds, as well as being possessed in all degrees. The quality of honesty required to make a good horticultural commissioner is what we call scientific honesty. We have all doubtless known men strictly honest in money matters, for instance, whose conscience seemed wholly asleep in religious or political affairs. Honesty of any kind is something that must be developed and trained before it will be large enough to be conspicuous. A high degree of scientific honesty is really a rare thing, though it is no harder to develop than any other kind.

Knowledge.—The most important item in the work of a horticultural commissioner is the determination of scientific facts. If he is not an expert, he is able to do nothing well. We are all so full of prejudices; so apt to jump at conclusions without adequate knowledge; so thoroughly unreliable in our ordinary observations, that unless a man has had a training specially developing his conscience in such matters, his word is not worthy of belief. No matter how honest he may be in other matters, he should not be trusted under oath if he attempts, without first becoming an expert, to decide such matters as a horticultural commissioner is continually required to decide in the performance of his duties.

An expert is one whose training has been such that he can say a thing is so, and say it honestly. He knows what is necessary to do to determine the truth about the matter, and takes the pains to learn the truth. As long as public opinion fails to insist upon the necessity of experts in this office, a great many of the appointees will fail to appreciate their need of growth.

Do not misconstrue what has just been said as containing the suggestion that there is or has been dishonesty in this matter. Such an insinuation is entirely foreign to my thoughts. Between the form of immorality we call dishonesty and the positive righteousness of honesty there is a broad neutral zone of undeveloped powers incapable of either good or evil. The office of horticultural commissioner has been filled, as a rule, with men remarkably free from dishonesty, even those who have never qualified themselves for their work, and I have been glad to know and number among my friends a large number of these officers.

Loss of Service.—Those who are now horticultural commissioners and have become expert enough to give satisfaction in the administration of their office should never be replaced by others for political or other trivial cause. They have become valuable men and have a knowledge of the local situation that no one else possesses and must learn before they will become most effective.

When a new unqualified officer is appointed, there will be an interval while the new man is trying to make himself capable, during which very serious losses may occur, through his ignorance. If such risks are not to be taken, a man already an expert must be chosen.

Entomological.—Insects are responsible for such a large part of the work of a horticultural commissioner that the entomological equipment represents no small factor in the qualifications he should possess. A man may be a very good entomologist, however, and possess very little knowledge that will aid him as a commissioner. Entomology is so large a subject that few go further than to familiarize themselves with some small division of it. Most of those studying the subject have nothing to do with injurious forms. Being an entomologist, therefore, may not fit a person for the horticultural work with insects any more than being a geologist or chemist. Scientific work of any kind is a real preparation nevertheless, because a thorough study of any science cannot fail to develop to a high degree the quality which we have denominated "scientific honesty."

Among the things a horticultural commissioner should possess is a sufficient knowledge of the injurious insects to apprehend all suspicious characters. This requires that he shall know something of the habits of all groups of insects and be able to recognize them in all their stages. Of course, in special cases he can submit specimens for determination to those who have made a special study of the particular group, and should avail himself very frequently of this help, but this will not do for the routine of everyday work and, after a specimen has been authentically determined, the work becomes permanently valuable only to the extent that one understands how it differs from other allied forms and may thus become capable of certainly identifying it again.

A much more important matter than a knowledge of species and habits is the ability to appreciate the effect of external conditions on insects. The fact that an insect is injurious in one situation is no proof that it will be so in another locality, nor its harmlessness elsewhere full assurance of its behavior here.

No insect is uniformly injurious. The codlin moth, for instance, is capable of producing a loss averaging fully half the crop in some sections and on exceptional years taking almost everything, while in the State as a whole it scarcely averages 25% and in several regions there are considerable areas so entirely free from loss that 1% would be a large estimate. The San Jose scale, which has given this district a bad name, has long ago ceased to be a very troublesome insect. Northward along the bay it is only periodically a serious pest, and at Berkeley it is practically unknown, being replaced by the much less fatal species—the greedy scale.

Thus we might show an extreme range of variation for all injurious species even within the limits of this State. So diverse are our conditions that no general plan of fruit pest control can be devised for the State, nor for all parts of a single county.

Discretion.—The county commissioner is not simply a police officer, delegated to enforce specific laws. The necessities of the case make him much more than that. The purpose of the law is to accomplish as much good as possible, and the provisions are intended to be elastic enough to enable him to do what is wisest in each particular case. This large amount of discretion given him imposes upon him a correspondingly great responsibility. He must decide in every case whether this insect under these conditions constitutes a real menace to the horticultural interests of this district or of this State. An error in either direction involves a financial loss to the citizens of the State. An active commissioner is quite likely to decide doubtful cases in a way involving a small immediate loss, rather than take the risk of greater future losses; and the more passive one will take these risks rather than produce unpleasantness by a positive stand requiring the destruction of property. In either case there is easily possible a loss far greater than the amount that would be necessary to pay in order to employ continuously an expert of the highest quality.

Books.—At this time of the world, when reading matter is so abundant and cheap, we might suppose that every commissioner would have a well-selected library of the standard books dealing with his professional duties, but the fact is——no; I will spare the feelings of those commissioners who may be present and refrain from saying how bad it is.

Perhaps some have been so impressed with the fact that California is different from any other part of the country they fear to fill their minds with things that will not apply under our conditions. They may be afraid of learning entomological heresies. While it is true that one must make due allowance for our climate, there is no excuse for remaining ignorant of the best knowledge of other countries.

Every commissioner should possess a set of the standard entomological text books, and keep abreast of the current entomological work of the world. For the latter purpose, I would recommend the Experiment Station Record, published by the United States Department of Agriculture. This comes twelve times a year, and contains notices and reviews of everything of importance in economic entomology appearing anywhere in the world.

What the University Tries to Do. — The University has tried to do what it can to aid commissioners in their work and in the preparation of those doing, or desiring to do, horticultural inspection work. Possibly, in conclusion, I can enumerate these efforts, as a reminder of how earnestly and sincerely we have endeavored to be of service. These activities may be grouped as follows:

Publications—The Experiment Station of the University issues reports, bulletins and circulars on all sorts of agricultural topics, many of which bear directly on a commissioner's work. These will be sent free to any one desiring them. We can furnish a limited number to commissioners for distribution to those with whom they deal in their work, and will be glad to send any bulletins still in print to names furnished by the commissioners.

Correspondence—The University holds itself ready to answer direct inquiries, as far as it is able, and many commissioners have availed themselves of this service. Answers are made as promptly and fully as possible and no one should have any hesitation in applying, though it not infrequently happens that questions will be asked that we cannot answer satisfactorily.

Co-operative Investigation—Where a problem presents itself which cannot be answered, if it is of sufficient importance, the Station is ready to assist in an attempt to discover the answer by a careful investigation of the subject. We have co-operated with the horticultural commissioners of several counties. Our usual arrangements for co-operative work have been that the Station furnish one or more men, who will work under my direct supervision, and those co-operating will pay the local expenses. In the case of co-operation with county commissioners, the man delegated for the work often is appointed an inspector, because it is easier to arrange for an inspector's salary than to get an allowance for expenses from the supervisors. Finally, the Station publishes the result of the study, giving due credit to the officers co-operating.

Class Instruction—The University has arranged a way by which a person who is mature enough may enter the Agricultural College as a special student without examination. Thus persons who, perhaps, could not meet the requirements for regular admission, but who have serious intentions, are admitted to the same laboratories and classrooms as the regular students. Everything that we can offer in the way of instruction is freely offered to any who may wish in this manner to prepare themselves better for their work. The short course given each winter is designed particularly for special students having very little time at their disposal. The instruction in entomology has now been arranged so that a person can enter at any time and find ample work to occupy his attention for a period of any length he may desire and commissioners or prospective commissioners are particularly welcome. The new laboratories which have been planned, and we hope will soon be constructed, will be the most complete and best arranged building for instruction in this subject to be found in the world.

Opportunities for Research—In connection with the instruction at Berkeley there is opportunity for actual field experience in research work, after a student has qualified himself therefor. This is in connection with the co-operative work previously alluded to. Thus far the demand for assistance of this kind has greatly exceeded our ability to supply the men

capable of doing the work required. Such students are stationed for a time in the region where the problem in hand can best be studied, has everything in the way of scientific apparatus and the use of orchards—indeed, all that is necessary for the study—and, when results are secured, a place for publication which will at once give him a standing among the economic entomologists of the country. A training of this kind I conceive to be none too elaborate a preparation for the work of a horticultural commissioner.

Reading Courses—There are many who are ambitious, but cannot take advantage of the regular University work. For such, a reading course has been prepared, intended to acquaint the reader with a good selection of the best literature on economic entomology. A great many of our county commissioners are now availing themselves of this course. We have had in all something over 200 applicants for this course—more, indeed than we have been able to provide books for. Those who conscientiously follow this course will have a good foundation in this science.

Collections—The Experiment Station will soon issue a circular giving directions for collecting insects and we will make the offer to any desiring to make collections for themselves to furnish them a set of specimens, carefully mounted and named, in return for specimens they may collect and send for the University collection.

This proposition will be made particularly for the purpose of aiding country schools and county horticultural officers in obtaining named sets of their common insects. These collections will be furnished in neat boxes, suitable for exhibition on the wall of the school-room or office, and should be found very useful for the identification of specimens brought in for comparison.

These efforts of the Entomological Department of the University are based on the thought which has been the burden of this paper—the belief that the future demands more from us than the past has received, and that in the practical work of insect control greater evidence of progress is imperatively demanded.

THE IRRIGATOR.

Water Rights in California.

NUMBER II.

Written for the PACIFIC RURAL PRESS by SAMUEL C. WIEL.

WHAT CAN BE APPROPRIATED.—1. Water flowing in watercourses is the usual case. (Civil Code, 1410.) Close questions arise as to what is and what is not a watercourse. In Sanguinetti vs. Peck, 136 Cal. 466, at 471, the court says:

"A watercourse is defined to be a 'running stream of water; a natural stream including rivers, creeks and rivulets. (Black's Law Dictionary, title Watercourse.)' Further defining the term, this court said: 'There must be a stream, usually flowing in a particular direction, though it need not flow continually. It may sometimes be dry. It must flow in a definite channel, having a bed or banks, and usually discharge itself into some other stream or body of water. It must be something more than a mere surface drainage over the entire face of the tract of land occasioned by unusual freshets or other extraordinary causes. It does not include the water flowing in the hollows or ravines in land which is mere surface water from rain or melting snow (i. e., snow lying and melting on the land) and is discharged through them from a higher to a lower level, but which at other times are destitute of water. Such hollows or ravines are not, in legal contemplation, watercourses.' The evidence does not bring the depression, or swale, in question within this definition. This so-called watercourse is nothing more than a local drainway to a limited amount of land which has neither a definite beginning nor ending and is like hundreds of similar swales found in land whose surface may be called generally level."

In Lux vs. Haggin, 69 Cal. 255 at 419, it is said that a channel is necessary to the constitution of a watercourse, and also a tendency of water to flow in it, more or less regularly. This second requisite is not fulfilled by a chance flow in a channel usually dry all year round. (Ib.) It is a question depending on the facts of each case whether water from freshets and melting snow is mere surface water flowing irregularly in hollows and ravines, as said in 136 Cal. 372, just quoted, or is water feeding its own channel under a tendency to a more or less regular flow.

2. Diffused surface water from rain and melted snow, and not in a watercourse, cannot be appropriated, as the cases just referred to point out. Its presence and movements are too capricious to found any right upon, distinct from the land where it is gathered. In fact, the question that usually gives difficulty is not who can use it, but how to get rid of it, some courts calling it a common enemy; but that is another question.

Whether waters of a lake or pond can be drawn off by appropriation is seldom discussed. The cases almost invariably speak only of "flowing water," "running streams," "water in watercourses," and likewise C. C. 1410. However, riparian rights attached at common law to lakes and ponds as well as streams, and the law of appropriation was assumed to apply to them also, before the Code, in 15 Cal. 271, involving three lakes above the Yuba river. It may be that lake water can be appropriated, though not mentioned in C. C. 1410, for that section is not exhaustive of the kinds of water that can be appropriated (141 Cal. 116).

Swamp or overflowed lands are owned by the State, unless already passed into private hands, and are dealt with by special statutes and rules of their own. The law concerning them is discussed in Lux vs. Haggin, 69 Cal. 255.

3. Underground water is the kind concerning which the law has undergone its greatest of all changes in California. It may be said tentatively that underground water is to-day in California treated like water on the surface.

The first class of underground waters is water flowing in a definite underground stream It can undoubtedly be appropriated (53 Cal. 578), for such streams have always, even by the common law, been treated on the same principles as surface streams (69 Cal. 217).

The second class is water seeping underground from beneath definite surface streams. Such water is as much part of a stream as the surface flow, for it is a scientific fact, that below every river bed, not absolutely impervious, there is a more or less deep substratum of flow, seeping along with the stream through the soaked soil, the drawing off of which results in a tapping of the stream itself. Whether this subflow of a stream can be appropriated depends on whether the stream itself could be appropriated, and that, as we have seen, depends on whether there are already occupants or appropriators whose use of the stream would be interfered with. For example, in 126 Cal. 486, the appropriation of the subflow by means of a tunnel was upheld, as against later claimants. On the other hand, in the recent and much talked of case of Montecito Water Co. vs. Santa Barbara, 28 Cal. Dec. 405, the city was denied the right to withdraw water by means of a seepage tunnel from a surface stream already appropriated by the water company. At the same time it was pointed out that it is a difficult matter to prove just how much the company's stream was, in fact, tapped by the tunnel, since water must have seeped into the tunnel from all directions. To the extent which, on proof, it is shown that the tunnel tapped the surface stream, however, it was held unlawful.

The third class is water percolating underground, diffused, without connection with any definite channel. In 126 Cal. 486, it is said that "percolating waters" is a phrase of well-defined meaning within the law, adding:

"It is essential to the nature of percolating waters that they do not form part of the body or flow, surface or subterranean, of any stream. They may either be rainwaters which are slowly infiltering through the soil, or they may be waters seeping through the banks or the beds of a stream which have so far left the bed and the other waters as to have lost their character as part of the flow."

The law in this wide class of underground water may be said to be now in the making, both as respects appropriation and as respects riparian rights, if that term may be applied to this new subject. There have been seven cases in our Supreme Court dealing with or discussing percolating water within the last two years. In this place it is enough to say that it seems well established that percolating water is subject to appropriation. It was so directly held in Cohen vs. La Canada Water Co., 142 Cal. 437. There the first comer had appropriated, on vacant public land, water percolating in springs, by means of pipes. The springs were not fed by any known stream running in any defined channel—it was purely diffused percolating water gathered underground from rains, etc. A later comer drove tunnels nearby, which caused the springs to dry up. Judgment was given against him for doing this. That is the only California decision holding directly that mere percolating water can be appropriated; the other cases deal with the appropriation of it only incidentally, being chiefly concerned with the so-called riparian or landowner's rights therein. The leading case of Katz vs. Walkinshaw, 141 Cal., 116 was of that kind; but, taking occasion to speak of the rights of appropriators, says that they will come within the same rules here as in other kinds of water; that is, prior occupants of overlying land, or prior appropriators of the percolating water, must be protected first.

This treatment of percolating water is entirely novel. In the old law no rights whatever were recognized in diffused percolating water as a separate thing; it was regarded as a mere ingredient of the soil—one of the constituents of the soil—just as feldspar and mica are constituents of granite. The man who owned water-soaked soil had a right to do with it what he wanted, and he could dig out the soil, carrying the water with it, or he could leave the soil and take out only the water; and to look into any change resulting in the constituents of his neighbor's soil was deemed beyond the province of the law. So long as the percolating water stayed in the soil, the owner of the soil could take it, and take all that came there; likewise his neighbor, who could hence drain it all away. This old rule of diffused underground water is somewhat like the law of diffused surface water, already mentioned; both were too uncertain in their movements to found any right upon distinct in itself. It still remains the rule in California as to diffused surface water. Until the case of Katz vs. Walkinshaw (141 Cal. 116), two years ago, it was thought firmly established by several decisions as the law of percolating water also (e. g., 42 Cal. 303); but the recent cases have now settled the new rule.

This new rule was fixed purely out of public policy. The old rule was unsuited to conditions in California at large where, with its large extent of arid land, the widest prosperity depends on putting the land under cultivation by making the underground water serve the largest number of people, and lands, and uses. It is a rule grounded on public policy, but the interests of the agriculturist carried the determination of that policy. The importance of it to the miner lies in the fact that mines are likely to drain wells, and springs, and the subflow of streams in the neighborhood. Will the miner be held liable for taking water that belongs to another? It will be proper to consider that again later. It is enough here to point out that underground water, whether in a defined stream, seeping from a surface stream, or percolating, diffused, unconnected with any stream, may be appropriated for use.

4. It may be added that the surplus over what has been claimed by prior appropriators (13 Cal. 220) or reserved for prior occupants, under the doctrine of riparian rights (102 Cal. 151; 69 Cal. 255), can be appropriated. As to the latter, what constitutes such a surplus over riparian use cannot be examined here. It is enough to say generally that anything over the amount needed for domestic use or for reasonable needs in developing the occupant's land can be appropriated. In fact, a riparian owner is bound to return all surplus to the stream, and so cannot lead the water over a watershed whence it would be impossible for it to flow back. (126 Cal. 135; 113 Cal. 142; 77 Cal. 66).

[NOTE.—The case in 126 Cal. 486, is referred to a upholding the right to appropriate the subflow of a stream by means of a tunnel, as against later claimants. The facts of that case are worth stating. The stream in question was the San Gabriel river, where it flows over Government land. There were three sets of claimants to the water; first, those who had appropriated all the surface flow; then an irrigation company, who posted an appropriation notice and began work on a tunnel for developing water, and who continued the work on the tunnel later under compromise agreement with the surface owners; finally, an irrigation district which began another tunnel on the opposite bank, and finished it first. The tunnel of the company was upheld against that of the district—chiefly because the surface claimants had agreed to it and had not agreed to the district's tunnel; partly also, because the company's tunnel, having been started with a notice prior to the district's tunnel, was, as between the two, prior in time by relation, though completed later than the other one.]

(TO BE CONTINUED.)

THE ORNITHOLOGIST.

The English Sparrow and How to Get Rid of Him.

By FLORENCE P. NOYES at a meeting of the California Audubon Society at Berkeley.

No bird has had so much abuse heaped upon it, and with good cause, as the English sparrow—"a bird too pestiferous to mention." It is perhaps small comfort to know that we have brought this evil upon ourselves—that for some twenty years "benefactors" of their country, with what now seems to us malice aforethought, deliberately imported into our country hundreds and even thousands of sparrows, mainly from England and Germany. The first introduction of these birds was in 1850, when Hon. Nicholas Pike and other directors of the Brooklyn Institute imported eight pairs into Brooklyn, and the largest single importation—1000 sparrows—was made by the city government of Philadelphia in 1869. Two or three years later the birds were introduced at San Francisco. Owing to their unusually natural adaptability and to the fact that they were carefully watched and protected, the sparrows increased with surprising rapidity and soon distributed themselves over a wide area. Not until forty years after their introduction did people begin to realize the magnitude of the "craze" which had led to this really serious pest. "Like a noxious weed transplanted to a fertile soil, it had taken root and become disseminated over half a continent before the significance of its presence came to be understood."

It is quite likely that sentimental reasons were responsible for many of the importations and that the English, French and German immigrants in our treeless cities, longing for the familiar chirp of the birds of their fatherland, had the sparrows shipped to them from home, at considerable expense. The average American citizen, totally ignorant of the economic value of our native birds and dazzled by the erroneous and grossly exaggerated reports of the benefits conferred by the English sparrow, in some of the large cities, was deaf to the warning of the occasional naturalized citizen who recollected the years

spent in fighting the birds in his native land, and entirely oblivious to the protests of the few intelligent naturalists who opposed its introduction.

In Bulletin No. 1 of the United States Department of Agriculture, a careful and exhaustive report on the English sparrow in North America, an interesting computation has been made of the total, possible progeny of a single pair of English sparrows in ten years, assuming that all should live. Taking as a basis the fact that they raise from four to six broods a year, averaging five birds to a brood, the total number produced in ten years broods 275,716,983,698. The protection afforded the sparrow by its gregarious habits and by its proximity to man, enables it to escape nearly all the enemies which check the increase of our native birds. So great is its cunning, indeed, that it is rare for a sparrow to fall into the clutches of the cat—that natural enemy of all birds.

The tide of public opinion, however, has long since turned, and the sparrow "boom" has for many years been a thing of the past. People are now wondering how they may rid themselves of these troublesome neighbors and many methods of extermination have been suggested. The Bulletin noted above (this pamphlet may be secured, free of charge, by applying to the Department of Agriculture, Washington), proves by an accumulation of evidences, which cannot be doubted, that this bird is doing great damage by the destruction of buds and blossoms, particularly grape buds, so that in California, where grape culture is very important, "unless steps are taken to wipe out the pest at the earliest possible moment, the result probably will entail a loss to the State of many thousands, if not millions, of dollars." (Bulletin, page 49.) In the same way it shows that other small fruits, as well as apples, pears and peaches, suffer continually from this omnipresent foe. Nor are the garden vegetables safe from his depredations. Peas, corn, lettuce and cabbage appear particularly attractive to him and in many cases reported it has been found impossible to raise these vegetables, as the sparrow eats them off as soon as they appear above ground; and the wheat crop suffers from the time of sowing until it is stored in the barn (the Bulletin gives page after page of the most positive proof of this fact); oats, corn, rice and buckwheat also suffer to a greater or less extent.

The question of injury by filth is one of the points against the bird which even its stanchest friends do not contest. Untold damage is done each year to ornamental trees and vines by the roosting of these birds in their branches, and no one who has had the ill fortune to foster a passion vine over his back porch until the sparrows were tempted by its leafy recesses to build their nests therein will be tempted to deny these assertions.

To offset these accusations it cannot be shown that the sparrow habitually consumes large numbers of injurious insects; on the contrary, it appears to be a thoroughly vegetarian bird. But if our native birds had a fair chance to do the work of insect destruction for which they are naturally fitted we should escape the serious insect scourges which are now so common. It is a well recognized fact that the gypsy moth and the elm beetle occur where the sparrows are most numerous.

Perhaps the most serious accusation of all is that the English sparrow "is responsible for great decrease among our native birds, especially of some of our most useful and desirable species about the cities and towns. They will break up the nests and devour the eggs of our robins, bluebirds, wrens, tree swallows and martins, song sparrows and vireos. What are we to do with this enemy of our valuable native birds?" The question thus put by Clifton F. Hodge, in his "Nature Study and Life," is answered by the Department of Agriculture Bulletin and by Mr. Hodge himself. Practical extermination is the only real remedy, and the manner of accomplishing this is the only question in dispute. Of course, all methods involving suffering and wounding are to be deprecated; poisoned grain seems to offer the easiest and quickest death. Arsenic has been recommended, but Mr. Hodge has not found it effective. From practical experience he prefers strychnine sulphate, and his manner of preparing it is as follows: "Dissolve one-eighth of an ounce of powdered strychnine sulphate in one-half pint of boiling water. Pour this while hot over two quarts of wheat, or cracked corn, stir well and continue stirring from time to time, until all the liquid is absorbed. Dry thoroughly, without scorching, and put away in some safe receptacle, labeled." A quart contains about 23,000 kernels; one kernel will usually kill a sparrow, and they seldom take more than two or three. Expose the grain in some sheltered place frequented by the sparrows, where the poultry or tame pigeons cannot get it; choose a spot where the wind will not scatter it—a porch roof with a smooth, flat surface is best. As sparrows are cunning and suspicious, it will be necessary to feed them for some time—for a week or, perhaps, even a month—with good grain, exactly like that medicated. Then, when you have persuaded all the sparrows in the neighborhood to come to you daily for their meals, you may venture some morning to put out your medicated corn. Be sure, on the evening before, to gather up all the good grain; then, when the birds have assembled for their regular rations, put out enough poisoned grain for the entire flock and in ten minutes they should begin to drop. This seems a heartless and cold-blooded operation, but experience has proved that nothing but drastic measures will be of any use and, if one is to do it at all, the utmost pains must be taken to make the operation thorough and effective—halfway methods will be worse than useless. Remember, too, that it is necessary to select a dry day for the experiment, since in damp weather the birds taste the strychnine too quickly. By concerted action and the careful use of this simple method it will be quite possible to rid a whole city of this pest in a single winter.

FRUIT MARKETING.

Widening Our Fresh Deciduous Fruit Markets.

By LIEUTENANT-GOVERNOR ALDEN ANDERSON of Sacramento at the Fruit Growers' Convention.

It is generally conceded that the growers of California, as a whole, give more intelligent attention to this phase of the business than do the growers of any other horticultural district. This is partly because of necessity. Our remoteness from the large distributing centers makes it imperative that only good fruit, properly thinned, be grown and that it be packed with the utmost care, to the end that it shall arrive at destination in salable condition, and for the best results, firm enough to stand reshipment. However, as all do not exercise the same care, it is well to state a few general principles always applicable. Fruit for shipment must be absolutely free from blemish or parasitic insect infection, because fruit that is bruised or blemished will not stand transportation and most all the other States, and countries as well, quarantine rigorously against all infected fruit, and if any of such fruit is found in a shipment, the whole is liable to confiscation. Packages should be firmly nailed and snugly placed, so that there can be no bruising because of jolting in the wagons, bumping of cars or any other of the incidents of transportation.

In packing fruit, even grade and quality should be packed in packages by themselves and the packages plainly marked with the contents thereof. One of the most improper and unprofitable things that can be done is to pack large and small fruit in the same package. The trade which desires the large fruit does not want the small fruit at any price, and those who are interested in small fruits are not interested in the large fruits, as they desire a commodity numerically greater in a package for their consumers. It will be seen that care, intelligence, judgment and constant supervision are necessary in growing and preparing the fruit for market and placing it on board the cars in proper condition.

TRANSPORTATION.—Practically all fruits are to-day transported in combined ventilator refrigerator cars, and, no matter what our ideas or desires in the matter, the trade seems to demand that kind of service. Cars for carrying this class of product must be sweet, clean and without odor. They must not, therefore, be used for the conveyance of commodities that would injuriously affect such conditions. Likewise, being highly perishable, it is vital that sufficient cars be always on hand to load the fruit in promptly, as it cannot be held over after being picked and packed for market. Great care must be exercised to properly tier and brace the contents in the cars to prevent damage from jolting and constant bumping of long freight trains. The fruit being loaded, the matter of transportation or movement of the cars becomes the element of concern. This essential is probably, at the moment, the most important of all, for, without the expeditious, proper and regular movement of cars, all care in the growing and preparation and all detail arrangements of delivering in good order, sale and distribution would come to naught. Always a vital question, changing conditions make it even more important at this time than ever before.

MARKETING AND DISTRIBUTION.—California in its entirety raises a greater variety of fruits than any other horticultural district, and, while this is true, it is also true that many different districts here make a specialty of particular varieties of fruit, with the result that almost the entire shipment from some districts, which in the East might mean an area as large as some States, is of one kind of fruit. With the system of disposing of fruits, which has grown up because of custom, co-operation on the part of those forwarding the product is absolutely necessary to obtain the best possible results, to the end that the fruits of this State shall not be brought into competition with themselves, and that the utmost evenness of distribution as regards the different varieties can be given, comparatively, to the different consuming centers.

For instance, without any co-operation, practically all the pears shipped on a given day may turn up in one city; nearly all the peaches in another; most all the grapes in another, etc., with the resultant demoralized market on those varieties in those cities and scarcity in others, whereas an even distribution would mean good prices for all varieties in all the cities. Experience has shown that when a market becomes demoralized on perishable products it will not recover so quickly as on any other commodity.

Any scheme of distribution can only be partially successful and can not attain its highest point of efficiency unless there is practically complete co-operation, because the smaller or different interests working in competition with each other, even though one interest has a much smaller percentage of business than the other, if they are disposed to cut prices, can fix the market price at which the whole must sell, unless there is a marked shortage in the volume of offerings, for, if the buyer is frightened and timid and will not buy except at extremely low prices, the perishable product will not keep and must be diverted or sold at any offer obtainable very shortly.

CONTROL OF CARS.—The direction of the movement of all cars and the determining of their destination should absolutely be controlled in California, and all consignments whatsoever should be eliminated. Buyers then would know that when they purchased fruit in California that they would not have consigned fruit to come in and cut prices on them, because the tendency of those handling consigned fruit is always to undersell their competitors. With an even price to all buyers, they would have no fear of ordering ahead and of making arrangements for regular supplies, and the very desirable element of stability would be given to the business, both East and West. Buyers would feel they had complete protection and would not be interested in trying to buy so cheaply to forestall any adverse competition, and the grower would know just what he would receive for his product, and, if the prices were not satisfactory, he could divert to the dry ground or the cannery.

All the necessary employes in the larger centers in the East and all brokers in the smaller ones should be under the control, take their orders from and be in direct communication with the central agency in California, and they should be advised daily of all shipments and also of probable shipments two weeks in advance at all times. With this knowledge they could keep in touch with the consuming trade at all points constantly and make possible the disposition of the greatest number of cars in each locality. The wider the distribution the better the average returns, for, while some growers prefer to sell all their fruit at auction and do not desire f. o. b. sales only, it must be remembered that all the fruit which is diverted from the auction rooms lessens the supplies to that extent and increases the probability and possibility of obtaining higher prices for that which sells at auction.

French Walnuts.

From U. S. CONSUL C. P. H. NASSON, Grenoble, France.

Walnuts are the second most important article of export from Grenoble. The harvest of 1903 was above the average and produced about 28,000 bales of 100 kilograms each (6,172,880 pounds) of unshelled nuts and 30,000 to 35,000 cases of 25 kilograms each (1,652,700 to 1,928,150 pounds) of shelled nuts or walnut kernels. A very large part of this crop found its way to the United States, as, indeed, is the case every year. There was an unusual amount of speculation and much fluctuation in prices between the growers of nuts, the nut merchants (middlemen) and the American buyers. The value of the shipments for the year ended June 30, 1904, through this consulate was $450,320.58. The nuts were sold in New York at about 12½ cents per pound for the unshelled, this including all costs of transportation and the duty at 3 cents per pound. These figures apply to the so-called "Grenoble walnuts," consisting of "mayettes," the best table nuts and of the shape that stands on end—and "chabertes," sometimes mixed with the "mayettes," but generally shipped in kernels or meat form.

This year the harvest, by reason of the long summer drought and exceptional heat, is but little above half the average, though the nuts are of excellent quality. This has caused prices to rule somewhat higher, the more so because, owing to continued rains, the California crop is also shortened.

Inquiries being often made as to the extent of the walnut crop in France, with a view to comparison with the crop in California, I have gathered the following approximate estimate:

PRODUCTION OF WALNUTS IN FRANCE, 1900 AND 1901.

Year.	Kilograms.	Pounds.	Value.
1900	72,529,700	159,900,590	$3,648,616
1901	87,699,300	193,343,832	3,827,178

EXPORTS OE WALNUTS FROM FRANCE, 1900 TO 1902.

Year.	Kilograms.	Pounds.	Value.
1900	17,113,000	37,727,700	$1,369,000
1901	20,849,800	45,965,938	1,668,000
1902	11,297,100	24,906,064	903,800

A representative of a large San Francisco house and of the Pacific Commercial Museum came to France this year, in September, when the harvest was practically assured, and made a personal inspection of the trees and nuts, and, with consular assistance, gathered all desired information upon which to base estimates, by the aid of which California dealers are doubtless enabled to compare the native and foreign crops, in size and quality, to forecast the market and to formulate prices.

Grenoble, France, Oct. 31.

Agricultural Review.

Alameda.

FREAKS OF MUSHROOM GROWTH.—Argus, Dec. 30: This is "mushroom" weather, and in many places growths of this fungus may be seen. One of the peculiar things is a wreath of these white-capped plants which grew spontaneously on the lawn of the City Hall. City Surveyor Poyser says that it made its appearance on Christmas morning, as if in celebration of the day. The plants came up in an almost perfect circle, about 10 feet in diameter, while radiations on one part of the circumference suggest the place at which the wreath is joined. Another peculiar place where they may be seen growing luxuriantly is on the park. There they have appropriated the trunk of a dead tree, and are growing in the crannies of the wood and bark for a distance of 15 feet above the ground.

Butte.

HONEY SHIPPED EAST.—Gridley Herald: Mr. Baker has about 1000 colonies of bees, some of which are at his home place, on the west side of the Buttes, some at Palermo and some at the Long Bridge. He extracted about twenty tons of honey during the season. A few weeks ago he shipped a carload—thirteen tons—to Chicago, and has recently received his check for the honey. The price paid him was 4 cents per pound. This shipment was what Mr. Baker denominated dark honey. He has some six or seven tons of light honey which he is selling for a much better price. A carload of honey seemed to be a whole lot of sweetness to go to such a town as Chicago and, in reply to a question as to what use is made of the dark honey, Mr. Baker said that it goes largely to the manufacturers of tobacco, who use it to doctor their product, as honey will not dry up and become hard like sugar syrup. Great quantities are also used by the drug houses and manufacturers of cough remedies and syrups. Distillers and others also make use of quantities of honey.

Los Angeles.

SCUTELLISTA SAVES ORCHARDIST $3000.—Azusa Pomotropic: We enjoyed a short visit with Horticultural Commissioner J. W. Jeffrey Tuesday, and, in speaking of the scutellista and the wonderful work it is accomplishing, he said: "Fifty cars of holiday fruit have been shipped to date from Whittier. The oranges were neither sprayed nor fumigated and washing was unnecessary, owing to this industrious little insect. On the McNally ranch (La Mirada), southeast of Los Angeles, one of the largest in southern California, the scutellista is estimated to have saved the owner in the neighborhood of $3000 this year."

RAISIN GROWERS WILL REORGANIZE.—A Fresno dispatch dated Dec. 29 says: The Raisin Growers' Association that has been in disruption during the present season to-day voted to reorganize on corporation lines instead of along the co-operative lines followed in the old organization. The general plans of organization of the raisin men on a corporation basis were outlined in a speech by M. Theo Kearney, and by unanimous vote of the growers a committee, consisting of W. A. Long, W. B. Nichols, V. H. H. MacLymont, M. The Kearney, M. F. Tarpey, C. M. Blowers and W. S. Goodfellow, was instructed to draft the article of incorporation and detailed plans of orangization. The general plans call for a stock company, with acreage of grapes as a basis. It will carry $3,000,000 in stock based on acreage, with power to issue $1,500,000 in bonds. The company will erect and control its own packing houses and seeded raisin plants. The profit that in other years has gone to private concerns is expected to go into the coffers of the big corporation.

SQUASH.—Sanger Herald: A squash that tipped the scales at 141 pounds was brought in Friday by B. S. Greenwood of Bethel district.

DIFFICULTIES OF RAISING TURKEYS.—Our farmers experience so much difficulty in raising turkeys that not many care to bother with them. A large percentage of the turkeys die before they are a month old, but if they survive that length of time they are likely to reach the market unless carried off by dogs or coyotes. Jean Carol of Indianola Colony, who has been quite successful in raising these birds, says he lost more turkeys from frequent raids by coyotes than from any other cause. The coyotes were bold enough to enter the barnyard and pounce upon the fowls in broad daylight.

Kings.

SOME HOGS.—Hanford Sentinel: N. W. Hammond & Son report that during the past seven weeks they have handled 10,400 hogs. The firm is only one of several doing business here as hog buyers.

Lassen.

A FINE LOT OF HORSES.—Susanville Mail: S. H. Crane, a well-known horse and mule buyer from Turlock, Stanislaus county, Cal., has been with us again for a few days, purchasing horses and mules, and among others he purchased forty head of fine, large, high-grade Percheron mares and geldings from William Brackman, who is known as a breeder of the best draft stock in northern California. On one of his ranches, near Susanville, he now has two as fine stallions as can be found in the State; one a Percheron, weighing 2000 pounds, the other a Shire of about the same weight. Both of these horses are fine bred and imported.

Modoc.

THOUSANDS OF ACRES PLEDGED.—Alturas special to Sacramento Bee: Subscription papers for Government water have been sent out to all the members of the United States Irrigation Committee in Klamath county, Or., Siskiyou and Modoc counties, Cal., and the prospects of the land owners signing up with the Government are very flattering. The committeeman in Alkali Valley reports that land owners there had signed up 17,000 acres. This is gratifying news for the Government and shows the feeling of the people here in regard to Government irrigation. It has taken a private company all summer to secure the acreage mentioned above. The committeemen from the Merrill district report 12,000 acres signed up without an effort. The Swan Lake representative reports 11,000 acres signed in that valley. The Keno districts reports 2504 acres.

Riverside.

FANCY PACKED ORANGES.—Enterprise: Col. E. J. Oatman of Highgrove has something new in the way of fancy packed oranges. Each box holds fifteen fine Navel oranges, the boxes selling at 70 cents each. They are very convenient to carry either home or on the cars, and present a very attractive appearance.

San Luis Obispo.

PURCHASE A VALUABLE STALLION.—Paso Robles Record: Through the agency of C. P. Gould, representing Francis I. Hodgkins of Oakwood Farm at Lathrop, Cal., Eclatant, an imported Belgian stallion, was sold this week to Kneppel Bros. of Adelaide. Eclatant is one of the finest horses ever brought to this county. He is a chestnut sorrel, three years old, and weighs 1888 pounds. The price paid by Kneppel Bros. for Eclatant was $2500. He was imported from Belgium last year by Durham, Fletcher & Co. of Illinois and brought to this coast last spring by Mr. Hodgkins, the largest breeder and importer of French coach and Belgian horses on this coast. The horse's pedigree is as follows: Eclatant 26630; chestnut; foaled June 5; imported; got by Reve d'Or 7406; dam Marthade Cambron 2507. This horse is a valuable addition to the stock raisers of this county. The horse sales from this section alone amount to thousands of dollars annually, and with better breeds the same number of sales could easily be made to return 100% more cash to the stockmen's pockets. Kneppel Bros. are to be commended for their enterprise in making this purchase.

Santa Clara.

PRUNE SUIT WON BY GROWERS.—San Jose Herald: In the suit of T. E. Smith et al. against Carcello Bros., Judge Rhodes has rendered judgment in favor of the plaintiffs for the full amount of their claim, $319.68, with interest and costs. The differences between the parties grew out of the purchase and sale of a quantity of prunes. Plaintiffs asserted that they had sold and delivered to defendants 20¼ tons of prunes at the agreed price of $18.75 per ton, and that of the total amount they had received $60 on account. Defendants admitted the facts to be as stated, except as to the quantity of prunes delivered, which they claimed to be 80 boxes short of the amount asserted, and that the balance due was therefore $224.25 instead of the greater sum sued for. The prunes were taken from plaintiff's orchard by the defendants, and sometimes the plaintiffs were not present when they were taken, but that on all of such occasions defendant had left empty boxes bearing his brand, showing that it was he that had taken them. The defendants strenuously denied that they had received as much fruit as they were charged with. The fact that an error was discovered in defendants' accounts was probably a factor in determining the case. J. F. Conkey appeared for the plaintiff and C. H. Herrington for the defendants.

Solano.

SUISUN VALLEY ORANGES.—Republican: If any one has a doubt as to the successful growing of oranges in Suisun valley, a visit to the orchard of John Armstrong, near Manka, will dispel the doubt. Mr. Armstrong has about a quarter of an acre of navel orange trees that produce as fine oranges as can be found anywhere in the State. Thursday he brought in a cluster of eight oranges which weigh exactly six and one-quarter pounds, and the same is now on exhibition. Many oranges on the same tree are much larger than any on this twig, but it is unusual to find as fine a cluster with the above number.

Stanislaus.

FINE SPECIMENS OF CITRUS FRUIT.—Colonel James Thompson of Lanark Park is exhibiting some fine specimens of citrus fruit, among others a couple of limbs cut from a lemon tree, upon which the lemons, large and of fine color, were hanging in clusters. Mr. Thompson says that all of his trees are loaded to their fullest capacity with just such fine fruit. The gentleman also brought in some fine oranges, the largest measuring 14¾ inches in circumference, and on a general average all the fruit on the tree from which specimens were picked being 13 inches in circumference. The oranges are fine specimens, the skin smooth for large oranges, the color deep and rich, and the meat very sweet.

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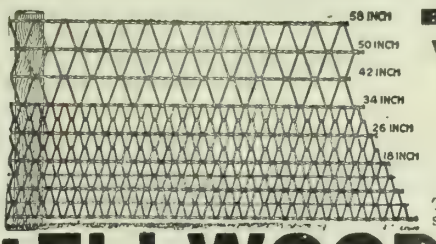
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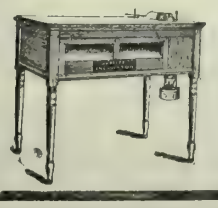
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The Home Circle.

The Married Lover.

Why, having won her, do I woo?
  Because her spirit's vestal grace
Provokes me always to pursue,
  But, spirit-like, eludes embrace:
Because her womanhood is such
  That, as on court days subjects kiss
The queen's hand, yet so near a touch
  Affirms no mean familiarness.
Nay, rather marks more fair the height
  Which can with safety so neglect
To dread, as lower ladies might,
  That grace could meet with disrespect.
Thus she with happy favor feeds
  Allegiance from a love so high
That thence no false conceit proceeds
  Of difference bridged, or state put by;
Because, although in act and word
  As lowly as a wife can be.
Her manners, when they call me lord,
  Remind me 'tis by courtesy;
Not with her least consent of will,
  Which would my proud affection hurt,
But by the noble style that still
  Imputes an unattain'd desert;
Because her gay and lofty brows,
  When all is won which hope can ask,
Reflect a light of hopeless snows
  That bright in virgin ether bask;
Because, though free of the outer court
  I am, this temple keeps its shrine
Sacred to heaven; because, in short,
  She's not and never can be mine;

—Coventry Patmore.

Borrowed Trouble.

In the great State of Rhode Island, on the way to Providence,
I came upon a weeping man a-sitting on a fence.
"Pray tell me, sir," says I to him, "what causes you such sorrow."
Says he to me, "The troubles that I fear will come to-morrow."
Says I to him, "Land sakes alive! The trouble's with your liver!"
Says he to me, "I'm thinking, ma'am, of jumping in the river."
Says I to him, "Come home with me and drink some boneset tea."
Says he to me, "No, thank you, ma'am; I'd ruther stay's I be."

—Lucy Fitch Perkins in St. Nicholas.

Bachelor Freedom.

Gister had always declared that a man was foolish to marry. He gave the usual selfish bachelor reasons—namely, that a man who married sacrificed his comfort, resigned his independence, increased his responsibilities and took long chances on unhappiness into the bargain. His observation had convinced him that nine men out of ten who married were unhappy. "They put the best face on it that they can, of course," he said to Mrs. Nistrin early in their acquaintance. "Some men I know pretend to like it. I have had them come crowing over me, even."

Mrs. Nistrin laughed. Mrs. Nistrin was a widow and a very clever and entertaining woman. Gister used rather to enjoy the evenings he spent at her house.

"What could I gain by marrying?" continued Gister, addressing the widow. "I have my apartments, where I am not disturbed by any of the usual domestic nuisances. A child would not be allowed in the building for any consideration on earth. My housekeeper puts everything in order for me while I am downtown—sees to my linen, does what necessary mending there is to do, and my man attends to the rest. If I want to dine at home I make my selection from the cafe menu and have it sent up on a dumbwaiter in my own service and Sigmund serves it. If I want to dine out I have my choice of no fewer than eight decent places in this city. I have comfort. I have peace."

"What a very fortunate man you are!" said Mrs. Nistrin.

"Don't you think that I would show very doubtful judgment to change this for the joys of matrimony?"

"I think you would be very foolish indeed," said Mrs. Nistrin.

"Not that I am insensible to the charms of your fascinating sex," continued Gister. "I think I show that best by remaining single. If I were married I might be denied the inestimable privilege of calling upon you, for instance—my wife might not like it."

"That's true," murmured Mrs. Nistrin, "she might not."

"Then wouldn't I be an idiot to want to marry?"

"Between you and me," said the widow, "I think you would."

* * * * * *

Last winter Mrs. Nistrin decided that she would close her house and go to California. She gave a very gay little dinner party before she went, which Gister attended. He observed to one of the men there that it was almost a pity Mrs. Nistrin was going away. She would be a distinct loss.

Three weeks later Gister happened to be in California—on business. Of course it was only decency to call upon Mrs. Nistrin while he was there. She was greatly surprised to see him, but not displeased—if Gister could judge. She was dressed most becomingly, Gister noticed, in something pink.

He did not tell her that business had brought him. On consideration, that sounded rather shopworn. He said: "It seemed dull and cold in Chicago—after you left."

"I heard the weather had been rather disagreeable," she said, with a queer look.

"I decided to come on a sudden," he said.

"That's the beauty of bachelor freedom," said the widow. "Now, if you had been married—"

"I should have stayed at home and thought myself lucky," he said. "I don't think we had a full grasp of that subject. I was inclined to alter my views—in fact, I have altered them."

"Well," said Mrs. Nistrin, "there is something to be said on both sides, of course. I think that one great source of domestic unhappiness is the failure on the part of married people to realize that whatever concessions are made, there must be only one real head to the family—only one decisive voice. The man usually thinks that voice should be his. The woman nowadays fails to realize this as perhaps she should."

"You've hit it exactly," said Gister.

* * * * * *

"I'm one of those women," said Mrs. Nistrin. "I'm used to having my way and I intend to have it always. My husband, if ever I married again, could have the management of his business, and that would have to satisfy him."

Gister coughed behind his hand and was silent for a moment. "That would satisfy me," he said presently.

"No?" said Mrs. Nistrin.

"With a certain woman."

"And how about your comforts—your peace?"

"I would have more than comfort. I would have bliss."

"You couldn't discharge your wife, you know, if she displeased you."

"I would never want to," said Gister.

"You would have to dine at home always. If you went out or came in at any unusual hour you would be questioned."

"I would never go out. As for dining at home—oh, what a word that is—home! I am forty-eight, Melissa, and I never had a home. You've got to make one for me. That's what I came here to say."

"But suppose you wanted to relax with a little romance? Suppose your mood demanded variety of companionship and you were limited—"

"Oh!" cried Gister. "You are the universal encyclopædia of philosophy and romance and all knowledge, the epitome of your sex, the—"

"Stop!" commanded the widow, with her hands to her ears. "I believe you were right about men being idiots—who thought of marrying. But—I—well, I prefer you as an idiot."—Chicago News.

Obesity.

The tendency to put on fat may be congenital or acquired; that is to say, it may be due to some inherited nutritional fault, or it may be the direct result of overeating, or the eating of an undue proportion of fat-forming foods. It may manifest itself in childhood or early adult life, and is then in most cases an inherited condition; but usually it first shows itself in trouble-some form in middle life, when an excess of food is not needed for growth and when the vital processes are getting slower, so that this excess cannot be so rapidly eliminated as it was in earlier life, and is thus stored up in the tissues as fat.

Obesity in middle life is not always due to overeating, for it occurs not infrequently in those who are very moderate in their indulgence at table, or are even abstemious. Then the fault is usually one of inheritance, but this does not mean necessarily that the parents or grandparents were corpulent; they may, on the contrary, have been spare, but they were gouty or suffered from diabetes, or gave some other evidence that the processes of nutrition were not properly performed.

Obesity, diabetes and gout are interchangeable conditions in heredity, and are all referable to some nutritional fault; they are also, for the same reason, interchangeable conditions even when not hereditary—in that case resulting from overindulgence or unwise indulgence in the pleasures of the table.

After growth has ceased much less food is needed to suport life and make up for the ordinary waste, yet there is seldom at this time any reduction made in the quantity of food taken.

There are two kinds of obesity, called usually the plethoric and the anemic. The plethoric, which is the common form in men, is due to the taking of too much food of all kinds; the anemic, from which women suffer more often than men, is due rather to the eating, not of too much food, but of improper kinds of food—of sweets, candy, cakes and the like.

It is almost always possible to reduce flesh and to prevent its further accumulation, but it is not always easy and is seldom agreeable. A curb must be put on the appetite, whether for quantity or for quality of food. Habits of indolence must be overcome, and often the struggle must be kept up for the rest of life. A good figure, like liberty, is to be had only at the price of eternal vigilance.

Treatment for Hair and Skin.

If the hair is brittle, if it is inclined to be discolored, if there are gray hairs, or if there is a roughness of the scalp, a little treatment is necessary. Take as much sweet oil as will fill a thimble half full. Castor oil is better, but its odor is disagreeable.

Set the thimble in the mouth of a bottle filled with hot water, to keep the oil warm, and massage the scalp every night. Part the hair, dip the finger tips in the oil and gently spat the scalp.

Do not get a particle of oil upon the hair, but touch the scalp daintily and lightly. Less than half a thimbleful of sweet oil will thoroughly massage the scalp.

Hair that is discolored can be restored by a hot-water shampoo. In the water put a little powdered borax.

If the hair is naturally red, it can be benefited by a shampoo of henna. Take ten cents' worth of henna leaves and steep them, making a tea out of them. Shampoo the hair, then bathe it in the henna tea. Then let it dry. It will be a lovely red, provided you do it properly.

Hair that is a golden blond is sometimes dull in the fall, and, to restore it, pure peroxide of hydrogen is necessary. Do not use any ammonia, just the pure peroxide. But be careful, for it will turn the hair blond. It should be used only by natural blondes whose hair is discolored by the sun, and by lack of care during the summer.

Hair that is too bright and red can be darkened by steeping it in a decoction of tea leaves.

The skin is not so easily restored. The first treatment is an internal one. Eat plenty of fruit, but the diet must not be changed too suddenly.

For a clear skin, a Vienna doctor gives a teaspoonful of phosphate of soda every morning before breakfast in a glass of hot water. At night, the last thing he has his patient eat a dish of stewed fruit, not raw, but cooked always.

The facial bath is a necessity, and for this there is nothing quite the equal of the carbolated bath.

Take a big bowl of warm water and drop a little carbolic acid into it. One thin-skinned woman used ten drops to a quart of water. Another, whose skin is more delicate, put ten drops in a whole gallon. It should be used cautiously at first, until you know the quantities.

It acts as an antiseptic upon the skin. It wakes it up, and makes it tingle. It destroys the microbes in the dust that settles in the pores, and it is, on the whole, one of the best things that could be used for the skin as a restorative.

There are other good things for the skin. There is carbolated vaseline, which restores the lips. And there is benzoinate cold cream. There are lettuce and cucumber creams, all of which can easily be made at home from home formulas, which will cure the skin no matter how badly chapped and sunburned it may be.

A woman's lips should never be neglected for they will become shapeless if they are not cared for. Rub them every night with camphorated ice, made from a Southern recipe.

Take mutton tallow and melt it, let there be just enough to fill an empty egg shell, into this sift a pinch of powdered camphor and a teaspoonful of the oil of sweet almonds. Beat gently as it cools, and when half cool pour into an egg shell. It will keep well in the shell.

The care of the face and how to wash it with cold cream deserves a chapter by itself. You can do the face an injury by smearing on grease or you can do it a great deal of good.

There is a trick in washing the face with cold cream. Done in the right way it is of the greatest benefit to the skin, but done in the wrong way it is of no benefit at all and what is more, it wastes the cream, if nothing worse.

All old bits of linen should be saved. Old linen handkerchiefs, odd soft pieces of pillow casings and even the tag ends of old linen table napkins, soft and without a particle of starch or stiffness left in them, are proper implements for the face. Toweling, on the other hand, is bad. The use of a towel on the face will coarsen the skin, and if the towel be rough, it will bring out the tiny red veins, which are a blemish.

Do not use bath towels or any other coarse substance on the face. Reserve for this purpose the softest bits of old handkerchiefs you can find.

To wash the face with cold cream, begin by dashing a little hot water into the face. Use the hands for this purpose, but no soap. Apply handfuls of water to the countenance, holding it there a minute to heat the face.

Now let the skin dry, and, if necessary, mop it a little with a soft cloth, but do not rub it. Then take the jar of cold cream and take a little out with a ladle. Do not form the habit of dipping your fingers in the cold cream jar.

Put some cold cream in the palm of each hand and rub it on the face, going over your features with the palms of your hands, and then with your finger tips. Work slowly, treating the skin to a sort of massage. Apply the cream until the whole face is shiny and each little crevice and pore is full.

It cannot be done in a minute. One of the faults of the woman who tries to improve her skin is that she endeavors to do in a few minutes the work which should take her several times as long.

The face is now a brilliant color. It glows brightly, and there is not an inch

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that is not massaged with the cream. So far, so good.

A face specialist declares that she cannot cleanse the face in less than half an hour. Certainly it is a good thing to leave the cream on the face fifteen minutes.

Now comes the actual cleansing. Remove the superfluous cream with a soft cloth or bit of rag. Then apply more cream. This time put it on thick. Apply it in a heavy layer and wipe it off again, working as though one were taking off the dirt.

A great deal might be said as to the consistency of the cold cream that is used. The cream should be very thin. In fact, it ought not to be a great deal thicker than cream of milk—it should be just about like the heavy, thick sweet cream which is used upon the table.

Go over the face with this several times until it is clean. Do not use strength, but work slowly and softly with a bit of old cotton or old linen. That is one of the secrets of cleansing the face—namely, not to injure the skin.

If the cold cream still remains thick and sticky and heavy, it is a good thing to warm it a little. Women whose faces are wrinkled can get quicker and better results by using a warm, thin cream. It works into the pores better and will plump out the cheeks sooner and better than if it were a thick, heavy cream.

Warming the cold cream is so important that many a woman keeps a little electric stove handy upon her dressing table. The jar of cream can be set upon it an instant and heated. While heating, stir it with the little ladle, which comes for the purpose. A tiny silver coffee spoon will do nicely.

Cold cream that is too thick, or which grows thick after it has stood awhile, can be thinned by warming it and adding a little almond oil. Heat in a double boiler, add the almond oil, stir well, take it off the stove and keep stirring as it cools. It should be beaten almost to a white froth.

While it is cooling a few drops of benzoin can be added, if one has an oily skin, and if the skin be in extra bad condition it is well to add a few grains of borax powder, which is softening.

Dainty women like a perfumed cream. So it is well to add a few drops of attar of rose. Or, if the attar of rose be too expensive, one can substitute the oil of rose geranium, which is almost as good, or the oil of lavender or a little bergamot. The home-made cream can be made delicious by adding these perfumes.—N. Y. Sun.

Asparagus Freshened in Water.

(From United States Vice and Deputy Consul-General Murphy, Frankfort, Germany.

A warm discussion has been going on for many years in Germany as to whether purchasers suffer from the dealers' practice of submerging asparagus in water to prevent its withering or hardening. The plea of the dealers has been that soaking asparagus in water merely keeps it fresh in appearance without either lessening its alimentary value or increasing its weight.

In order to put an end to this discussion the Gardeners' Union determined to submit the question to the experts of the Experimental Institute at Geisenheim on the Rhine. According to the Frankfurter Zeitung, Doctors Windisch and Schmidt have completed the experiments with surprising results. It has been ascertained that the absorption of water by submerged asparagus is not inconsiderable, the weight being increased about 10% in two days. Moreover it loses some of its nutritious components, especially those containing nitrogen and mineral matter.

The results of experiments with asparagus whose cut surfaces had been coated with paraffin were exceedingly interesting. Contrary to expectations, it was found that asparagus thus treated absorbed considerably more water and lost much less of its alimentary value than that which was placed in water without first being coated with paraffin where it had been cut.

Thus it has at last been authoritatively established that the practice of keeping asparagus fresh by placing it in water not only lessens its value as food, but also defrauds the purchaser by increasing its weight.

Domestic Hints.

RAGAMUFFINS.—Roll out cream of tartar biscuit dough into a half-inch thick sheet. Spread with butter and sprinkle profusely with maple sugar. Over this shake a little cinnamon; then cut into strips about an inch wide and roll each one up tightly. Bake in a moderate oven.

NUT CROQUETTES.—Take two cupfuls of mashed potato, one-half cupful of grated cracker crumbs and the same of chopped parsley. Mix thoroughly together, using the necessary quantity of sweet milk, or, better, cream. Season with pepper and salt, add three tablespoonfuls melted butter and beat in two eggs. Form into croquettes, dip in beaten egg, roll in fine cracker or breadcrumbs and fry in hot lard. Serve very hot with tomato sauce.

ONION STEW.—Peel the onions, slice and let them stand in cold water half an hour. Put them on in fresh, cold water and let boil three minutes, then pour off the water, add more, let it boil the same as before, and repeat this three times. In the fourth water let them cook until tender, strain and put in milk; season with butter, pepper and salt to taste; thicken with a little flour.

A SIMPLE SALAD.—A salad, which is as refreshing as it is simple, is made by turning the contents of a can of Lima beans into a salad bowl bedded with crisp lettuce leaves. Serve with a dressing made as follows: Beat one egg and a tablespoonful of butter together until foamy. Add a teaspoonful of mustard (powdered), four tablespoonfuls of vinegar and pepper and salt to taste. Put on the fire and keep constantly stirring until it thickens, but do not allow it to boil.

Hints to Housekeepers.

From a purely sanitary standpoint there is no washboard equal to the one made of glass—especially if there is sickness in the house.

It seems a pity to throw away a good part of a bunch of parsley, yet in small families it is often hard to use it all before it withers and turns yellow. It is said that the sprays will keep perfectly if put in a fruit jar with layers of salt.

The bluish color on pianos is caused by the action of damp air on the polish. Rub the surface thoroughly with a bit of chamois moistened with a drop or two of sweet oil, and finish by going over it with the bare hand. No polishing material is equal to the hand for fine surfaces.

The following is recommended as an excellent cement for china: Soak two drams of cut isinglass in two ounces of water for twenty-four hours; boil down to one ounce, add one ounce of spirit of wine, and strain through linen. Mix this while hot with a solution of one dram mastic in one ounce of rectified spirit, triturate thoroughly with a half dram of powdered gum ammoniac.

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California

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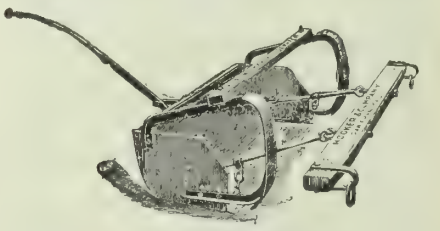
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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, January 4, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 13⅝@1 14⅜	98¼@ 99
Thursday	1 12 @1 14	98¼@ 99
Friday	1 15 @1 15⅜	99½@ 99⅝
Saturday	1 13½@1 14¾	98½@ 98⅝
Monday	*——@——	——@——
Tuesday	1 13⅝@1 15⅛	98 @ 99⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	45¾@45⅞	45 @45⅛
Thursday	45 @45¾	45½@45¾
Friday	45⅝@45⅝	46 @45⅝
Saturday	45½@45⅝	45⅝@45⅞
Monday	*——@——	——@——
Tuesday	45 @44⅞	45¼@45

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 44½@1 44⅝	——@——
Friday	1 44 @1 44½	——@——
Saturday	1 44¾@——	——@——
Monday	*——@——	——@——
Tuesday	1 45 @1 45⅜	——@——
Wednesday	1 46¼@1 46¾	——@——

* Holiday.

Wheat.

There has been another quiet week in the wheat trade. There was practically nothing done Saturday, and Monday being a holiday, the grain exchanges throughout the country stood adjourned. Values have shown little change, but the market has ruled firm. One full cargo of 3,332 tons wheat, valued at $98,637, was cleared for Europe the past week, making five clearances for month of December, aggregating 11,260 tons, value $335,242. For the six months ended Jan. 1 there were 20 wheat clearances from this port, footing up 33,017 tons, value $965,400. This is a little larger than for corresponding time of 1903, but is a light showing as compared with previous years. The wheat crop of France for 1903-04 is estimated by the Minister of Agriculture at 296,637,560 bushels, by the Bulletin des Halles at 302,617,927 bushels, and by the National Millers Association at 313,180,174 bushels. Consul Thackara of Havre, on the question of supplies, says: "The average consumption of wheat in France for all purposes, including sowing, is estimated at 349,000,000 bushels. Taking the estimate of the Minister of Agriculture, there appears to be a deficit of over 52,000,000 bushels, but as the reserve stocks are estimated at 56,750,000 bushels, it is probable that France will not have to import large quantities of foreign wheat to supply the home demand." The United States Department of Agriculture issues the following statement of the 1904 crop in this country:

Winter wheat acreage	26,865,855
Winter wheat crop, bushels	332,985,346
Winter wheat, value	$325,611,373
Spring wheat acreage	17,269,020
Spring wheat crop, bushels	217,464,171
Spring wheat, value	$184,875,501

California Milling	$1 50	@1 60
Cal. No. 1 shipping, alongside	1 40	@1 42½
No. 1 Oregon Club	1 40	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.44@1.46¾.
December, 1905, delivery, $——@——.

Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.46¼@1.46¾; December, 1905, $1.32¼ bid, $1.33 asked.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12/6@ -s	15/@—s
Local market	$1 35@1 37½	$1 40@1 45

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on Dec. 1 and Jan. 1:

Tons.	Dec. 1.	Jan. 1.
Wheat	47,086	*46,280
Barley	35,662	†21,998
Oats	4,036	3,254
Corn	467	431

*Including 24,407 tons at Port Costa, 22,488 tons at Stockton.

†Including 11,320 tons at Port Costa, 7559 tons at Stockton.

Stocks of wheat in near-by warehouses on the 1st inst. show a decrease of 806 tons for the month of December. A year ago there were 43,095 tons of wheat in near-by warehouses.

Flour.

Trade is of light volume, but stocks and offerings of desirable qualities are of quite moderate proportions, and current values on good to choice flour are being well maintained, quotations remaining as last noted. Much of the flour now in stock here is the product of outside mills.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Demand has been fairly light, both for shipment and on local account, and the market has presented a very firm tone, although in quotable values there were no appreciable changes. Two steamers clearing the past week for Japan carried 4000 tons of this cereal, valued at $94,000. Shipments of barley from this port for the past six months aggregate 72,000 tons, being 100,000 tons less than for corresponding time in 1903, and 82,000 tons less than for last six months of 1902. Stocks in the State, however, will not admit of as liberal exports as for the two preceding years. Prices are a little higher than a year ago, and may harden further as the season advances. There is certainly nothing at present to warrant anticipating the development of any weakness during the next four or five months.

Feed, No. 1 to choice	$1 13¾	@1 15
Feed, fair to good	1 11¾	@1 12½
Brewing, No. 1 to choice	1 17½	@1 20
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 05	@1 10

Oats.

Market shows healthy condition, with offerings light and demand more than ordinarily good for this date. A shipment of 1500 tons was cleared Saturday last per steamer M. S. Dollar for Japan. This is one of the heaviest single shipments of oats every made from this port. Total previous shipments for the entire season to date foot up less than 900 tons. Shipments for the last six months of 1903 were only 700 tons.

White oats, fancy feed	$1 45	@1 50
White, good to choice	1 40	@1 45
White, poor to fair	1 32½	@1 37½
Milling	1 40	@1 50
Black oats	1 30	@1 65
Red, fair to choice	1 25	@1 50

Corn.

Market is tolerably well stocked with new crop Large Yellow and White, and for the general run of offerings of above varieties is not showing any special firmness. Small Yellow is in comparatively light supply and is being held at tolerably stiff prices. The Government reports the acreage of the 1904 crop in United States at 92,231,581; yield, 2,467,486,934 bushels; value, $1,087,461,440.

Large White, good to choice	$1 25	@1 35
Large Yellow	1 25	@1 35
Small Yellow	1 60	@1 75
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 25	@1 30

Rye.

Not much coming forward. Market is firm at the quotations.

Good to choice	$1 12½	@1 47½

Buckwheat.

Most of this season's crop is now in the hands of millers and is being steadily held.

Good to choice	$1 75	@2 00

Beans.

Market is quiet and shows much the same general condition as at date of last report. Good to choice beans are being held with confidence, with stocks of the same by no means heavy. There are damaged beans on the market which holders are anxious to unload at prices which would seem to make them a bargain where they could be utilized for any purpose. It is said beans in their natural dried state make good feed for sheep where well scattered over the ground. Sales of these damaged beans are mainly within range of $10 to $20 per ton wholesale. Limas are slightly easier, in consequence of rains south.

Pea, fair to good, 100 lbs	$2 90	@3 10
Small White, good to choice	3 15	@3 30
Large White	2 35	@2 60
Pinks	3 00	@3 50
Bayos, good to choice	2 50	@2 85
Red Kidneys	4 50	@5 00
Reds	4 00	@4 50
Limas, good to choice	4 10	@4 20
Black-eye Beans	2 40	@2 55

Dried Peas.

Same inactive market previously noted. Offerings are light and mostly more or lers damp or otherwise faulty.

Green Peas, California	1 50	@2 00
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 25	@1 75

Hops.

There is no evidence of much doing on local account, but there has been lately considerable outward movement. A steamer sailing the past week for the Orient carried 19,150 lbs. hops for India. Offerings are not heavy, and holders as a rule are not exerting any undue pressure to realize. The New York Producers' Price Current says: "Absolute quiet prevails in the hop market. From the country markets in this State only occasional sales are heard. Brewers are buying nothing whatever, but nevertheless dealers seem to have confidence in the situation and expect that with the turn of the year more activity will result. In Germany reports indicate very quiet markets, with declining prices. English markets also report very quiet trading. Prices here remain unchanged." The Santa Rosa Press-Democrat, under date of Jan. 1, says 30 cents per lb. was freely offered for hops on the streets of Santa Rosa on Saturday, and as far as could be ascertained no sales were reported at that figure. The Press-Democrat was informed by a well-known local buyer, and a man who would have paid 30 cents for hops on Saturday if he could have bought, that the figure named was offered to a number of growers. It is estimated that there are some sixteen hundred bales of hops in Sonoma county at the present time.

California, good to choice, 1904 crop	26	@30

Wool.

The local market is in the same inactive condition as previously noted. The wool of 1904 clips is now nearly all in the hands of manufacturers and dealers, so there will be little opportunity for any wholesale transfers from first hands until next clip comes upon the market. Much of the 1905 wool has been already contracted for and at better prices than have prevailed the past year. Values at present are not clearly defined. Quotations are based on latest business in last year's wools.

SPRING.

Northern, free	23	@—
Northern, defective	17	@21
Oregon, good to choice	20	@23
Nevada	16	@21

FALL.

Northern	15	@19
San Joaquin and Southern, free	13	@16
San Joaquin and Southern, defective	9	@11
Southern lambs, as to quality	9	@14

Hay and Straw.

A heavy shipment of hay was made from here the past week, the steamer M. S. Dollar, clearing Saturday for Japan, carrying 27,000 bales. While this afforded a little relief to the congested condition of the market, stocks and offerings continue heavy and ahead of immediate requirements. In the matter of quotable values, the market is without improvement.

Wheat, good to choice	$13 00	@ 14 00
Wheat and Oat	10 00	@ 13 00
Tame Oat, fair to choice	8 00	@ 13 00
Wild Oat	8 00	@ 10 00
Barley	9 00	@ 11 00
Alfalfa	9 00	@ 11 50
Clover	7 00	@ 9 00
Stock hay	6 00	@ 7 00
Compressed	11 00	@ 14 00
Straw, ₱ bale	40	@ 55

Millstuffs.

Bran was in fairly liberal receipt, but was mostly placed prior arrival and there was no appreciable weakening in values. Middlings were in only moderate stock and were in the main steadily held. Market for Rolled Barley was firm at previously quoted values. Milled Corn products are inclining in favor of buyers.

Bran, ₱ ton	$19 00	@ 21 00
Middlings	25 00	@ 28 00
Shorts, Oregon	19 00	@ 22 00
Barley, Rolled	24 00	@ 24 50
Cornmeal	31 00	@ 31 50
Cracked Corn	31 50	@ 32 00
Oilcake Meal	31 50	@ 33 00

Seeds.

Alfalfa is in fair supply, and market for same is easy in tone; spot stocks include both California and Utah product, but the imported article is most in evidence. For Mustard Seed there is no very active inquiry and not much offering.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		12 @13½
Canary		6½@ 6¾
Rape		1¾@ 2¼
Hemp		3½@—
Timothy		5 @ 5½

Honey.

Market is quiet and not noteworthy for strength. Although stocks here and throughout the interior are light, there is little inquiry, either for shipment or on local account. There is strong probability, however, that the Spring trade will absorb the light stocks remaining.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@ 5½
Extracted, Amber	3½	@ 4¼
Extracted, Dark Amber	3	@ 3½
White Comb, 1-frames	11½	@12½
Amber Comb	9	@11

Beeswax.

Moderate quantities are going outward. Offerings are of quite limited volume.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Market for Beef has been without material change since last report; stocks were ample for the demand, which was only moderate. Veal was in fairly liberal supply and tendency was to weakness, although there was no pronounced change in the quotable range of prices. Mutton sold at generally unchanged figures, but only for choice did the market show any firmness. Lamb was not in heavy receipt, but offerings were ample, values remaining steady. Hogs were not quotably lower, but not many were required to satisfy the demand at full figures.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6¼@ 6¾
Beef, 2nd quality	5½@ 6
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain, 140 to 250 lbs	5½@ 5¼
Hogs, large, hard, over 250 pounds	4½@ 4¾
Hogs, small, fat	4¾@ 5
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	8 @ 9½
Lamb, ₱ lb	8½@ 9½

Hides, Skins and Tallow.

Sound Hides are in good request at current rates. There is a fair movement in Pelts and Tallow at quotably unchanged values.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11	— @10
Medium Steers, 48 to 56 lbs	— @10	— @ 9
Light Steers, under 48 lbs	9 @10	8½@—
Heavy Cow Hides, over 50 lbs	— @10	— @ 9
Light Cow Hides, under 50 lbs	9½@10	8½@ 9
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	— @10½	— @ 9½
Wet Salted Veal	11 @11½	10 @10½
Wet Salted Calf	11½@13½	10½@11½
Dry Hides	17½@18	16½@17
Dry Kip and Veal, 11 to 16 lbs	— @15	— @13
Dry Calf, under 4 lbs	— @20	— @18
Pelts, long wool, ₱ skin	1 25	@1 75
Pelts, medium, ₱ skin	90	@1 10
Pelts, short wool, ₱ skin	50	@ 75
Pelts, shearling, ₱ skin	15	@ 40
Horse Hides, salted, large prime, each	3 00	@—
Horse Hides, salted, medium	2 50	@—
Horse Hides, salted, small	1 50	@—
Horse Hides, dry, large	1 75	@—
Horse Hides, dry, medium	1 50	@—
Horse Hides, dry, small	1 00	@—
Tallow, good quality	4	@4½
Tallow, poorer grades	2½	@3½

Bags and Bagging.

Market is dull and without interesting feature. Asking prices remain practically the same as last quoted.

Bean Bags	4¾	@5
Fruit Sacks, cotton	6½	@7½
Fruit Sacks, jute, as to quality	5¾	@7
Grain Bags, Calcutta, 22x36, spot	5¾	@—
Grain Bags, Calcutta, buyer June-July	6	@6½
Wool Sacks, 4-lb	32	@—
Wool Sacks, 3¼ lb	30	@—

Poultry.

Considering that it was a holiday week, and demand was good for poultry, there were no heavy offerings of any kind, either domestic or Eastern. More than arrived could have been readily placed, provided, of course, the stock was in prime to choice condition. Receipts of Turkeys were unusually small for New Year's week. Inquiry for Chicken, Ducks and Geese was mainly for large and fat young. Pigeons were in fair supply.

Turkeys, Dressed, choice, ₱ lb	24	@ 27
Turkeys, live gobblers, ₱ lb	20	@ 22
Turkeys, live hens ₱ lb	20	@ 22
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 00
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	5 50	@ 6 00
Fryers	4 50	@ 5 00
Broilers, large	3 00	@ 4 00
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ₱ dozen	5 00	@ 6 00
Ducks, large young, ₱ dozen	6 00	@ 7 00
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	2 00	@ 2 25
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	2 00	@ 2 50

Butter.

Market has been inclining in favor of the buying interest, especially for other than most favorite brands going to special trade. Buyers looking simply for quality had no trouble in securing concessions. While there is some inquiry from the East, it is mainly at lower figures than are now current there.

Creamery, extras, ₱ lb	23½	@24
Creamery, firsts	22	@23
Creamery, seconds	21	@—
Dairy, select	22	@—
Dairy, firsts	21	@—
Dairy, seconds	19	@20
Mixed Store	12	@13

Cheese.

Demand is not very active, but stocks are of only moderate volume, and values are ruling steady. A few favorite marks are limited to slightly higher figures than are warranted as regular quotations.

California, fancy flat, new	12	@12¼
California, good to choice	10½	@11½
California, fair to good	10	@10½
California, "Young Americas"	10	@12½
Eastern	12	@15

Eggs.

Tendency of the market has been downward, not so much on account of the quantity now offering as a lack of confidence in the future. Dealers generally look for a drop in egg values immediately after New Years, regardless of whether supplies are heavy or light. Store-gathered eggs are arriving more freely and are showing good average quality.

California, select, large, white and fresh	37½	@—
California, select, irregular color & size	32	@35
California, good to choice store	27	@32
Eastern firsts	23	@25
Eastern seconds	20	@22

Vegetables.

Fresh vegetables were in very fair receipt for this date, mostly from the

Southern section, and prices averaged lower than previous week. Onions were in rather heavy supply, with demand slow and market lacked firmness.

Beans, Lima, ℔ lb	—	@	—
Beans, String, ℔ lb	4	@	7
Beans, Wax, ℔ lb	4	@	7
Cabbage, choice garden, ℔ 100 lbs	50	@	60
Egg Plant, Los Angeles, ℔ lb	4	@	7
Garlic, ℔ lb	7	@	8
Mushrooms, ℔ lb	8	@	15
Onions, Yellow Danver, ℔ ctl	2 00	@	2 50
Peas, Green, Los Angeles, ℔ lb	4	@	6
Peppers, Green, ℔ lb	4	@	6
Rhubarb, ℔ box	50	@	1 00
Summer Squash, Los Ang., small bx	60	@	75
Tomatoes, box	60	@	1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Demand was fair for choice to select Burbanks, prices for which were maintained at about same range as last quoted. Common qualities were offered quite freely, especially from the River districts, and were not much sought after. Sweets were in more than ample supply for current requirements.

Early Rose, ℔ cental	1 00	@	1 20
Salinas Burbanks, ℔ cental	1 00	@	1 50
River Burbanks, ℔ cental	65	@	90
River Reds, ℔ cental	65	@	75
Oregon Burbanks, ℔ cental	1 00	@	1 30
Sweet Potatoes, ℔ cental	50	@	75

Fresh Fruits.

Apples continued in liberal supply, but were largely of the lower grades, and for this sort the market was without any special firmness, quotable values remaining practically the same as at date of last report. Fancy 4-tier stock is not in heavy receipt, nor are there many Apples of this sort now in stock here. Fancy Newtown Pippins are quotable up to $1.50 per box, and some of very superior quality are going in a limited way at a moderate advance on above figure. Persimmons were in light stock and not very active request. Strawberries made a rather poor showing, both as to quantity and quality.

Apples, fancy, ℔ 50-box	1 35	@	1 50
Apples, good to choice, 50-lb. bx	75	@	1 25
Apples, fair to good, ℔ box	50	@	1 00
Apples, Lady, ℔ box	1 00	@	1 75
Persimmons, ℔ regular box	50	@	75
Strawberries, large, ℔ chest	3 00	@	6 00

Dried Fruits.

In the way of business between producers and dealers there is very little doing in the dried fruit line and not much offering from first hands. Values are without quotable change, and for most kinds the market shows firmness. For Apricots and Peaches the market is especially strong. Prunes of the medium sizes are expected to move off to a little better advantage than lately, owing to scarcity of other sizes. Apple market inclines against sellers, in consequence of weakness East. The steamer Alaskan, sailing Saturday for New York, carried 336 packages and 524 cases dried fruit. The steamer San Jose, sailing Saturday, took 16,000 pounds of assorted dried fruits, mostly for New York. The steamer Umatilla, clearing Saturday for the North, carried 32,925 pounds dried fruit, mainly Prunes for Winnipeg.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4 @ 4½
Apples, extra choice to fancy, 50-lb boxes	5½@ 6
Apricots, Moorpark	9 @11½
Apricots, Royal, good to choice, ℔ lb	7½@ 8½
Apricots, Royal, fancy	9 @10
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	7¼@ 7¾
Peaches, unpeeled, fancy to extra fancy	8 @ 9
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	4 @ 7½
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4½c; 50-60s, 2½@2¾c; 60-70s, 2@2½c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Movement is only moderate, as it is to be expected at this date. Stocks are being held with confidence, as there is strong probability that remaining supplies will be absorbed in consuming channels before another season's yield comes upon the market. Values are without quotable change.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	——
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	——	@1	30
Dehesas, 20-lb box	——	@1	85
Imperials, 20-lb box	2 25	@2	35
2-Crown Standard loose Muscatel	3½@3½c		
3-Crown Standard	3¾@4 c		
4-Crown Standard	4¾@ —c		
Seedless Thompsons	—@4¼c		
Seedless Sultanas	—@3 c		
Fancy, 16-oz. Seeded	6 c		
Choice, 16-oz. Seeded	5 c		
Fancy, 12-oz. Seeded	4¾c		
Choice, 12-oz. Seeded	4 c		
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c		
Bleached Thompsons, Woodland Dist., 50s	5½@8 c		

Citrus Fruits.

Market was well stocked with choice to fancy Navels and demand not very active, frosty weather operating against the sale of the fruit; transfers were mainly within range of $1.50@2 per box. Standard Navels were in light stock and were in fair request, going mainly to street hawkers at $1@1.25. Lemon market was quiet, but desirable qualities were not in heavy stock and were steadily held. Limes were in reduced supply and market was slightly firmer.

Oranges, Navels, ℔ box	1 00	@2	00
Oranges, Seedlings, ℔ box	75	@1	00
Oranges, Cal. Tangerines, half box	75	@1	00
Oranges, Japanese Mandarins, ℔ box	75	@1	00
Lemons, California, select, ℔ box	2 50	@2	75
Lemons, California, good to choice	1 75	@2	25
Lemons, California, fair to good	1 25	@1	75
Grape Fruit, ℔ box	1 50	@2	50
Limes, Mexican, ℔ box	4 00	@4	50

Nuts.

Not many Almonds offering, neither is there any special inquiry at present; remaining supplies of good to choice may be promptly absorbed a little later on. The last crop of Jordan Almonds is given at 60,000 boxes, a fair average yield. No. 1 to choice soft shell Wallnuts are nearly out of stock.

Chestnuts, Italian, ℔ lb	8	@10
Nonpareil Almonds	14	@17
Ne Plus Ultra Almonds	12	@14
Languedoc Almonds	9	@11
Peanuts, fair to prime	6	@ 6½
Cal. Walnuts, No. 1 soft shell	13	@14
Cal. Walnuts, No. 2 soft shell	11	@12
Cal. Walnuts, No. 1 hard shell	11	@12
Cal. Walnuts, No. 2 hard shell	9	@10

Wine.

While there is not much doing in a wholesale way, the market for desirable dry wines is firm, fair to choice being quotable at 14@17c per gallon for last vintage, both city and country delivery, just as sellers and buyers may agree upon. For a lot of good Sonoma 15c was bid and at last accounts the bid had not been accepted. For a very superior lot in Napa 20c has been offered, but it is extremely doubtful if there is any other 1904 wine in the State of like quality. The steamer Alaskan, clearing Saturday, took 7701 barrels and 5 cases for New York. The steamer San Jose, sailing Saturday last, carried 65,582 gallons and 32 cases wine, mostly for New York. Receipts last week were 423,550 gallons and for previous week were 527,400 gallons. Receipts for December were 1,947,740 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	72,524	2,612,294	3,068,701
Wheat, ctls	147,253	1,882,977	1,245,873
Barley, ctls	36,562	2,237,164	4,334,134
Oats, ctls	15,199	616,876	658,201
Corn, ctls	5,925	116,879	81,280
Rye, ctls	1,983	35,500	33,713
Beans, sks	4,848	419,721	523,626
Potatoes, sks	21,628	680,807	706,625
Onions, sks	3,471	82,354	98,112
Hay, tons	2,155	104,862	104,438
Wool, bales	188	39,229	33,402
Hops, bales	1,177	30,829	26,283

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	65,480	1,929,048	2,074,196
Wheat, ctls	66,647	660,352	549,920
Barley, ctls	66,195	1,374,640	3,440,625
Oats, ctls	930	17,426	14,135
Corn, ctls	1,072	59,217	10,200
Beans, sks	234	37,655	21,121
Hay, bales	10,386	91,062	93,303
Wool, lbs	21,158	830,690	1,651,525
Hops, lbs	45,489	271,570	445,474
Honey, cases	5	1,443	3,704
Potatoes, pkgs	1,009	53,456	53,670

GOOD RYE! SMOKE HOUSE.

The smoke house always was a source of worriment, vexation and expense, anyhow. When it catches fire let it go up in smoke. There's a better way to smoke meats by using Krauser's liquid extract of smoke. It is made from hickory wood and applied to meat with a brush or sponge. It affords meat a sweet flavor and gives protection against insects and mould. It is cheaper and cleaner than the old way. Information concerning its use, cost, etc., can be had by writing to the makers, E. Krauser & Bro., Milton, Pa.

Bristol, N. H., June 21, 1885.

Dr. S. A. Tuttle, Dear Sir.—Having used your Elixir in the different diseases of horses, I consider it the best horse medicine in the market. I have never failed of obtaining good results in every case where I have used it. Every man owning a horse should have a bottle of it in his stable.

Yours very truly, G. G. BROWN.

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25 ACRES IN ALMONDS.
8 ACRES IN APRICOTS.
20 ACRES IN WINE AND TABLE GRAPES.
15 ACRES IN PEACHES.
5 ACRES IN BARTLETT PEARS.
5 ACRES IN PLUMS AND APPLES.

The TREES and VINES are in SPLENDID CONDITION and are REGULAR BEARERS.

This Orchard is also famous for its **immunity from frosts!**

A NICE DWELLING, AMPLE BARNS, SHEDS, FRUIT HOUSES, TRAYS, BOXES, TRUCKS THREE SULPHUR HOUSES, HORSES, PLOWS, HARNESS, and all accessories of a well established and prosperous orchard.

THE PROPERTY IS ALL UNDER THOROUGH IRRIGATION, having its own Pumping Plant.

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New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR WEEK ENDING DECEMBER 20, 1904.

777,769.—BOTTLE CASE—R. Baermann, Anaheim, Cal.
777,770.—DRAFTING INSTRUMENT—P. Barnes, Seattle, Wash.
778,165.—BOILER FIREBOX—W. N. Best, Los Angeles, Cal.
777,718.—DEMIJOHN—W. E Brown, Los Angeles, Cal.
778,124.—VEHICLE BRAKE—W. M. Flewelling, Santa Rosa, Cal.
777,851.—ELECTRIC BATTERY—W. H. Gregory, Vallejo, Cal.
778,190.—CAR STEP—J. A. Halbrook, Bridgeport, Wash.
777,728.—FURNACE—J. H. Haskins, San Diego, Cal.
777,789.—FURNACE—E. W. Jackson, Sausalito, Cal.
777,903.—HOIST—J. J. Jordan, Tonopah, Nev.
778,065.—CANISTER—C. A. Norvell, Sacramento, Cal.
778,140.—STEM HOLDING SHEARS—C. Paff, S. F.
778,066.—SEWING AWL—A. M. Parker, Los Angeles, Cal.
777,803.—GOLD SEPARATOR—T. Pollock, Santa Barbara, Cal.
777,813.—CARPET FASTENER—C. R. Shaffer, Eureka, Cal.
777,815.—CAN—G. H. Stewart, Los Angeles, Cal.
777,992.—TOY—M. L. Wicks, Jr., Los Angeles, Cal.

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To treat that kidney trouble seriously.

If you have kidney trouble and have not shaken it off, it does not matter what you call it, you are a candidate for a cure for Bright's Disease.

As showing how prevalent chronic kidney trouble (technically known to physicians as Bright's Disease) is, Dr. Loomis of the famous Bellevue Hospital says that he believes from the autopsies that nine-tenths of men and woman over forty have Bright's Disease in some form.

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"When we are asked for something good for kidney trouble there's just one question that gives us a line on its seriousness, viz: HOW LONG HAVE YOU HAD IT? if only a few days or a few weeks we have a number of things. But if for months nothing but Fulton's Compound for Bright's Disease will effect the cure."

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You know how long you have had your "kidney trouble" as you call it. If only for a few days or weeks, although delay is dangerous, possibly you can still play with it a little longer by calling it "kidney trouble" and taking simple "kidney trouble" remedies. But if you have had it for several months nothing but Fulton's Renal Compound for Bright's Disease stands between it and death. You owe it to your family to treat that trouble seriously.

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PATENTS

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Our Claim
We will place a Sharples Tubular beside any other separator and guarantee the Tubular to cut in half any record for clean skimming the other machine can make.

The Challenge
Three competitors, each besten hundreds of times singly, band together and enter a contest against the Sharples Tubular. Providing the "combine-of-three" are allowed to furnish the milk. Providing the "combine of three" dictate temperature of milk. Providing the "combine-of-three" dictate quantity of milk. Providing the "combine of three" run three machines, and it any one leaves less than double the fat of the Sharples Tubular they win. The "combine-of-three" select cold, hard-skimming cows' milk, 623 lbs. 70 to 200 lbs. at a run.



The Result

Sharples Tubular		.05
"The Combine of Three"	Alpha De Laval	.175
	United States	.125
	Empire	.45

The report was signed by Robert Crieamore, Creamery Mgr.; A. W. Trow, Bros., Minn. Dairymen's Ass'n.; and E. J. Henry, Babcock Tester Expert, the judges mutually agreed upon. Write for complete report and catalog P-151.

THE SHARPLES CO. CHICAGO, ILLINOIS
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FORESTRY.

Grazing in Forest Reserves.

The American Forest Congress at its meeting this month will devote one day's session to a consideration of the relation of the public forest lands to grazing. Only those who thoroughly understand conditions in the West can appreciate how important is the question of grazing in connection with the welfare of the forests. Grazing is the principal industry of nearly half of the United States. The arid region of the country includes about two-fifths of its entire area, from about the middle of the continent westerly nearly to the Pacific ocean, and the greater part of this region is natural grazing land, mainly open, but much of it, particularly in the more mountainous parts, forested or partly forested. The forage varies from the scanty vegetation of the deserts to the thick turf of the mountain parks and the varied growth of herbage and young trees found in the interior of the forest. During the excessive heat of summer it is customary to drive the cattle and sheep up into the forests, where the air is cooler and the pasture better. This means that the young growth is trampled and browsed and the spongy forest soil packed or cut by hoofs, so that floods and serious soil erosion often follow, while the prospects of forest reproduction are greatly endangered. Hence it is often necessary to exclude both sheep and cattle, though the regulations are generally more rigid against sheep, which do the worst damage.

That the land best suited to grazing should be given over to it is self-evident. But neither the public domain nor the forests should be overgrazed. Forests are essential to irrigation plans for reclaiming arid lands. The fact that sheep successfully graze upon areas partly or wholly inaccessible to cattle has led sheep men into high mountains and about the headwaters of streams, where speedy and great damage can be done the protective influence of the forests. In addition, sheep are generally herded or concentrated on small areas. Thus their grazing has an intensive character peculiarly destructive. For these reasons, and because of special local conditions, sheep are entirely excluded from some forest reserves, while in others their grazing is more stringently regulated than that of cattle.

Hitherto there has been continual conflict between the sheep and cattle men for grazing locations, and the limitation of the claims of each in the reserves has been one of the most embarrassing and difficult questions of forest control. Happily, through a recent conference at Denver, there has been the fullest and most amicable interchange of views in the history of the business. It is expected there will be less friction between them in the future than in the past.

That the Bureau of Forestry keenly appreciates the importance of the grazing question is shown by the instructions it gives its field force examining lands with a view to forming new reserves or revising the boundaries of existing reserves. Its agents must give definite and full reports on all of the following queries: Demand upon the range; to what extent the prosperity of the local residents depends upon live stock; how many stock are now using the reserve, and how distributed; where owned; whether stock men own ranches or reside in the reserve; their home residence; to what extent, as a summer range, the proposed reserve limits outside range; whether it includes lambing grounds; conflicting interests, as between sheep and cattle, local and outside stock, etc.; merits of the controversy; description of the character of the grazing lands; the extent of open parks and pasture in timber; to what extent has grazing injured the range or forest; the manner of handling stock; the size of herds or bands; areas, if any, from which stock should be excluded; division of pasture lands; recommendations for a plan of control, giving the number of stock and length of grazing season to be allowed, and any special regulations necessary; and the practicability of a division of range into individual ranges. It is only after exhaustive examination and full report that action is taken limiting grazing rights.

The forest reserve policy of the National Government involves many important questions which are yet to be settled. The approaching American Forest Congress, to be held in Washington, D. C., will give the best opportunity that has ever been offered for their broad discussion. This meeting has aroused wide interest among cattle and sheep men and their associations. A large representation from the grazing industry is expected at the congress, and far-reaching good is likely to result from its deliberations.

SHEEP AND WOOL.

Angora Goats in the Foothills.

S. N. Wiley, the owner of a 2000-acre range in Calaveras county, 9 miles east of San Andreas, on which he has a herd of sixty Angora goats, was in Stockton to sell his fall clip of wool, and gave the Independent an account of his operations. He brought with him some very handsome skins in pure white and light blue which are highly prized for ornamental uses. The pure goat produces a white wool, but a cross makes the tinted wool that is considered handsomer than the pure article, because it can be used for fancy goods.

Mr. Wiley says he does not feed his goats, but allows them to pick their living on the foothill ranch. He provides shelter places for them so they can retreat from severe storms, but between showers they go out to feed and are always in good condition. In fact, they are considered choice meat and find ready sale in the markets. A young goat one year old will bring the owner $4 when killed for meat, skin and fat, the hide readily selling for $1 to $1.50. There is no cost in raising Angora goats, the Calaveras man says, and the business is more profitable than raising cattle. They thrive on poor land that would not support cattle and care for themselves when properly reared.

Trained dogs guard the Wiley herd and the owner never has a loss from coyotes, he says. The dogs are reared with the goats and become so attached to them that they will guard them from attacks of wild animals and herd them in bunches when they scent danger. Coyotes are fond of young lambs, but the beasts never get the young goats, because the dogs protect them by attacking all comers, and always single out the leaders of coyote bands and attacking in that way scatter the pests. Mr. Wiley says he places puppies in the care of goats and the puppies get their milk from goats and learn to be members of the herd and are raised to live with the goats. The dogs therefore become faithful guardians of the herd and will fight any animal that approaches. Two dogs are kept with the Wiley herd of goats and they never forsake the goats except to call for food. The dogs maintain positions on the outer circle of the herd and keep a sharp lookout for coyotes, and they have become so useful that the owner of the herd never looks after the goats until he wants meat or wool.

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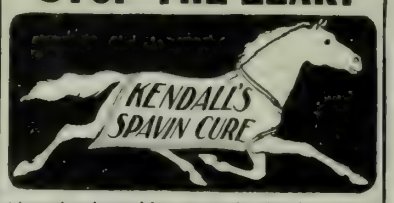
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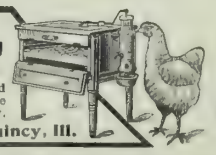
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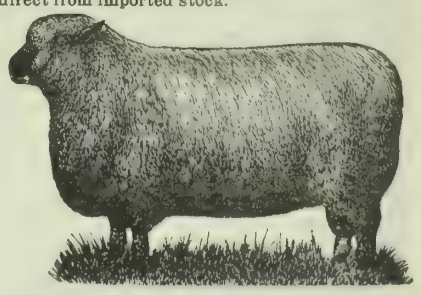
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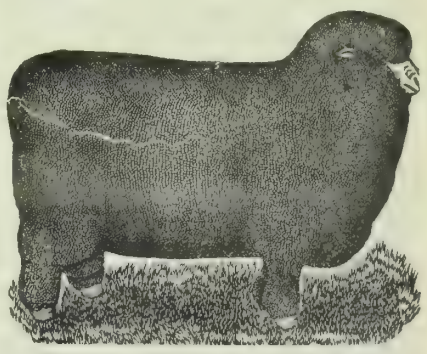
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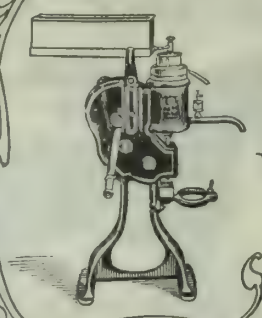
The Benefits of Organization.

From a paper by MR. F. H. BABB at the Fruit Growers' Convention.

The prune grower will no longer find that the speculative packer has sold his crop short while still immature below the cost of production, and compels him to fill at still lower rates, that the middleman's profits may be kept up, while the grower is reduced to poverty and despair. Then cut-throat sellers will fill their shorts at their own expense. He can know that his goods are honestly and properly packed, so that markets are not ruined by attempting to make a fifty-prune grade as a forty, though it spoil before the box is opened. The commercial curse of the age is the excessive watering of stock. A large organization can secure better rates and service from transportation companies or know the reason why. The benefits of such organization are moral and educational as well as financial merely. The man on the farm will learn to come out of his shell and act with others for the benefit of his class. Too often he distrusts his neighbor, considers him in the light of a rival or competitor rather than one who should co-operate with him for the same ends. If farmers were organized they would no longer wait for sporting clubs in the cities to tell them, through the legislators, which of the live stock raised on their farms, and fed and fattened on their crops, shall be killed and carried off by city visitors, and when it shall be done. They will no longer consent to bear the greater part of the burden of taxation, while millionaire owners of personal property are practically exempt. The French revolution was brought on by the exemption of the nobility from taxation. Then the whole trend of public education would not be away from country life, and a staff of educators, some of them of national reputation, would not be compelled to teach agricultural students in dilapidated sheds at the State University, while embryo doctors and lawyers are palatially housed.

The National Grange compelled the rural delivery of mails, and united action will continue to add the facilities of the city to the enjoyments of the country. The labor unions are not a tithe as strong numerically as the farmers, and yet see how they till the public eye and ear. When they make a demand the politicians stand and deliver. There are States where most of the farmers, and many of the State officers as well, are members of the Grange. Their peculiar interests do not often suffer. In the Middle West farmers' organizations have broken up oppressive elevator trusts and replaced grasping telephone monopolies. It might be thought that California, especially the orchard sections, formed an ideal field for organization. The orchardists are a most enterprising class, the pick of the land beyond the Rockies. They have come from all other occupations, have been lawyers, doctors, business men, with broad and varied experiences and familiar with the benefits of organization in other walks of life. But they have been too prosperous. It is said that "Jeshurun waxed fat and kicked." And the satisfactory returns from orchard property in past years have tended to develop the critical rather than the assimilative faculties. History teaches that combinations have generally been made reluctantly at the spur of necessity. It is not enough to have an intellectual appreciation of their benefits. The will must be inclined toward mutual trusts. Representatives of co-operative organizations have met to form a central agency, and the eloquent and unanimous commendation of the plan would seem to make its success certain. Not a dissenting voice would be heard until the time came for actually signing a contract. "And, then, with one accord, they all began to make excuse."

Prices this year indicate that the time for organization is at hand. A brutal old Englishman called kicking a man down stairs, giving him a hint to leave. Prunes at 1½c are that kind of a hint to organize. The failures of the past are no reason for abandoning effect, for most permanent success is built upon failure, and most organizations have been born in war, have had their storm and stress periods, have made stupendous mistakes and done penance for them in sackcloth and ashes.



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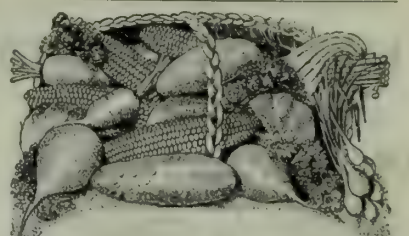
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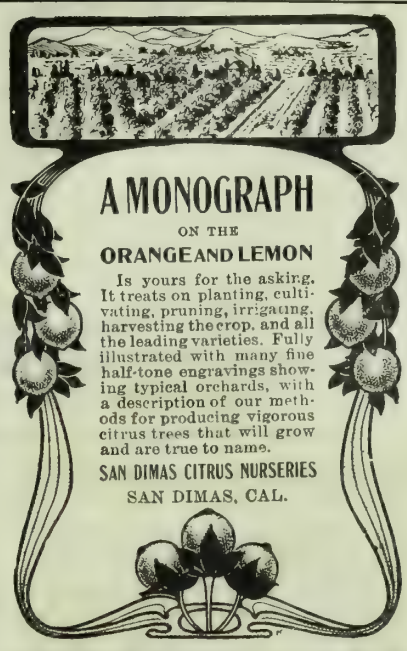
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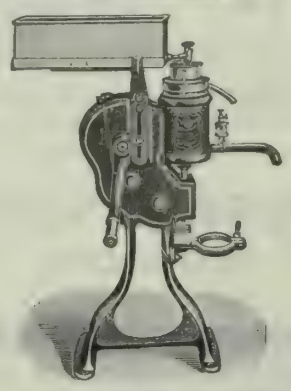
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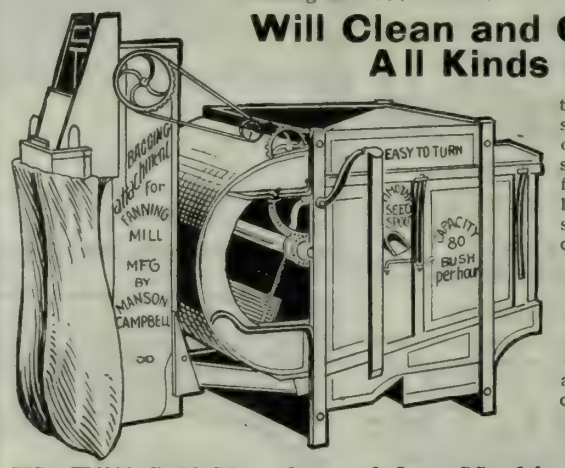
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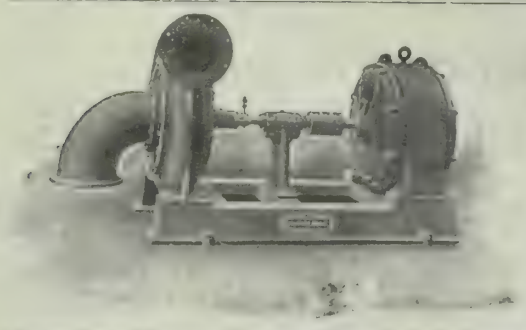


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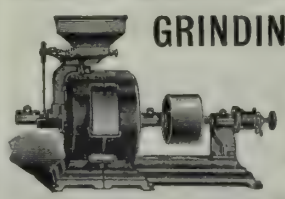
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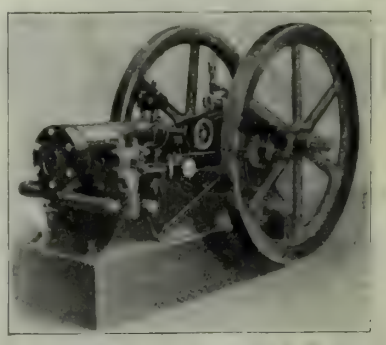
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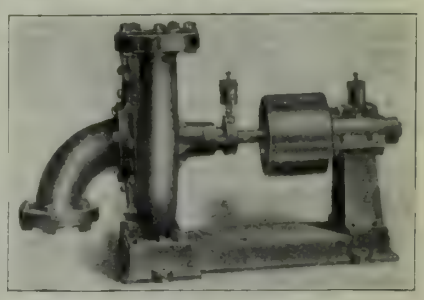
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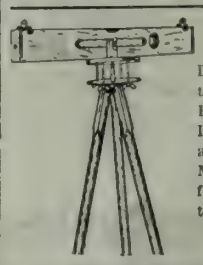
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 2. SAN FRANCISCO, SATURDAY, JANUARY 14, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Three Striking Trees.

As it is in the midst of the California planting season, suggestions about trees are timely and we can not think of any suggestion so pointed as is conveyed by the tree pictures on this page. More attention is being paid to planting ornamental and forest trees than ever before in the history of the State. Not only are rational propositions for forest preservation becoming very popular, but energetic efforts for the extension of the shaded area are being made. This is being done on the largest scale at the south in the scattering of tree seeds on the denuded hill slopes of the districts south of the Tehachapi to the Mexican line. This work is pursued by the Government foresters, in co-operation with enthusiastic citizens, and the results must be great as the years go on. In the central and northern parts of the State, less is done in planting, except by owners on their own lands, but the reservation of great areas is allowing the natural process of seeding to accomplish more than formerly. It is also true that some large forest owners are taking up a rational forestry system by grading their trees, cutting ripe specimens and protecting others for future harvests. There is a promise that forest sentiment may propagate itself to such an extent that the wisdom of such a course may be approved in our regular commercial lumbering. Many people are ready to be convinced of the practicability of it and to regulate their operations in accordance.

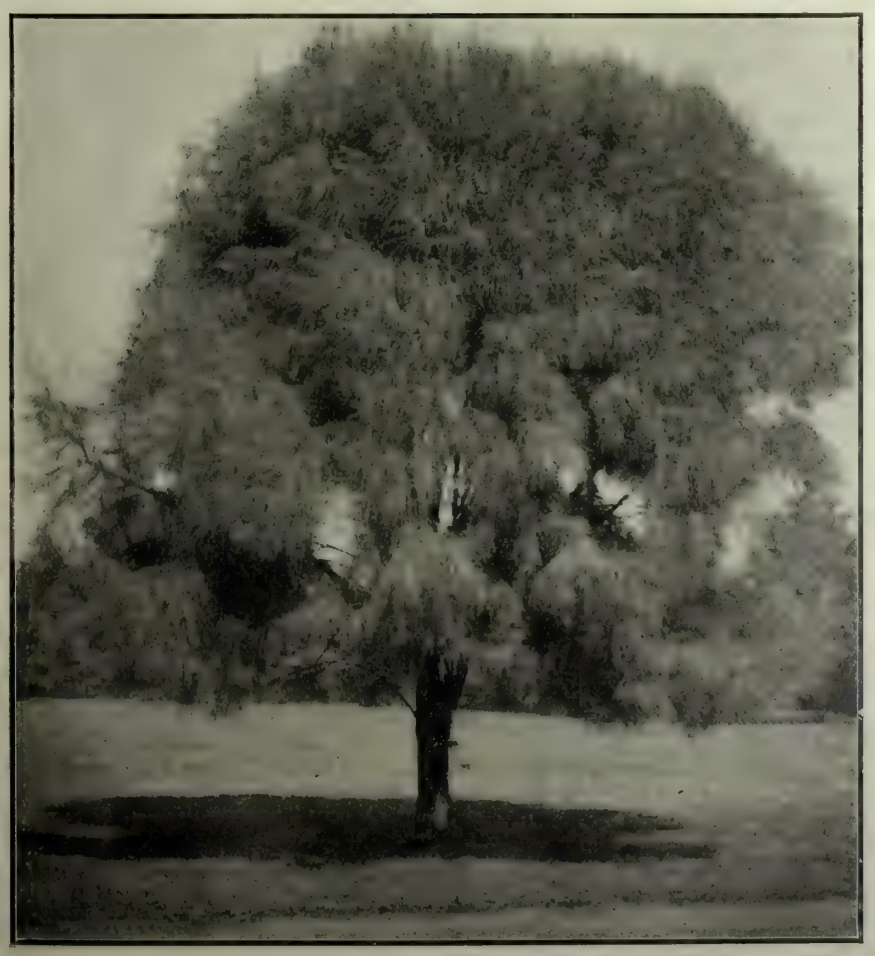
But, though forestry is to be a great science and to stand as a close ally of forestry industry in California, this is only a single branch of the popular interest. It is also true that small scale planting on farm lands, highways, parks, house-yards and school grounds is more widely done than ever before and the trade in popular kinds of tree seeds and seedlings is rapidly growing. The many new comers are aiding strongly in this line, for nearly all of them wish to adorn their new homes and highways, to turn waste lands into woods, both for beauty and profit, and gratify their delights in growing beautiful trees. This disposition is promoted by our seedsmen and nurserymen and we find some of them paying more attention than ever to securing really fine tree portraits for the adornment of their trade publications. We are glad of this and desire to promote it. A nurseryman who secures a fine original plant portrait both benefits his craft and serves an important public purpose. We illustrate what we have in mind by reference to the three tree portraits on this page. They are reproduced from the 1905 Seed Annual of the Cox Seed Company of this city, and are photographs of excellent specimens in their lines. First is a young weeping willow of the common Babylonica species. The tree is rather common, and yet not used half as freely as it might well be.



A Young Weeping Willow—Salix Babylonica.

A more unusual tree is one of the she-oaks of Australia, which far more people know by name than by sight, for much has been printed about the casuarinas as trees without leaves, which, of course, challenged attention. The accompanying engraving shows what a peculiar effect is produced by substituting long narrow twig-like extensions indefinitely instead of leaves. It is interesting, too, that these peculiar-looking trees make a very hard and handsome wood, desirable for many purposes, and that they grow pretty fast and stand rather harsh exposures.

The third picture which we present on the page is a blue gum, which has been made to take on an unusually full form by shortening in or pollarding.



One of the Casuarinas or She-Oaks of Australia at Home in California.



Unusually Dense Form of Blue Gum—Eucalyptus Globulus.

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SAN FRANCISCO, JANUARY 14, 1905.

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The Week.

Another week of alternating sunshine and light rains has brought field work forward and maintained growth of grain and pasturage. There has been a freedom from sharp freezing and the time is rapidly passing during which that is possible. The cool weather is valuable as preventing too rapid plant development until the safer February arrives. Rains in southern California have also improved the situation there, so the winter is advancing in a promising manner.

The Legislature is still occupied with Senatorial issues, as we go to press, and other things must wait. One thing which will arise soon, however, is the future of the State Agricultural Society. It is stated that Governor Pardee has approved of the purchase of the new tract of land at Sacramento and will doubtless be disposed to favor the equipment of the society on its new field. The new secretary, Mr. Lindley, is taking the work up energetically and proposes to make the organization of more value to agriculture and to the State than it has been recently, and he, too, should be helped to materialize his plans. We believe the State Society should have a good show to develop along new and better lines and perform the functions which properly belong to it.

Wheat has been on the up grade in Eastern and foreign centers the greater part of the week, but there has been no pronounced change here, although a firm tone. Barley is being firmly held. One full and one part cargo of barley, aggregating 3400 tons, cleared for England. Ocean freight rates from this port to Europe are not quotable over 12s 6d per ton on wheat cargoes. Only four ships now on the grain-loading fleet, but plenty of idle tonnage. Oats are in light stock and stiff prices prevail for best; the Government is in the market; one dealer made a tender of white oats to be delivered from Australia to Manila, double sacked, at $1.67½ per cental. Corn is slightly higher, due to less selling pressure. Lima beans are quoted down 5@10c per cental; other bean values are without special change; market quiet. Bran and middlings are in only moderate stock and rather stiff prices remain in force. Hay is barely steady, although the Government wants 1000 tons for prompt shipment. Choice beef is in good request and market firm at improved figures. Small veal is going at a moderate decline. Mutton values show no special fluctuation, but are being well sustained. Hogs are not arriving in sufficient quantity for the market to develop weakness. Fresh butter shows increased receipt and market lacks strength; cold storage stocks have been greatly reduced through shipments East, about thirty carloads having gone forward. Cheese is in fair supply and prices unchanged. Egg market continues on the decline, being unsteady at the reduced figures. Poultry was in light receipt and met with a good market. Potatoes are in improved demand and market tended in favor of sellers. Onions moved slowly, but values were well maintained. Apple market was higher for strictly fancy. Standard Navel oranges were in light receipt, but of other kinds stocks were ample. Lemon market was quiet at prices same as last quoted. A shipment of 381,000 pounds prunes was made to London; in other dried fruits not much doing and not much stock to operate upon; peaches are higher. Tendency on raisins is upward. Nothing new in almonds; stocks light and held with confidence. Walnuts scarce. Honey market firm for water white extracted; other kinds quiet. Hops are not offering in great quantity and prices without quotable change. Wool market strong; stocks small; Eastern and foreign prices 3 to 8 cents per pound higher than a year ago, medium and charse showing most advance.

Impressions produced by the writer's observations in the Yosemite valley last summer convinced him that the proposition to unify the valley with the surrounding forest reserve and to recede the valley to the United States were good propositions. It seems to us unreasonable to have the valley ruled by a local commission and maintained at an expense to the State, when much better results can be secured by having it rationally handled by the same agencies which handle all the reserve with which it is intimately connected and of which it forms only a small part. Besides, the expense to the State is thus avoided. It will be a California affair just the same; we have seen no proposition to move it out of the State. But there seems to be an effort to churn up some sort of patriotism to oppose the return of the area to the United States, as though California was losing something thereby. It is a misapprehension. The greater the Yosemite becomes as a National Park the better it will be for California, and it certainly will be greater in the public mind when it takes its place beside the Yellowstone Park as a matter of national concern. We believe that the various bodies which are moving for the accomplishment are wise and should succeed.

University extension is proceeding literally with "railroad speed," which a generation ago was an ideal of rapid motion, although now the terms do not mean so much. But railroad speed literally invoked is pretty fast for the extension of University effort in the promotion of agriculture. We read that the Burlington Railroad next week will send out a special engine and car, in charge of Prof. Hopkins of the University of Illinois, who will give lectures on the science of selecting good seed corn to farmers along the line. A stop of forty minutes will be made at each station to show the results of corn breeding by the University of Illinois. When the State line is reached, a professor from Iowa College will take the train through that State. Railroad car demonstrations are not new, but this is, we believe, the first time a University has gone on wheels. It is a good plan.

Recently we noted the fact that Californians were working to secure the next annual convention of the National Live Stock Association for California. A convention is being held at Denver this week, at which the California invitation will be urgently extended. It is a great affair in the live stock line and will do this State good to come into contact with the national movement. What the purpose of the organization is has been newly stated by President Hagenbarth in these words: "The primary object of the reorganized National Live Stock Association will be the promotion of harmony among the allied branches of the live stock industry. We intend to bring about an era of educational and scientific development of the business, which will be based on the principle of co-operation." This is quite in the line of other California efforts and for this reason the organization should be welcomed here. California is at one side, and though our producers in various lines are doing many new and unique things, there is still much to gain by joining heartily in the movement, which includes the whole western half of the continent.

The efforts for improvement of wheat are making due progress. A meeting of the executive committee appointed by the State Board of Trade and the San Francisco Merchants' Exchange was held last week and a very satisfactory conference had with the Experiment Station experts who are undertaking the work. It was shown that land had been secured on the farm of Mr. B. F. Walton, near Yuba City, and that a representative of the United States Department of Agriculture, Mr. Fitz, had already sown the large collection of varieties, upon the basis of which he proposes to conduct his experiments in culture, hybridization, etc. The Washington Department thus takes a share in the co-operation, which began with the Berkeley station and the wheat merchants, growers and millers. It is expected that another tract of land near Modesto may be secured in time for Mr. Fitz to make another planting like that at Yuba City. The merchants, growers and millers are also preparing a bill for the Legislature which will constitute the State a direct patron of the important enterprise.

QUERIES AND REPLIES.

Agricultural Education.

TO THE EDITOR:—I am a high school graduate and am contemplating a University course in agriculture. For what lines of work is the course designed to prepare a student? What positions are open to him, especially what lines of work under the agricultural department of the Government? Are these positions comparatively remunerative?—READER, Tuolumne county.

The regular University course in agriculture has two rather distinct ends: One is toward professional work or teaching in agricultural science; the other is toward practical enlistment in agricultural or horticultural operations. The latter course seems to suit best those who have agricultural property which they wish to enter upon for a life work. In some cases this property is owned by the parents, and they desire to fit their sons for taking charge and developing and improving it. Another line of use for this course would be preparation for managing agricultural properties for others, but in this occupation there are rather few opportunities, and the compensation is apt to be rather smaller than can be commanded on the professional side, because proper valuation of a thoroughly trained manager does not yet prevail among owners who prefer to take their chances with a lower priced foreman without college training.

The agricultural course leading to professional work has at present rather more opportunities, and these are found chiefly in colleges or experiment stations, or as expert agricultural chemists, bacteriologists, etc., in connection with manufacturing establishments, like beet sugar making, etc. There is enough practice introduced into this scientific division to enable the student to learn the application of his science. The United States Department of Agriculture still needs young men in its various divisions, and they should be graduates of the scientific branches. The remuneration in all these lines is moderate—rather less than commanded by graduate civil, mechanical and electrical engineers, and about comparable, perhaps, with the remuneration commanded by high school teachers. One can be reasonably sure of commanding a fair livelihood from it, providing he has talent to use the acquirements in an effective way. There is much compensation to the worker in the character of the work in which he becomes very much interested, and of course there are opportunities for higher engagements and corresponding remuneration, providing his achievement in the lower departments warrant promotion. We cannot make the statement more definite than this and hope the suggestions will be helpful to you.

Filbert Growing.

TO THE EDITOR:—I wish to obtain all the information possible regarding the growing of filberts, and was recommended to correspond with you. I would be very grateful to you for any pamphlets or information bearing on that subject.—ENQUIRER, Portland.

The Californian who knows most about filbert growing in California is Mr. Felix Gillet, Nevada City, Cal. In fact, we think he is about the only man who has succeeded with this nut. We have already published his conclusions, and later information can be had by correspondence with Mr. Gillet.

A Poor Kind of Alfilarilla.

TO THE EDITOR:—Enclosed please find a heavy-leaved sample of alfilaria. Noticing that it is rare here we thought it might not be well known and would prove valuable as a forage plant.—OBSERVER, San Diego.

This is a flat-growing filaree which is recognized by Mr. H. M. Hall, assistant botanist at the University, as Erodium botrys. This filaree may be distinguished from the two common species by the leaves which are merely lobed, the lobes being toothed. In the other species they are compound; i. e., made up of a number of toothed leaflets arranged on short petioles along the main stalk of the leaf. Erodium botrys is a newcomer and was introduced from the Mediterranean region only a few years ago, but is rapidly spreading in some parts of California, particularly in the grazing districts of Marin and Solano counties, where it is occupying the land to the exclusion of other and more important forage plants. It does not ordinarily grow in the same situations as the red-stemmed filaree nor as the musk filaree, but prefers low rolling hills and pasture lands, where it crowds out the more valuable grasses. As a forage plant its value is almost nothing. Its leaves hug the ground so closely that cattle do not get them and the flowering stalks, although erect, are nearly destitute of foliage. Its further spread should not be encouraged, even in southern California, where, on account of the long, dry summers, it is likely to give the least trouble.

Beans and Bacteria.

TO THE EDITOR:—What is your idea in regard to inoculating bean land with bean bacteria, and how should it be done? I am intending to plant red kidney beans in a field that has been sown to alfalfa for several years. I have plenty of water, and the land is red soil, mixed with slickens. Do you think that they would do well on such land the first year?—GROWER, Marysville.

Although it is quite true that we do get good crops of beans in California without the intervention of the bean bacteria, it is still the part of every progressive man who is growing beans to make an experiment with the introduction of the bacteria in order that he may do so, whether these organizations can accomplish anything under his conditions or whether, indeed, the soil is already well supplied with them. If you will write of your proposition to Hon. James Wilson, Secretary of Agriculture, Washington, D. C., he will send you publications on the subject; also a small sample of the bacteria, with suggestions as to how they should be introduced. By doing this and by comparing the plot to which the application is made with other beans on similar soil not thus treated, you will not only have a demonstration of the efficacy of the method, but, if it succeeds, you will have plenty of the soil filled with the bacteria which you can scatter and thus accomplish the inoculation of the whole field. We would like very much to hear when the crop is finished what the result of your experiment is.

Distillate for Apricot Scale.

TO THE EDITOR:—I wish to get some information in regard to the advisability of spraying apricot trees with distillates to kill scale and clean the trees from moss which harbors other insects. If distillates are not recommended, then please inform me what you would recommend. Last year the apricots were so badly infected in Santa Clara county as to render the larger part of the crop unfit for canning purposes, as well as turning out a very poor grade of dried fruit.—ORCHARDIST, San Jose.

It is not possible for us to give you full information as to spraying with distillate for apricot scale, because, though there is a great probability that it will be effective, there has been very little done in an experimental way. For the distillate to be effective, however, you have to select carefully the time of the year when the scales are moving and it is now probably too late until the weather warms up rather late in the spring and the eggs begin hatching. It is not likely that distillate will have any particular effect on the old scales when they are sealed down for winter protection of the eggs. Probably a most effective time would be after the fruit is gathered in the summer. It will require experimentation to demonstrate this matter. The killing of moss is another matter. That can best be done by spraying with lye, one pound to six gallons of water, while the tree is dormant. That is much easier to do than to kill the scale by spraying.

Dodder on Alfalfa.

TO THE EDITOR:—If you will tell of dodder, its nature and the approved methods of exterminating it, it will be a favor. If you can advise me, I should like to know especially if the dodder seed when eaten by a cow will retain its vitality through digestion. I have a ranch with dodder on only a part. I do not know whether it is safe to pasture cattle interchangeably on the clear and foul land.—NEW COMER, Modesto.

We have frequently discussed the occurrence and treatment of this parasite of alfalfa, and full information has been made public. Our last discussion was in PACIFIC RURAL PRESS of August 13. We do not know of any evidence as to the vitality of the seed after the process which you describe, but believe that the seed would not be injured by it. When pasturing is resorted to to kill out dodder its efficiency lies in keeping the plant down so that it does not have opportunity to form mature seed. This interesting phase of the question has not been suggested before and for that reason we can not give you exact information. Has anyone observation on the point?

Root Knot.

TO THE EDITOR:—Has the cause of root knot ever been ascertained and any remedy been found for it? It appears that certain varieties of the almond are less subject to the root knot. Can you tell me which varieties do better resist it? If you know a remedy, do not omit to say at what season it could be applied to best advantage.—R. M. W., Lodi.

We have frequently discussed this subject. The root knot is caused by a low kind of fungus called a "slime mold." It is contagious and is probably spread by cultivation. The treatment is to remove knots with hatchet or chisel and soak the wound with Bordeaux mixture. This work can be done at any leisure time during the dormant season, and probably would not be injurious at other times. We do not know of the comparative resistance of different almonds. As all named varieties are grown by budding on seedling stocks, it would be very difficult to determine resistance of varieties, as the disease is on the root and not on the top.

Absolute Blight Proof Pears.

TO THE EDITOR:—Are there any varieties of pears that are absolutely blight proof? If so, will you kindly enumerate them?—HOWARD REED, Marysville.

This must be disclosed by observation. At present we cannot say that any variety is absolutely blight proof. Judging from Eastern experience freedom must come along the line of the Chinese sand pear, but this species will not meet California's uses for pears. The Le Conte, which has that blood in it, is perhaps the most resistant variety known, but from our point of view it is a very poor pear. The Kieffer, which is a hybrid, with sand pear blood, is not absolutely resistant, and the Kieffer is also a poor pear as compared with those of European origin. It needs long observation to answer our correspondent's question, and every reader who grows a number of varieties should watch their behavior.

Calomel for Pear Blight.

TO THE EDITOR:—An old southern man told me that he helped to cure blight on a large pear orchard when he was a boy. He said they dug down 4 inches to a root, cut a slit in the bark, and slipped one-fourth or one-half teaspoonful of calomel under the bark and covered the root with earth, and every tree was saved.—SUBSCRIBER, Chicago, Ill.

Thank you for the intention, but we have not the slightest idea that the calomel had anything to do with the disappearance of the blight.

Cranberry Growing.

TO THE EDITOR:—Would it be possible for me to obtain from you a copy of the PACIFIC RURAL PRESS of recent date containing an article on "Cranberry Growing?" We have a place that might be suitable if they would thrive in this climate. Please let me know if I can obtain the paper, also price of same —READER, San Benito county.

In the PACIFIC RURAL PRESS of October 22 we had an article on cranberry growing on the upper coast in the State of Washington. Copies of back issues within the year are furnished for 5 cents each. As we have frequently stated, however, there is very little chance of making cranberries profitable in California. All trials, covering thirty years or more, have been abandoned.

Transplanting Onions.

TO THE EDITOR:—Will you please tell me how large young onions, grown from seed, should be before transplanting? I have a nice lot grown in a cold frame, sown, perhaps two months ago, but do not know how large they should be before transplanting into the field.—GROWER, Mountain View.

In growing transplanted onions it is desirable that the transplanting should be done while the seedling is rather small, although there is considerable latitude in size and there is little likelihood of your plants being too large, as you have grown them without bottom heat. It is more important to plant out when the soil is in good condition; that is, not too cold and wet and there is little danger that your plants will be too large if you wait for that condition to arrive in the field. Owing to the likelihood of low temperatures and heavy rains in January, it will be advisable for you perhaps to wait until next month before transplanting. It is usual to trim back the top and the roots about one-third or one-half of their length when taking up from the seed bed.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 9, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

San Joaquin Valley.

Cold, cloudy and foggy weather has prevailed most of the time since the first of the month, with rain in most places during the period. Frosts have been frequent, but caused no serious damage. The cold weather retarded the growth of grain and grass somewhat, but both are in fair condition. Plowing and seeding are progressing, and in some places the acreage in grain is being considerably increased. Green feed is plentiful in most sections and cattle are in good condition. Pruning is in progress in vineyards and orchards. Orange harvest is practically completed. The crop was large and of excellent quality.

Coast and Bay Sections.

Partly cloudy and cool weather prevailed most of the week, with heavy rain in all sections. The cold weather retarded growth of grain and grass, and frost caused some damage to growing vegetation. Early grain continues in good condition and gives promise of a large crop. Plowing and seeding are progressing slowly in some sections, owing to heavy rain. Pasturage is abundant and of good quality, and cattle are in excellent condition. The rain of the preceding week was very beneficial to crops of all kinds in the southern districts. Pruning is progressing. Cloverdale oranges are in market.

Southern California.

Frequent rains since the latter part of December and up to the close of the week have materially improved the condition of all crops. The soil is now in excellent condition, and plowing and seeding are progressing rapidly. Some of the early sown grain is up and looks very well. Pasturage is steadily improving and stock are in better condition than at last report. Oranges and lemons are being harvested and shipped in considerable quantities. No serious damage has been done by frost.

Sacramento Valley.

Cool weather since January 1st, and cloudy with a good deal of fog since the 3rd. The low temperature—30° on the 4th—occurred during heavy fog and no damage resulted. Grain is in excellent condition and feed is still very abundant. The price of hay will be very materially affected by the abundance of grain feed. Pruning orchards and vineyards is progressing rapidly and the setting of vines and strawberries is also going on.

LOS ANGELES SUMMARY.—In most sections, last week's rain gave pasturage a good start and rushed plowing and seeding, which had come to a standstill from lack of rain; also benefited orchards and stopped irrigation. Week ended with rain.

EUREKA SUMMARY.—Weather favorable. Oats and grass made good growth. Plowing and seeding general and progressing rapidly. Pasturage abundant and stock in fine condition.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 11, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	T	17 37	19 73	21 02	56	38
Red Bluff	0 22	14 98	12 83	13 07	62	32
Sacramento	0 88	9 66	4 76	8 96	56	32
San Francisco	0 38	10 56	6 22	11 58	54	40
Fresno	0 03	6 21	0 94	3 95	58	38
Independence	0 22	0 67	0 42	2 02	58	28
San Luis Obispo	0 26	6 73	0 82	9 10	64	38
Los Angeles	0 94	4 50	0 43	7 50	74	46
San Diego	1 30	3 89	0 42	3 99	72	48
Yuma	0 78	1 69	0 66	1 80	72	42

THE FIELD.

Agricultural Labor in California.

By HON. W. V. STAFFORD, State Commissioner of Labor Statistics at the State Farmers' Institute at Berkeley.

Three years ago the Bureau of Labor Statistics made 800 separate inquiries amongst both employers and employed for the purpose of obtaining data upon which to publish an article upon this subject. The letter of inquiry was accompanied by a form to be filled out, the questions asked covering about all the phases of this vexed question.

The answers were apparently given more to show the local standpoint, coupled with individual bias, rather than logical statements based upon wide observation. Along some lines, however, there was sufficient uniformity of opinion to justify the compiling of statistics that may be considered in the main correct.

For instance, it seems generally agreed that the number of hours per diem worked by white wage earners on the farm in California during the sowing season averages from ten to eleven and during the harvesting season from twelve to thirteen. The wages per diem for same class apparently average during sowing season from $1 to $1.15 with board, and during harvesting season from $1.50 to $2 with board.

The replies received to the query as to the quality of the board furnished to workers on farms vary, 64% declaring it to be good, 15% termed it fair, while 21% declared it to be very bad.

In the absence of specific data it remains an open question as to what proportion of the 64% declaring the board good were biased by the fact that they were employers furnishing the board, or how large a number of the 21% declaring it very bad were of the unsettled stratum that is hard to please.

In answer to the query as to the predominating nationality of the workers employed on farms, 66% declared it to be American, 3% declared it to be Irish, 6% said German, 3% Italian, 3% Mexican, 6% Portuguese, 3% Swiss, and 10% declared it to be indiscriminately mixed. Evidently each writer took the position that whatever local conditions existed on his homestead, so went the State.

In reply to the query as to the stability and reliability of the wage worker, 62% declared them to be, as a rule, reliable, while 38% declared them to be utterly unreliable and unstable. Comparing these figures with those furnished regarding the quality of board, we are forced to the conclusion that either a good percentage of the hired men were satisfied with the table furnished, or a large number of employers believed their help to be reliable; probably both deductions are correct.

In reply to the question as to the condition of farm wage workers compared with the condition of wage workers in other vocations, 43% declared it to be good, 9% declared it to be very good, 6% declared it to be better, 10% declared it to be fair, 7% declared it to be poor, 10% declared it to be very poor, and the remainder attempted no comparison.

The replies regarding the employment of Mexican, Chinese and Japanese are in about the same relative proportions and are too local and vague to be of much value in this connection.

The replies to the query as to what could or should be done to improve the standard and condition of the farm laborer in this State were of infinite variety and startling in contrast. A few culled at random are as follows:

Close the saloons on Sunday.
Pay wages only once a month.
Give fewer hours and better pay.
Prevent the workers from going to town.
Improve the accommodations given them, etc.
Treat them as human beings.
Give the workers good board and lodging.
Shut out the foreign element.
Protect the men who take the place of strikers.
Organize unions amongst the men.
Exclude hobos.
Restrain the trusts that are strangling the producer.
Raise the price of produce.
Secure Government ownership of the means of production.
Educate boys to industry.
Lower the tax.
Provide for a fixed number of hours for a day's work.
Build more churches.
Have smaller farms.

If all these suggestions would be carried out no doubt there would be an end to much agricultural controversy, and, possibly, to many other difficulties, but many of them seem competent to bring along their own discords.

In answer to the query as to the cause of the instability among wage workers on farms, where same existed, 16% declared cause to be intemperance, 5% attributed it to instability of employment, 6% laid it to poor quality of board and lodgings furnished, 10% declared it to be bad treatment at the hands of employers, 10% attributed it to low wages paid such labor, while 11% declared it to be natural shiftlessness on the part of such labor, and 42% attempted no explanation.

DEDUCTIONS.—From the whole mass of apparently vague and inconsistent matter we can make some fairly logical deductions. Evidently many believe that there is much room for improvement in the treatment rendered to farm laborers, while just as many, apparently, believe that the laborers themselves fall far short of the requirements. Again, it is evident that there are many of both employers and employed that have been so fortunate as to meet and appreciate each other. In other words, there are to be found farms upon which the conditions are just and fair to all concerned, and the task devolving upon all interested should be to learn and adopt the means necessary to bring about this condition to its fullest possible extent.

While all employers have the difficulties incidental to their business, the farmer is additionally handicapped by the fact that all new arrivals in the State drift to the cities. Railroad transportation from the East terminates naturally at San Francisco or Los Angeles, with the result that every man who comes to California seeking employment has every inducement so stay in the cities where the social conditions naturally appeal to him, and as a consequence the farmer gets last choice.

CALIFORNIA CONDITIONS.—Up to recent years farm labor in California meant principally labor in the grain farms of the large interior valleys, with a rush of work during the seasons of plowing, seeding and harvesting; long days, hard fare and generally rough, uncouth conditions, with a positive assurance of a long term of idleness. What wonder that there should quickly develop a class of labor that proves to be as rough and hard as the conditions that created it, and is it to be wondered at that much of the crudeness and all of the stigma stay with the business in spite of the changed conditions. The fact that to-day more men are required on small fruit farms than for the entire grain industry—that the labor must possess stability and sobriety in a more marked degree and that it must feel an interest in the success of the employer is all self-evident. But it is also self-evident that the employer must be the first to recognize these truths, since he has most at stake, and he has the best opportunity successfully to organize for mutual interest.

There has been no time in the past when there was so much room for intelligence in the varied phases of farm life as the present, no time when education played such a part, or when the pleasure in pursuit of results was so assured as now; and just as this age is so much in advance of the past, just so much, under extraordinarily favorable conditions of soil, climate, etc., does California stand in advance of other regions.

THE LABOR SUPPLY.—It is a regrettable fact, however, that while there has been highly intelligent and splendidly organized arrangement for placing the land in the market for the small purchaser, extraordinary patience and toil in every direction for the development of the products of the State, endeavors that have been rewarded by success undreamed of, resulting in wonderful development of both old and new varieties, and while the methods for placing fruits and vegetables in good shape on distant markets have progressed with startling strides, we still very largely do our pruning and plowing, our picking and packing with help that is a selected choice between a whiskey-soaked derelict and a newly-landed descendant of the Cæsars.

Are the farmers, as a class, blameless in this matter? Have they put a tithe of the energy, the care, the money into the labor question that they have in every other branch of their business? And if they have made effort, have they made it consistently? Can they expect the floating farm labor of the State to elevate itself under adverse conditions without systematic aid from the employer?

NEW JERSEY METHODS.—The Bureau of Statistics for New Jersey has just published an interesting volume entitled "Industrial Betterment Institutions in New Jersey Manufacturing Establishments," in which is shown all that is being done in that State to make life a little more pleasant for the rank and file in factories. There are 150 pages of matter describing and illustrating all the voluntary methods adopted in recent years for the physical and social betterment of the help. Without going into detail the whole can be summed up as an endeavor to make the employment safe, healthful and comfortable. The methods used varied considerably, but can be classified as follows:

Premiums for good work.
Profit sharing.
Free baths.
Dining and lunch rooms operated at actual cost of supplies.
Free reading rooms and gymnasiums.
Sick benefits and accident societies aided by employer.

A little investigation shows that the same forces are working amongst the manufacturers and wholesale stores of California and as a consequence becomes a factor in the difficulties the farmer has to meet. We can for the present purpose eliminate the moral and humanitarian features and take the situation solely from its business standpoint. No doubt some of the methods mentioned above would be somewhat impracticable in farm life; but is there any good reason why a farm hand at the close of a hot and dusty day should not appreciate a bath as well as a man in a foundry, and would it cost any more to fit up accommodations of this character than it does in the cities? We cannot expect farmers to furnish libraries, but if $5 per annum should be expended for sixty numbers of good magazine literature, with a similar amount for one or two good weeklies, any one who has watched the eager crowd of farm hands meeting the newsboy on the first train on Sunday to get the city paper with its colored supplement, knows full well such expenditure would be highly appreciated.

Profit sharing may not be practicable; neither may the plan of paying premiums for extra good work appeal to the employer, but to show appreciation of such work is simply to look after his own interest. There should be some way to get the help interested in the success of the farm; to get the hired man to feel a pride in the successful packing of the fruit output with its resulting top price, to feel an interest in the successful rearing of stock, the care of work horses, the hanging of gates, the flow of the water supply and all the thousand and one things that go to make the farm pleasant as a home and profitable as an investment.

STEADY EMPLOYMENT.—About the first essential is steady employment for the hired man, steady enough to appeal to his natural desire for an unbroken year's pay, steady enough to allow the employer to feel that he is not paying a man a single day unnecessarily; and in order to insure this it will be necessary that the hired man should be both resourceful and energetic, and the man hiring him must take sufficient interest in his own business to plan and figure ahead sufficiently to provide not merely employment for the help, but such employment necessary for the year's work, that can be performed on wet days and off days, but too often is left to be done only when the spur of necessity is thrust in to the bone.

The care of fences, readjusting of gates, cleaning of machinery, constant care of farm manure, hauling and cutting of fuel—all of these are as necessary as the care of the actual crop, and all call for industry and intelligence on the part of the help, and all are factors in giving the hired man a more active interest in the place.

But you may ask, does this not call for a more intelligent man than the old methods of hiring in the spring and firing in the fall produced; and where shall we find him? Well, how do we find anything that is of value—by diligent and systematic search. The country boy drifts to the city, the newcomer from the East if hunting employment makes for the city, and the European emigrant has for his terminal the city, and the city culls them over; the factory, the wholesale quarter, the water front, the municipal government, the street car business, the hotels, the livery stables, the milk wagons, the bakeries, the big express deliveries, the teamsters—they all take their pick and the farmer gets a chance at the balance.

THE OPPORTUNITY IN AGRICULTURE.—The farmer knows that not a single one of the industries above mentioned has made greater strides in the past twenty years than this industry, that none of them call for higher intelligence, and that none of them respond to intelligence with greater rapidity than does this business of agriculture in all its varied forms. Then it would seem necessary that he should decline longer to take the residue of the labor world; he should up and assert his right to do a share of the selecting, and he should do it in the proper place—right in the city, not under the old system, but by new and up-to-date methods of his own.

It is often stated that the wage question is the vexed question with farm labor, but that is doubtful. A man at $25 per month, with steady employment and well treated so far as food and lodgings are concerned, with the social home life that pertains on some farms, has better treatment, better food, pleasanter work and even shorter hours than many a man around livery stables, milk wagons, bakeries, etc., in large cities and will have much more money at the year's end.

The main feature of the whole business is the social feature. Let them feel assured of some semblance of home comfort, of good, clean food and some social equality coupled with the possibility of obtaining a farm of their own, and thousands of city bred young men will gladly exchange the turmoil and fever of town life, hoping to realize the dream that all city people have of the country charm.

AN AGRICULTURAL LABOR BUREAU.—Why cannot the farmer, through some system of district or State organization, maintain an agricultural bureau, managed by men who know exactly what is required, who can diagnose every applicant for employment and send him exactly where he belongs, the individual employer affiliating and making his application for help upon a form provided in which he states not only the wages to be paid, but the duties to be performed, the duration of the employment and, if deemed practicable, the social status of the employe. A method calling for such radical change would, no doubt, have difficulties to contend with at the outset, but not in any degree to compare with the difficulties that had to be met in order successfully to irrigate for fruit or safely to pack and ship to distant markets.

No doubt the financing of an agricultural employ-

ment bureau will be considered an objection, but if all that is paid to-day by employer and employe as fees to employment agencies, whose best results probably simply fit the square peg to the round hole, could be gathered in a lump sum it would run the bureau suggested in first-class shape and leave a handsome surplus.

The railroads are intelligent in their operation and are no doubt desirous of being in perfect harmony with the producer. Why not point out to them how they aid in our spiritual welfare by carrying the clergy at half price, how they are willing to help State development by periodically bringing all who desire to come from the East at about the same generous rate, and how they can naturally aid the good work by carrying labor for a farmers' bureau at the same percentage to and fro in the State.

The promotion committee is without doubt doing a great work in attracting the attention of the outside world to California, and the farmers might well enlist that body to aid in improving the class of help provided, especially if some method of selection could be inaugurated at the starting point.

We have reached the point where quality is of more importance than quantity. No State in the Union is more competent to absorb people from the outside than is California, but with all our room and opportunity there is no vacancy that can profitably be filled by importations that lack mental and physical energy.

No account of existing conditions in California can be even approximately correct unless it takes into consideration the fact that probably 20% of the agricultural labor is Chinese and Japanese. We will leave all the argument, pro and con, regarding alien population to those who take a biased attitude on race questions, and confine ourselves strictly to actual conditions affecting labor.

On a farm where the major portion of the labor is Oriental, will it be probable that the food and accommodations provided for white unskilled labor will be as inviting as if only white labor were employed? And will not white labor of a clean and decent type resent the idea of being competitive with the Asiatic and search for new fields as a consequence?

The agricultural labor question is no doubt an important one through all sections of the Union, but more especially where white labor comes in more or less direct competition with the Oriental. And while we can scarcely expect a farmer to study the race question every time he hires a laborer, we cannot escape the fact that he aids directly in a small degree in bringing about a final solution of this phase of the problem, for assuredly our steadily increasing development will result in one of two things—either we shall evolve a highly intelligent laborer, fitted for the complex agricultural and horticultural conditions, so rapidly improving, or we shall have an alien serf population, with neither present ambition nor future hope. And there is nothing in our national life justifying anything but a firm belief that the former, and not the latter, will be the final outcome.

THE GARDEN.

Extraction of Essential Oils and Perfumes in France.

From United States Consul-General Robert P. Skinner, Marseille, France.

A California correspondent, who desires information in regard to the "extraction of geranium oil," is not sufficiently explicit in his inquiries to enable me to reply as I should like. There appears to be no such thing as a commercial "geranium oil," in the same sense as olive, almond, or other vegetable oils are commercial. My correspondent may mean geranium essence, or possibly geranium pomade, popularly denominated geranium oil. It would be unprofitable in a consular report to pretend to give practical instructions in so delicate a trade as the distillation of flowers. Americans interested in this subject should serve an apprenticeship in France, or try to attract to their country foreigners already versed in the business.

The essences or essential oils, known also as volatile oils and perfumes, are odorous substances, oily, volatile, indifferently soluble in water, more or less so in alcohol, colorless or yellowish, inflammable, and likely to alter in the air. They are usually liquid at ordinary temperatures, while some are solid or partly crystallized. They have not the greasy consistency of the fixed oils and they leave no durable blemish upon paper.

Distillation. — The most common means of extracting essences is by means of distillation with water or steam. Although the point of ebullition in the case of essences is above 100° C., they vaporize easily with steam. The flowers are generally gathered before the rising of the sun, and are distilled immediately. They may be placed with salt in barrels, and thus preserved, but when this is done the perfume is likely to lose its delicacy. Some plants may be dried before distillation; but the principle may be laid down that prompt distillation gives far the best results.

Numerous devices are on the market for cutting and crushing the plants and flowers and otherwise preparing them for the still. The essences do not immediately vaporize with steam, but only after a certain period. This results from the fact that the essence is frequently imprisoned in the cellular tissue of the plant, and escapes only as this tissue dilates under the application of heat. The stills are simple in form, and numerous designs are offered for sale. The steam carrying the liberated essence passes from the boiler through a coil of pipes, to be condensed in another vessel. The distillation is considered as accomplished when the water discharged from the coil of pipe is odorless. The liquid remaining in the boiler is then used again with fresh plants, so that any remaining particles of the essence may be secured.

The perfume laden water is commonly received in a Florentine vase, from which the water is poured. If the essence is heavier than water the spout of the vase is placed higher than it would be otherwise, so that the oil may remain on the bottom.

Absorption.—The foregoing is the generally accepted method of essence extraction in this region. The process of securing perfumes or essences by absorption is equally easy of comprehension. This method is employed when the flowers under treatment, notably the violet, cassia flower, jasmine and heliotrope are so delicate and possess perfume in so limited a quantity as to render extraction by distillation difficult. To extract these highly delicate perfumes manufacturers avail themselves of the property which the plants possess of transferring their odor to greases, fixed oils and paraffin.

Extraction by absorption is called maceration when the vehicle is liquid grease, enfleurage when it is a heavy grease, and pneumatic when a current of air is passed upon the flowers and then conducted through grease or benzine.

To extract perfume by maceration a quantity of clarified beef or mutton kidney grease is mixed with clarified pork grease, the combination being then melted, and in this form, at a temperature of 65° C. maximum, receiving the flowers designed for treatment. The flowers are left in this bath for from twelve to forty-eight hours, after which they are strained out and replaced from ten to fifteen times, until the grease or pomade possesses the requisite strength. The French manufacturers designate these pomades by numbers, as 6, 12, 18 and 24, the numbers indicating the intensity of the perfume. Antique oils (huiles antiques) are manufactured in the same manner, except that the grease is replaced by olive oil.

Certain perfumes are so delicate that the process of absorption in hot greases is impossible. In such cases the flowers are placed in a linen cloth and are plunged in olive oil. The flowers are renewed every twenty-four hours, the operation continuing during one month. The oil is unlikely to become rancid during the operation. Another process involves the use of glass-bottomed frames upon which is spread a layer of grease. Upon the grease the flowers are extended and allowed to remain from twelve to seventy-two hours. They are renewed during the flowering season, sometimes two or three months. The grease imbibes the perfume and is converted into a very fine pomade.

Again, coarse cotton cloths soaked with olive oil and laid upon frames of wire netting are covered with flowers that are renewed frequently. Finally the cloths are subjected to strong pressure, and the perfumed oil is gathered.

Many of the pomades thus obtained serve to produce the French "extracts." The extracts result from the introduction of alcohol into copper drums containing the perfumed pomades. After a long and violent trituration the greases remain intact, but the odorous substances are dissolved by the alcohol. The contents of the copper drums are decanted and such alcohol as remains in the grease is afterwards withdrawn by distillation. The grease cannot be used again for the purpose of extracting perfumes.

Dissolvents.—Success has recently attended efforts to extract essences by dissolvents. The principle entering into this method is that the natural perfumes are liberated by the application of a temperature higher than that of the atmosphere surrounding the plant. The inventor of this process separates the perfume by dissolving it in a highly volatile liquid, which is then distilled. Excellent results have followed the use of ether, chloride of methylene, mesitic alcohol and sulphate of carbon as dissolvents. The flowers are introduced into an apparatus, into which the ether or other dissolvent is poured. After ten or fifteen minutes this liquid is drawn off, and more ether is introduced, and similarly withdrawn. The ether dissolves the perfume, and then, on distillation, leaves it in the form of a white or colored residue. This residue may be oleaginous or solid, but it always becomes solid after a time. Petroleum ether is recognized by the Societe de Parfums Naturels de Cannes as the best dissolvent. This company has perfected a system for obtaining essences, but has not disclosed important phases of the operation. The product is known as "essence concrete." One kilogram of this pure perfume is equivalent to 100 kilograms (220 pounds) of pomade.

Geranium Essence.—As to geranium essence in particular, I learn that it is obtained by the first process described—that is to say by distillation. The essence of geranium is called "essence of African rose," and is extracted from the leaves and flowers of several plants of the Geraniaceæ family. Of these, the most important variety is that known as Pelargonium odoratissimum, which is the object of very extensive culture in southern France, Algeria and Turkey. Several other varieties of geranium yield a sweet rose odor, to which the name of African rose is frequently given.

The coloring is almost always red, or a derivative therefrom, such as carmine and pink, even darkening to black.

Apart from a few varieties which thrive best on a stony dry soil, with a full sunny exposure, the pelargonia favor a healthy light soil, enriched by the addition of decomposed manures. If kept in pots, these should be most carefully drained. The use of manure is essential, if it is desired to make the plants strong. The cultivated varieties do not all yield seed, and those which do are reproduced only by means of seed beds. The pelargonia vegetate all the year round, but must be returned to hothouse or frame early in October. Though they are long lived, it is well not to preserve them after the age of two or four years, at which period they are most beautiful.

The leaves are distilled by means of steam, yielding 0.12% of essence, which is frequently employed as an adulterant of essence of roses. The best essences known to commerce are the French and Spanish, especially the dark-brown essences. The African geranium essence is inferior to these. The gathering of flowers destined for the extraction of essences is a delicate process. Each flower must be plucked at an appropriate hour of the day, and in a certain stage of development ascertained only by experience. The crop of geraniums in southern France now reaches 3,300,000 pounds. One hectare (2.47 acres) produces from 55,000 to 66,000 pounds of leaves; worth from $1.14 to $1.33 per 220 pounds. The product in pure essence amounts to 2.20 pounds to each 2204 pounds of raw material.

I am indebted to the important work of J. P. Durvelle, the Journal de Pharmacie et Chimie, and Vice-Consul Piatti of Nice for this information.

Marseille, France, Nov. 15.

HORTICULTURE.

The Walnut Industry.

By J. B. Neff of Anaheim before the University Farmers' Club Institute at Santa Barbara.

The walnut which we are to talk about to-day is that which is commonly known as the English walnut, though it probably originated in Persia or in Asia Minor, and from there spread westward to Rome, and was distributed through continental Europe. There are no records to show when the first planting was done in California, but the best authorities say that it was by the Mission Fathers about the year 1769.

Historical.—Very few trees were planted for nearly 100 years after the first planting. About the year 1843 J. J. Warner planted a few trees at San Diego, and F. E. Kellogg, Sr., planted a small orchard at Calistoga, in the upper part of Napa valley, in 1848. J. R. Congdon of Capistrano planted an orchard of hardshells in 1869. H. K. Snow and P. T. Adams planted the first walnut grove in the vicinity of Tustin and Santa Ana in 1879. These were hardshells, and the planting was an orchard of eight acres, which was characterized as a rash adventure by the neighbors. A year later they heard of softshell walnuts grown by Joseph Sexton of Santa Barbara, and got some nuts to plant in nursery. They planted the first softshell walnut orchard in that vicinity in 1883. The first walnuts planted at Anaheim were hardshells, and were planted along the roads and around the vineyards about 1860. Softshell planting was not begun until the vine disease began its ravages in 1885 and later.

There are but few walnut groves of commercial importance north of Santa Barbara county, and as the range of profitable cultivation extends over only a comparatively small area, there is not much danger of overproduction.

The early planting was of hardshells or papershells, but at present nothing is planted but softshells, and quite a large percentage is of budded stock, the buds being taken from selected trees.

Cultural.—Walnuts should be planted only on good deep soil, not underlaid by hardpan nor where water will stand on the surface. A sandy loam is to be preferred. Two-year-old trees are much more likely to grow than younger trees.

The general opinion is that the trees should be planted from 40 to 50 feet apart, but this depends on the soil and locality. In some instances the additional profit of the 40-feet planting over that of 50-feet planting will amount to more than enough to pay all the expenses of maintaining the orchard. There must also be water for irrigation in most places, as the walnut tree needs more water than it usually gets. The ground should be thoroughly soaked in the winter, and two, or, better, three irrigations in the

summer, with water enough at each irrigation to make the ground wet to a depth of at least 5 feet. A good rule is to put on water enough to keep the ground damp, whether it takes one or four irrigations.

Cultivation enough should be given to retain the moisture, and keep the ground free from weeds, during the summer season.

Walnut trees will begin to bear paying crops after the fifth year, and, if conditions are favorable, should continue to increase for many years. Walnut trees live to a very old age in suitable localities. Trees in Spain and in the south of France that are believed to be over 300 years old bear regular crops of 400 to 500 pounds of nuts, but very few of the trees in this State that are more than 30 years old are in a vigorous condition.

No thorough tests of fertilization have been reported, each grower fertilizing according to his own ideas, or not fertilizing at all. This is something that should be done systematically for a series of years under the supervision of an expert, and gives a good opening for the State Universioy to be of great assistance to the walnut growers.

The Blight—This, as well as the prevention of walnut blight, needs immediate attention from observers who are better trained than the majority of walnut growers, and who have time and means at their disposal to continue the tests until something definite is known.

Considerable has been said lately about spraying and the use of lime on the ground as a preventive of blight, but the experiments have not been general enough, nor carried far enough, to determine the benefit to be derived. E. G. Ware, who is a careful observer, has experimented by spraying with Bordeaux mixture for the past three years on a nine-acre plot of 15-year-old trees, of which half was sprayed and the other half left without treatment. He reports a gain from the sprayed trees of 4.27 pounds of No. 1 nuts per tree the first year, and 5 pounds of No. 1 nuts per tree the second and third years. In the season of 1904, just passed, he made some experiments with refuse lime from the sugar factory, and gives his results as follows:

Block No. 1, 44 trees limed and sprayed produced 47.5 pounds per tree; 44 trees untreated produced 33.5 pounds per tree. Difference in favor of treated trees, 14 pounds per tree.

Block No. 2, 80 trees limed and sprayed produced 43 pounds per tree; 40 trees untreated produced 33.5 pounds per tree. Difference in favor of treated trees, 9.5 pounds per tree.

Block No. 3, 84 trees limed and sprayed produced 63.9 pounds per tree; 40 trees untreated produced 33.5 pounds per tree. Difference in favor of treated trees, 30 pounds per tree.

The 208 trees above, limed and sprayed, produced 52.4 pounds No. 1 nuts per tree; 124 trees, above untreated, produced 33.5 pounds No. 1 nuts per tree, making an average gain of 18.9 pounds No. 1 nuts per tree, or a gain of more than 50% in favor of the trees which were limed and sprayed.

Block No. 4, 39 trees sprayed, but not limed, produced 36.3 pounds per tree; 40 trees not treated produced 33.5 pounds per tree. Difference in favor of sprayed trees, 2.8 pounds per tree.

Block No. 5, 40 trees not treated produced 33.5 pounds nuts per tree; 44 trees limed, but not sprayed, produced 30.9 pounds nuts per tree. Difference in favor of untreated trees, 2.6 pounds nuts per tree.

The trees that were limed only had more blight in 1903 than the 40 trees that were not treated, but the lime alone without the addition of spraying does not show any gain.

Five tons per acre of the refuse lime, known as "Press cake," was used, and the blocks were arranged so that the irrigating water could not take the lime from one block to the next. The cost of spraying was 21 cents per tree, and the cost of lime was 60 cents per tree. The gain was 18.9 pounds of No. 1 nuts per tree. The trees were 14 and 15 years old.

Some other growers who have used lime in a general way report that they saw no benefit, while others thought it a damage, though no accurate record was kept. One grower who used lime in connection with peas as green manure, reports much benefit, but as no check plot was kept, nothing can be determined.

An analysis of refuse lime from beet sugar factories was made at the State University about three years ago, with the following result:

Potash, 1 pound per ton; phosphoric acid, 41.6 pounds per ton; nitrogen, 5.6 pounds per ton. Approximate valuation $2.27 per ton.

No account is given of the lime content because of the fact that California soils, as a rule, are abundantly supplied with lime.

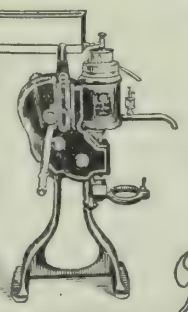
It may be that lime used in connection with nitrogen gathering plants, such as peas and lupins, may be of benefit, but this has not been determined.

The theory advanced when the use of lime is recommended, is that the lime hardens the cells of the plant, thereby preventing infection by lessening the time of exposure of the newly formed growth; this is not borne out, however, by Mr. Ware's observations on Block No. 5.

The condition of the weather during the early growing season greatly influences the development of blight. The records show that when there is an excess of damp days the blight is most damaging and that when the weather is dry there is less damage.

The total yield of walnuts in the State in a year of good crop is about 8000 tons. In 1896 the first associations were formed for marketing walnuts, and these have grown in favor until now about three-fourths of the entire crop is marketed in that manner.

The annual dinner given by the Paraffine Paint Co. to its traveling men was held on Friday evening, December 30th, in the banquet room of the Merchants' Club, San Francisco, Cal. This is the fourth annual dinner given by this company, these dinners being given for the purpose of bringing together the factory superintendents and the men who are responsible for the selling of the goods. The company has resident agents established in various cities on the Pacific coast, the territory adjacent to these cities being covered out of central offices. Thirty representatives from different parts of the West were seated at the table. A pleasant evening was spent about a bounteous board, and the close of a most satisfactory year's work was celebrated. The utmost goodfellowship prevailed, and the gathering will no doubt prove a source of great benefit to the men and the company. The Paraffine Paint Co. is now in its twenty-first year. It has shown a remarkable growth, and its goods—P. & B. ready roofings, P. & B. building papers, P. & B. and Pabco paints and malthoid roofings—are favorably known all over the West and in all countries whose shores are washed by the waters of the Pacific ocean. Its success, while largely due to the excellent quality of the goods manufactured, is also due to the intelligent and energetic way in which these goods have been brought to the attention of users. The works of the company are at Emeryville, Alameda county, Cal., the railroad station being known as Paraffine. The main offices are at 24 Second street, San Francisco, Cal.



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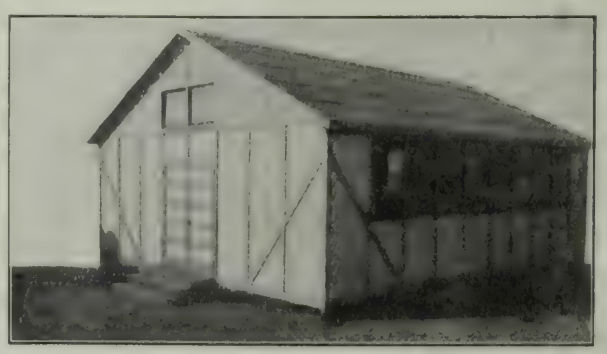
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Agricultural Review.

Butte.

SHIPPING OLIVES EAST. — Oroville Register: G. H. Matthews is having exceptional luck with his olives this year. He filled many orders and now these orders are being duplicated from the parties who received the fruit. He has no trouble in selling all his olives at $1.50 a gallon. Yesterday he got an order to send fifty 1-gallon kegs to a leading hotel in New York City. He is convinced there is big money in the olive industry here, and believes it would pay to put up immense pickling plants in this locality.

Mendocino.

SLAUGHTER OF SHEEP ANGERS STOCKMEN. — Ukiah special to Sacramento Bee: Considerable excitement has been aroused among the sheep raisers of this section by the killing of many sheep by unknown parties. The sheep are killed and sold to the Indians. A close watch has been kept night and day on some of the ranges, but while one place is being guarded the miscreants are operating in another. The heaviest losers are Mr. Ford, J. B. Milton, D. Ford and J. Weselesky, who have lost 300 or 400 sheep during the past week. A reward of $500 has been offered for the arrest of the criminals. The losers have sent for bloodhounds and intend running the thieves down.

Placer.

FRUIT GROWERS MEET.—Republican, Jan. 5: The meeting of the Placer County Fruit Growers' Protective Association was held at Loomis. Notwithstanding the inclement weather for the preceding days, the attendance was fully representative of the fruit industry of the county. Organization was perfected. A large list was added to the roster of membership, reports of important committees were received and discussed and appropriate action was taken. The matters of rebates, freight, refrigeration and other subjects occupied considerable of the attention of the gathering and the Interstate Commerce Commission was not overlooked. On the contrary, good solid action was taken toward having the powers of the Commission extended and strengthened to the end that the Commission may govern railroad rates, and that it may be so strengthened that none will dare to resist its authority, and when it says a rate is to go into effect, it will at once be obeyed. The general affairs of the Association were fully considered. The matter of dues brought out the idea that too much haste is not advisable and that the dues should for the present be made as light as possible, and that, if the people wish at a later date to increase them for reasons which will be apparent, it can be easily done, and therefore the rates established for the present are 25 cents per month for each member.

San Bernardino.

HUNDREDS OF ACRES BURNED. — Chino Champion: The first of last week a field fire swept over a large area of land southeast of town and destroyed hundreds of acres of pasturage, a considerable amount of fencing and several bridges. It is said to have been started by L. Richenberger near Euclid avenue and got beyond his control. A brisk east wind was blowing and carried the fire across the country several miles along the north side of Chino creek to Central avenue. A large amount of good pasturage was consumed and a long line of fencing was burned. A bridge some 20 feet long on the county road from Central avenue to Rincon was burned, and two or three smaller bridges along the same road were damaged.

San Joaquin.

THE PIERCE HOLSTEINS.—Independent: Judge W. C. Hunt of Liverpool, N. Y., one of the best experts in the country on Holstein cattle, was the guest recently of the Pierce Land & Stock Co. at their model dairy farm at Riverside, on Rough and Ready island. "Mr. Pierce has a great place," declared Judge Hunt in chatting about his visit to Riverside farm. "It is one of the greatest places of the kind I have ever seen in the country. The soil and the cattle are excellent. The conditions are ideal. In fact, I have never seen such conditions before for handling such large herds. I have also never seen such a large herd the equivalent of this one. As to feed and so forth, I think you have us beaten about forty ways. We have to house our stock about six months out of the year, while here you are able to keep your stock out of doors the year round. There is a fertility on Mr. Pierce's place that our land never had even when the soil was new. The scheme of irrigation on Mr. Pierce's place makes him absolutely independent. I must say that the herd I have seen here is the finest I have ever viewed. One bull far outranks any I have ever seen. From what I have seen I must also say that your feed here now is much better on an average than we have during the six months we are able to keep our stock in the field." Judge Hunt is an inspector of the Holstein-Friesian Association of America and went to Quebec last July to inspect the herd imported by Mr. Pierce at that time. His home, Liverpool, N. Y., is near Syracuse and is a great Holstein center.

Sacramento.

BIG TURNIPS.—Union: Mrs. Meister has presented the Chamber of Commerce with some gigantic turnips that were raised without fertilization on her ranch on the Marysville road about 4 miles from Sacramento. The turnips are so large that one of them would be enough to cook for a family of eight or ten persons.

Santa Cruz.

ORCHARDISTS' ASSOCIATION. — Watsonville Pajaronian: The regular monthly meeting of the Pajaro Valley Orchardists' Association was held at the Board of Trade rooms Saturday afternoon. President C. H. Rodgers called the meeting to order and after the reading of the minutes he stated that F. L. MacDonald, of the fruit packing firm of MacDonald & Sons, desired to present a proposition to the members. Mr. MacDonald first read a recent quotation from the London market which gave the price of California Newtowns at 6s 6d and Oregon Newtowns at 14s. The speaker said that there was no good reason for such a difference in prices; that Pajaro valley packers had brought prices down by sending out a poor pack. He held that fruit was not judged by the best in the box, but by the poorest; therefore local packers had lost prestige by packing good fruit and inferior fruit in the same box. President Rodgers called attention to the urgent need of action on the part of orchardists to preserve the fruit industry. He said that it was not because Oregon apples were so superior to ours that they bring better prices, but superior methods of grading and packing.

Stanislaus.

SUGAR PLANT WILL BE MOVED TO MODESTO. — Benicia special to Sacramento Bee: The California-Hawaiian Sugar Refining Co. at Crockett offered to move its plant to Modesto if 2500 acres of sugar beets would be guaranteed. A recent canvass of the outlying lands of Modesto secured over 3000 acres, and final arrangements are under way with the Modesto Board of Trade. It is understood that the refinery company is receiving a liberal monetary inducement, besides the acreage in beets and the building sites.

MILLER & LUX MUST PAY $10,000.— Modesto Herald: A verdict for $10,000 against Miller & Lux in favor of A. de Long has been rendered by a jury in the Superior Court of Merced county. The trial lasted nine days, and the jury was out only thirty minutes. The plaintiff is an aged stonecutter. On June 27, 1900, he and his son were thrown from their buggy on the county road between the San Joaquin river and the town of Los Banos. The road was covered with water, and the vehicle was tipped by running into a hole in the roadway. The older man sustained injuries, incapacitating him from following his trade. The plaintiff claimed that the hole in the road was due to irrigation water diverted by means of a dam across Middle slough, which by reason of levees was forced across the road in order to get on grass land west of the county highway. He claimed damages to the extent of $25,000, in compensation for the loss of his earning capacity, and for the pain he had suffered and would still suffer. The defense contended that the defendants were not responsible for the water on the road, or for the hole in the road, and further claimed that the physical injury done the plaintiff by the accident was not so great as was stated.



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The Pharisee and His Neighbor.

I do not crave my neighbor's land,
For they are less than mine;
I do not envy him, his hands
Are coarse, my robes are fine;
I do not, when I see him pass,
Look out with jealous eyes:
I do not crave his ox or ass,
They're nothing I would prize.

The Lord in gazing down on me
Must be immensely pleased,
Beholding my complacency;
My heart is not diseased
By craving for the treasures which
My neighbors may display;
The lands that I possess are rich,
He tills unfruitful clay.

I do not crave my neighbor's wife,
She's plain and old and ill;
My neighbor, toiling all his life,
Is unrewarded still;
He doubtless envies me and sighs
For things that I possess—
Ah, how Jehovah must despise
Him for his wickedness!

No jealousy do I permit
To lodge within my breast;
Obedient unto holy writ,
I should be richly blessed—
But he that, seeing I am high,
Would share the things I claim
Must be regarded from the sky
As deep in sin and shame.

—S. E. Kiser.

If I Wait.

I do not hear the message that
The robin hears in spring,
Which brings him homeward from afar
On swiftly flying wing;
But still I know he's coming, and
Will hide his nest and mate,
In the tree which now is leafless—
So I wait.

I cannot feel the shiver that
The startled leaflet feels,
As autumn's breath, frost laden, through
Its vivid greenness steals:
And yet the change is coming, though
To me it may seem late;
And the green leaves will turn crimson
While I wait.

I cannot grasp the meaning of
Earth's happiness and pain;
Yet both I know await me if
Life's best I would attain;
Each step I trust leads onward, and
God's universe is great;
To find no incompleteness
If I wait.

—Helen M. Richardson.

Beyond the Edge.

Beyond the sky and the sea,
Beyond the line of all things—
Boundless:
Beyond the bud and the flower,
Beyond the face of the dead man—
Trackless:

Hark! across the waste—a love cry,
Warm blood surging—a gray sky—
Helpless:
Out of the silence—a black wing,
The curse of memory's sting—
Hopeless:

* * * * * * * * *

Outward—inward—it matters not,
The story's told—and then forgot.

—George Herriott.

Her Birthday Present.

"I wish you," said George, "very, very many returns of the day."

"Thank you so much, dearest," said Ida. "You never forget my poor little day, do you?"

"No, dear, no," said her husband, as he gave her the broken poached egg and took the more perfect specimen for himself. "I never forget your sweet little birthday; and now comes the great question, what am I to give my darling?"

"How kind of you. I hardly know what to say. You see," she added, shyly, "some things cost so much more than others, don't they?"

"Yes," said George, meditatively, "that is a perfectly just observation. However, on this occasion I don't want you to think about money value at all. I have had an exceptionally good year. Even if I had not, it would be painful for me to think of money at all in this connection. I always say it is not the money value of a present which gives it its worth, but the spirit in which it is offered. (Will you want this last piece of toast? No? Then I will take it.) Now, what is it to be? On what have you set your heart?"

"To tell the truth," said Ida, "I have set my heart on something, but I am almost ashamed to say it."

"Why?"

"They are perfectly lovely, but the man in the shop said $1000 was the lowest price. You might be able to get them for less because you are so clever in business. It is only a single row and they've got a diamond clasp. You know those that Mary wears? Well, these are just like them, only hers, of course, are only imitation."

"Ah!" said George, with an indulgent smile. "And what is it exactly you are talking about? What is the precise idea that has got into my wife's pretty head?"

"I'm afraid it is a pearl necklace."

The indulgent smile still remained, but he shook his head. His manner was that of the father at the Zoo, who is telling his baby that she must not really ride on the lion. "I wonder if you have any idea what pearls are?"

"These are $1000, didn't I say?"

"Yes, dearest, you did; but if you were asked to describe a pearl, how would you do it?"

"I should say that it was a precious stone?"

"It is funny how that idea got about. A pearl is not a mineral at all. It has not that quality of hardness which is demanded, I believe, in every precious stone, unless, perhaps, the opal is excepted."

"How do you come to know all these things? I shan't mind a bit about the hardness. They'll be as hard as I want. It isn't as if I were going to jump on them, George, dear. I shall wear them round my neck. They are a necklace, didn't I say?"

George shuddered.

"Yes, sweetheart, you did. This is what is so appalling. The mere thought of it makes my blood run cold. To think that you should put such things on you, actually allowing them to touch your skin, is too horrible for words. It is an ordeal I would never under any hollow pretense of generosity dream of subjecting you to. I think far too highly of you, my dear, for that."

"But why? I can't see it. I think pearls are just too beautiful for words. They've the loveliest color in the world. I could look at them all day."

"We have to think what they really are. That is what I cannot get away from. I can never shut my eyes to it. So much so is that the case that the very sight of a real pearl causes me a feeling of nausea. Pearls are the pathological secretion of a very dirty shell fish. I am sorry to use such words, but they give you the plain fact."

"What is a pathological secretion?"

"I mean that they have their origin in disease. Am I to take a horrible product of a diseased fish and hang it around my wife's pretty neck? No; the idea is too repulsive." "Yes," he continued, as she began to speak, "I admit your argument. I know that there are women of supposed refinement who do these things, but either it says little for their refinement or much for their ignorance. I assure you that on one occasion I nearly had to leave the theatre because the lady in the stall next to me was wearing a rope of those painful objects. Their only right place is in a pathological museum."

"I never knew you felt so strongly about it. Of course, George, I give up the idea at once. It's really rather flattering that you should think me too good to wear pearls. Yet"—she looked meditative.

"Yet," said George, cheerfully, "you do in your heart like the shape and the color of these things."

"That's true."

"Then I'll tell you what we'll do. My objections to real pearls cannot apply to the artificial, and at the same time the artificial have the shape and color, which is all that you really want. I will get a little necklace for you today for a dollar or two, and that will leave enough over to renew the linoleum in the upstairs passage. Now, I must be off to the city. How would it be if my little treasure ran along into the hall and brushed her husband's hat for him?"—Barry Pain in Sphere.

To Awaken When You Wish.

We hear it frequently asserted that if persons will impress the thought firmly upon their minds and continue thinking about it until they have fallen asleep that they desire to awaken at a certain hour in the morning, that they will do so, but how many people have tried that method of insuring a prompt awakening at a given hour in the morning only to find their rest throughout the night disturbed and uneasy?

The brain will usually respond to the will and awaken one in the morning near the desired hour under any circumstances; but to prevent the broken, uneasy sleep the adoption of only a very simple device is necessary. The last thing before getting into bed take a watch or clock and turn the hands to the hour at which one wishes to rise and gaze at this just long enough to fix the hour firmly on the retentive memory. Then, if no other absorbing thoughts intervene between that and the moment one is locked in slumber, the night's rest will be easy and unbroken, and promptly at the hour in the morning, as a rule, one will find one's self released from sleep and wide awake. There is no need to keep thinking of the hour continually for a number of minutes, no need to repeat it over and over in the mind; all this makes the brain uneasy and results in the disturbed slumber; simply look at the watch or clock as I have indicated and the influence of the mind over matter will be clearly demonstrated in the morning. Try it some night and observe how smoothly this psychological fact works.

Hints for the Eyes.

Shade the eyes from full glare of sunlight.

When the eyes are weak, sleep all that is possible.

Keep soap and dust out of the eyes.

As you value your sight, avoid all quack eye doctors.

Never read or use the eyes for fine work during twilight.

Whenever an eye is injured, call in an experienced oculist at once.

Never expose the eyes needlessly to dust or flying particles of any kind.

Have an abundance of good, steady light for any work you may have on hand.

Let the light come to your eyes from one side or from above, not from the front.

Do not work in a poor light, and avoid a glaring light, as it may be as bad as too little light.

Do not use a flickering light for reading or sewing. Use a lamp with a large burner and use good oil.

When the eyes are hot and heavy, bathe them in cold or tepid water, and do not confine them too closely to any sort of work.

Whenever the eyes ache or are easily fatigued, use them as little as possible, and look up frequently from the work to rest them.

When reading, hold the head erect and at a distance from the light, and do not bend the head over the work any more than is necessary.

Avoid poorly printed books with poor paper and poor type, and do not read when riding in cars or carriage, nor when convalescent from a protracted illness, nor when the whole body is in a weakened state.—Health.

Don't Grow Old.

"Don't imagine you must become stoop-shouldered because you are growing old," said a well-known physician to a friend. "Old people do not stoop because they are old, but they get old because they stoop. The stiffening of the tissues, which is the sign and accompaniment of age, is warded off by exercise. Self-indulgence in eating and in drinking and in lazy ways is the sure road to senility.

"I have often been surprised and gratified to find that regulated movements of the neck and upper truncal muscles, employed for the purpose of accomplishing something else, resulted in a conspicuous movement in hearing, in vision, in cerebration and, as a consequnce, in betterment of cerebral circulation, also in sleep. Persons who habitually maintain an erect position in standing or sitting are stronger than those who slouch. A person who stoops and allows the shoulders to sag down and forward and the ribs to fall back toward the spine shortens the antero-posterior diameter of the thorax anywhere from 2 to 5 inches. The lungs, heart, great vessels and other important structures in the thorax cannot live, move and have their proper being under such circumstances."

Wherefore, the proper thing for persons who are not so young as they once were is to brace up, dress young and feel young. Sitting "hunched up" over a fire won't do.

Investigating Pneumonia.

The movement for the study of pneumonia, which has been started under the auspices of the New York Department of Health, must be regarded with profound satisfaction. The malady in question has increased in prevalence during the last few years and is now a close rival of tuberculosis in the mortality it causes. Its victims are almost invariably men and women who have previously been blessed with robust health, and whose business and social activities are numerous. So rapid is the progress of the disease when it proves fatal that a career of usefulness is thus ended with lamentable and peculiar suddenness. Finally, despite the frequency with which pneumonia occurs in every large community, it is not so well understood as are several less common disorders.

Medical men entertain little doubt that this disease has a bacterial origin, but they have been much puzzled to decide to which particular species of organism it should be attributed. A confusing variety of microbes has been found in the mouths of patients. One, recognized and described by Fraenkel, occasionally appears in diphtheria, and on that account its precise relation to pneumonia has not been altogether clear. Again, the pneumococcus which Friedlander discovered, and which is usually held responsible, is, nevertheless, missing in at least a few unmistakable cases. The situation is still further complicated by finding the germs of plague, or of typhoid fever, or of certain suppurative derangements of the system in the saliva or blood of those who are suffering from pneumonia. It has been suspected that there are distinct differences in the cause, as well as in the degree, of inflammation of the lungs. Should that supposition be verified, it would become apparent that now one and now another of these organisms is responsible for substantially the same result. Obviously, then, the first essential of the inquiry recently begun is a more exact definition of the function of the various bacteria which are associated with pneumonia. How many of them are real mischief makers, and how many are accidental concomitants? The admirable manner in which the pending research has been organized encourages the hope that a better answer to that question will be found than ever before.

A second proposition on which there is general agreement is that pneumonia is infectious; but a great deal remains to be learned about the methods by which the germs are transmitted from one person to another. Is there any possibility that they may be carried about in the dust of the streets or in the air of public vehicles? Is one altogether safe if he merely avoids visiting the home or place of business of a victim? Are there any sanitary precautions to be taken in street cars, stores, places of public entertainment and railway stations which would minimize the danger to the community? These are

problems of immense practical importance, and in their solution three classes of people are interested. Those who are charged with the care of the sick and who are solicitous for the welfare of others wish to know what are the best measures to adopt in the home. Municipal officials, transportation companies and managers of establishments in which a large number of persons are employed also have a manifest duty to perform. Third, if there are any safeguards which, like vaccination, can be adopted by the individual to secure immunity for himself and family, he should have the opportunity to utilize them.—N. Y. Tribune.

Hints to Housekeepers.

Pillows are not so large as heretofore, and sensible housekeepers now provide two medium-sized ones for each person, instead of one large one. This plan is particularly desirable for a guest chamber, as it enables the guest, whose preference in this respect is unknown to the hostess, to adjust his head high or low, according to habit.

Mildew may sometimes be removed from white fabrics by covering the spots with lemon juice and laying in the sun. Lemon juice will not serve for colored fabrics, however, and it is said that lard makes a satisfactory substitute. Rub the spots well with lard, and lay in the sunshine day after day for a week. Wash in the usual manner.

Little glass medicine cups, with teaspoonful, tablespoonful and wineglassful indicated in raised letters, are valuable to have in the kitchen. The usual method of guessing at the right quantity of salt, flavoring extract or other cooking material is not to be recommended. Teaspoons are not made in any uniform size. Medicine glasses are.

For mock turtle soup save some of the meat and cut it into dice. Thicken a cupful of the liquor in which the meat boiled with a tablespoonful of butter and a tablespoonful of flour. Add a cupful of beef stock or a cupful of hot water flavored with beef extract. Flavor lightly with thyme and to taste with salt and pepper. Have ready three hard boiled eggs cut into small pieces. Put them with the meat into the tureen and turn the hot soup over them. Serve hot with slices of lemon.

SALMON BISQUE.—Drain the liquor from a can of salmon and turn the contents into a saucepan. Cover with boiling water, add a pinch of salt and cook for ten minutes. Drain thoroughly; be sure that there are no bones, then mash through a strainer and place again over the fire. Add a pint of chicken stock and allow it to boil. Then turn in a pint of heated milk and a cupful of cream. Stir until perfectly smooth, strain again and serve. If not rightly seasoned add more pepper and salt.

White Feet.

In a published interview a physician urges that the wearing of stockings with white feet will do more to promote ease in walking and remove foot ills than anything to be suggested. Socks or stockings of cotton or lisle thread in black bind the feet and make them swell, he says, no matter how fine and open they may be. The black dye with the hard thread of the lisle variety is a combination that is particularly torturing to tender feet. Thin unbleached Balbriggan he recommends. Preferably whole sock or stocking may be white, but at least the foot should be. A further caution is added that new cotton hose as well as all undergarments should be washed before being worn, to wash out the sizing used by manufacturers.

Green Food for the Cat.

It is a common thing to hear women say that they can not keep growing plants of any kind in their rooms on account of the cat, who persists in nibbling and biting the leaves and new buds as they make their appearance, sometimes destroying in the course of a few weeks some favorite or rare fern or flower.

The reason for this seeming vandalism is perfectly plain, or ought to be. The cat requires green food, if it is to be kept healthy and happy, and takes the shortest road to getting it.

In summer, following this need of its system, a cat will eat grass freely. In winter or in the city, when this supply of green fodder is cut off, common sense suggests that the cat be artificially provided with it.

For its own sake, as well as for the safety of the Boston fern and the rubber plant, why not plant a cigar box of soil with some quick-growing thing like oats or sorrel, and let the cat help itself?

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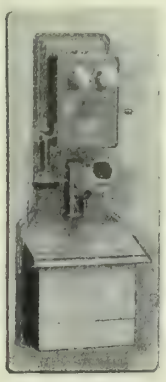
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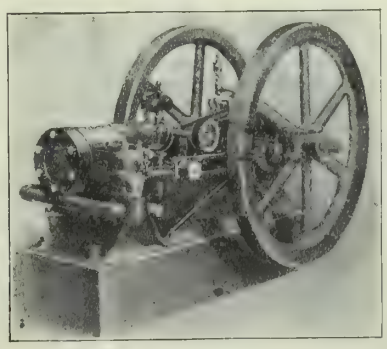


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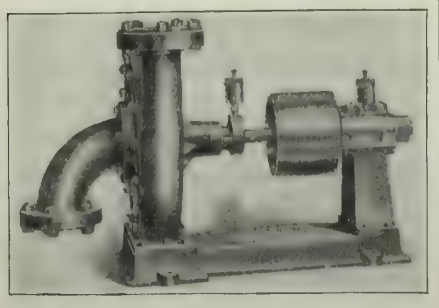


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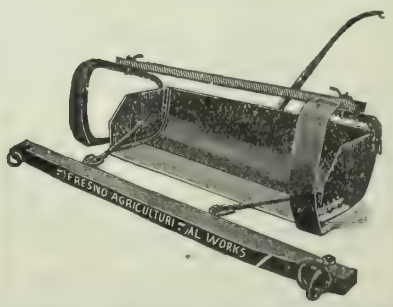
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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, January 11, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 14⅝@1 14⅞	98⅛@— 98⅛
Thursday	1 15 @1 14⅞	98⅛@ 98⅛
Friday	1 14⅞@1 15⅛	98⅛@ 98⅜
Saturday	1 14⅞@1 15⅛	98⅛@ 99
Monday	1 15⅜@1 17⅛	98⅛@ 99⅛
Tuesday	1 18¼@1 16½	$1 00 @ 99¾

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	44½@44½	44⅝@45
Thursday	44½@44½	44⅞@44⅞
Friday	43 @44⅜	44⅜@44⅝
Saturday	44¼@44⅝	44⅜@45⅛
Monday	44⅛@44¾	44⅜@45¼
Tuesday	44⅜@44⅜	45 @45⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 45 @1 46½	$——@——
Friday	1 46⅞@1 47½	1 33 @——
Saturday	1 47 @1 46½	1 33½@——
Monday	1 46¾@1 47⅛	1 33 @——
Tuesday	1 47½@1 46¾	1 32½@1 31¾
Wednesday	1 46⅝@1 46⅞	——@——

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@—s	12½@—s
Local market	$1 40@1 42½	$1 40@1 45

Wheat.

Market has been decidedly firm most of the week. There were no pronounced changes in quotable values for spot wheat, in fact not enough offering to admit of any special activity, but speculative values averaged higher than preceding week, both here and in the East. Foreign markets also tended against buyers. Present local inquiry is mainly on milling account. There are only four ships now on the engaged list and these are not likely to carry much wheat. The export trade during the balance of the season will of necessity be very light in this cereal. It is doubtful if the wheat now in the State will prove sufficient for seed requirements this Winter and home consumption until next crop becomes available. Considerable wheat is being imported from the North and some is being brought in from the East. Even with the importations, the carry-over is apt to prove of small proportions. Market for grain charters is lifeless. On wheat cargoes from this port to Europe not over 12s. 6d. per ton for carrying could be realized at this date.

California Milling	$1 50	@1 60
Cal. No. 1 shipping, alongside	1 40	@1 42½
No. 1 Oregon Club	1 40	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.45⅞@1.47¼.
December, 1905, delivery, $1.33½@1.31¾.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.46½@1.46⅞; December, 1905, $——@——.

Flour.

In sympathy with wheat, there is a generally firm tone to the flour market, unless for old stock or brands which are not well or favorably known. The latter where crowded to sale have to go at comparatively low figures. Business is of fair volume for this time of year.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The market has been ruling decidedly firm, and indications are will continue unfavorable to the buying interest during the balance of the season. Spot offerings are of light proportions, and stocks in the interior are of quite moderate volume. More would be going outward if the barley could be readily obtained in wholesale quantity. Local requirements for seed, feed and brewing are apt to absorb about all the stock in the State, leaving very little on hand at the end of the season. Free purchases are not possible at this date at full current quotations, and stiffer prices than have yet ruled this season are likely to be experienced during the next few months. The speculative market was higher and firm at the advance.

Feed, No. 1 to choice	$1 15	@1 16¼
Feed, fair to good	1 12½	@1 15
Brewing, No. 1 to choice	1 17½	@1 22½
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 12½	@1 15

Oats.

There are no heavy quantities offering of any description, and choice to select oats are particularly in light supply. Market is firm at the quotations, with no probability of easier figures being current during the balance of the cereal year. Business in choice to select seed oats is mostly of a retail character, owing to paucity of supplies of this description.

White oats, fancy feed	$1 50	@1 55
White, good to choice	1 45	@1 50
White, poor to fair	1 35	@1 40
Milling	1 45	@1 50
Black oats	1 30	@1 65
Red, fair to choice	1 30	@1 55

Corn.

Market remains much as last quoted, but is slightly firmer for Large Yellow and White; present stocks and offerings are mainly of these kinds. Small Yellow is held at tolerably stiff figures, being in favor for chicken feed and in limited supply.

Large White, good to choice	$1 30	@1 35
Large Yellow	1 35	@1 40
Small Yellow	1 60	@1 75
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 30	@1 35

Rye.

Prevailing values are being well maintained. Stocks are light and in few hands.

Good to choice	$1 42½	@1 47½

Buckwheat.

A small lot arrived the past week and will likely go for seed.

Good to choice	$1 75	@2 00

Beans.

Market has been showing a little more activity, quotable values remaining much the same as last noted. Good to choice beans are being, as a rule, very steadily held. Damaged stock is not receiving much attention and is selling under quotations.

Pea, fair to good, 100 lbs	$2 90	@3 10
Small White, good to choice	3 15	@3 30
Large White	2 35	@2 60
Pinks	3 00	@3 50
Bayos, good to choice	2 50	@2 90
Red Kidneys	4 50	@5 00
Reds	4 00	@4 50
Limas, good to choice	4 00	@4 15
Black-eye Beans	2 40	@2 50

Dried Peas.

Scaacely anything doing in this line and values are poorly defined. Offerings are mostly in faulty condition.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 75	@2 25

Hops.

The local market is quiet, but in the absence of any special pressure to realize on the part of either growers or dealers, there is a rather firm tone. The impression prevails that remaining stocks will be required before another season opens. The New York Producers' Price Current says: "Reports from interior show that during the past week, between 500 and 600 bales of hops have been sold by growers at prices ranging from 30 to 32c, and in consequence a better feeling appears to have developed there. On the local market a quiet trade is the feature with prices unchanged. Advices from London would also indicate a continued very quiet market and whatever inquiry exists is for medium grades at cheaper ranges."

California, good to choice, 1904 crop	26	@30

Wool.

Market in this center is quiet, owing to offerings being of insignificant proportions. All the wool markets of the world present a geneaally strong tone. Dealers are contracting for 1905 wools at materially higher prices than were current the past year. Large quantities of Australian wool are arriving at this port and are going to the Atlantic side in bond, the duty being 11c per lb. The Orange Judd Farmer gives the following, compiled from official reports: The wool clip of the United States for 1904, according to the annual estimate of the National Association of Wool Manufacturers, aggregates 291,783,032 pounds in the grease. This is equivalent to 123,935,147 pounds scoured, the smallest output since 1900. The total value of the clip is placed at $65,940,959, the highest for several years. Montana led in the production of wool with a total of 37,773,000 gross pounds; Wyoming came second with 29,450,000 pounds; New Mexico third with 17,325,000 pounds. Other States with upward of 10,000,000 pounds were Idaho, Oregon, California, Utah and Ohio. The clip shows a gain of 4,333,000 pounds over last year in the grease, but a decrease of 431,000 pounds scoured wool. The average weight of fleece for the season was 5 pounds, a slight increase over the preceding year. The shrinkage was heavier than for the past few seasons, however, averaging 61.6%. Prices for the year show up well, top Texas spring exceeding 61 cents per pound, scoured basis, the highest since 1891. Territory fine medium scoured reached 59 cents, the best price since 1899. Ohio delaines washed sold up to 36 cents per pound, a point not reached before in the present century. Ohio XX exceeded 34 cents per pound, and Kentucky ⅜ combing, unwashed, touched 30 cents, about as high a price as has been paid in a decade.

SPRING.

Northern, free	28	@—
Northern, defective	17	@21
Oregon, good to choice	20	@23
Nevada	16	@21

FALL.

Northern	15	@19
San Joaquin and Southern, free	13	@16
San Joaquin and Southern, defective	9	@11
Southern lambs, as to quality	9	@14

Hay and Straw.

There is a fair outward movement, but demand on local account is light. Stocks are liberal of nearly all descriptions, and the market lacks firmness, despite recent heavy movement to the Orient, and the purchase by the United States Government of 1,000 tons for prompt shipment.

Wheat, good to choice	$13 00	@	14 00
Wheat and Oat	10 00	@	13 00
Tame Oat, fair to choice	8 00	@	13 00
Wild Oat	8 00	@	10 00
Barley	9 00	@	11 00
Alfalfa	9 00	@	11 50
Clover	7 00	@	9 00
Stock hay	6 00	@	7 00
Compressed	11 00	@	14 00
Straw, ₱ bale	45	@	55

Millstuffs.

Market was moderately firm for Bran and Middlings, supplies not being heavy and mainly in few hands. Rolled Barley inclined against buyers. Tendency on Milled Corn product was to easier figures.

Bran, ₱ ton	$20 50	@	21 50
Middlings	25 00	@	28 00
Shorts, Oregon	20 50	@	22 50
Barley, Rolled	24 00	@	24 50
Cornmeal	30 00	@	31 00
Cracked Corn	30 50	@	31 50
Oilcake Meal	31 50	@	33 00

Seeds.

Holders of Alfalfa in Utah are seeking custom here, but dealers in this center are not purchasing to any great extent. California Alfalfa is not in large supply. Choice Mustard is in light stock and is being steadily held.

Flax	$1 75	@	2 25
Mustard, Yellow	3 50	@	4 00
Mustard, Trieste	4 50	@	5 00
			Per lb.
Alfalfa			12 @13½
Canary			6½@ 6¾
Rape			1¾@ 2¼
Hemp			3½@—
Timothy			5 @ 5½

Honey.

White liquid Extracted is a rather scarce article, and market for same is firm, with transfers in a small way at an advance on quotations. Comb is in fair supply for this time of year, and not much doing in the same. Movement in dark Amber Comb is particularly slow.

Extracted, White Liquid	6	@	6½
Extracted, Light Amber	4½	@	5½
Extracted, Amber	3¾	@	4¼
Extracted, Dark Amber	3	@	3½
White Comb, 1-frames	11½	@	12½
Amber Comb	9	@	11

Beeswax.

Demand is fair and prevailing values for desirable qualities are being well maintained.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Beef sold at much the same figures as preceding week, but demand was not particularly active and only for best was the market noteworthy for firmness. Veal ruled easier, but demand fair for desirable sizes. Prices for Mutton and Lamb were without appreciable change, stocks proving ample for present needs. Hogs continued in light receipt and went mainly for fresh pork; packers do not care to do much at prices now ruling.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6½@ 7
Beef, 2nd quality	5½@ 6
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain, 140 to 250 lbs	5½@ 5¾
Hogs, large, hard, over 250 pounds	4½@ 4¾
Hogs, small, fat	4¾@ 5
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	8 @ 9
Lamb, ₱ lb	8½@ 9½

Hides, Skins and Tallow.

No. 1 Hides are in fairly active request and are meeting with a firm market. Some grubby Hides are arriving and are not sought after. A shipment of 114,000 lbs. Tallow went forward by sailing vessel for London.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.		Culls.	
Heavy Steers, over 56 lbs	—	@11½	—	@10
Medium Steers, 48 to 56 lbs	—	@10½	—	@ 9½
Light Steers, under 48 lbs	—	@10	—	@ 9
Heavy Cow Hides, over 50 lbs	—	@10	—	@ 9
Light Cow Hides, under 50 lbs	—	@10	—	@ 9
Stags	7	@ 7½	6	@ 6½
Wet Salted Kip	—	@11	—	@10
Wet Salted Veal	11	@11½	10	@10½
Wet Salted Calf	—@	12½	—	@11½
Dry Hides	17½	@18	16½	@17
Dry Kip and Veal, 11 to 16 lbs	—	@15	—	@13
Dry Calf, under 4 lbs	—	@20	—	@18
Pelts, long wool, ₱ skin	1 25	@ 1 75		
Pelts, medium, ₱ skin	90	@ 1 10		
Pelts, short wool, ₱ skin	50@	75		
Pelts, shearling, ₱ skin	15@	40		
Horse Hides, salted, large prime, each	3 00	@——		
Horse Hides, salted, medium	2 50	@——		
Horse Hides, salted, small	1 50	@——		
Horse Hides, dry, large	1 75	@——		
Horse Hides, dry, medium	1 50	@——		
Horse Hides, dry, small	1 00	@——		
Tallow, good quality	4	@4½		
Tallow, poorer grades	2½	@3½		

Bags and Bagging.

The same inactive condition previously noted is prevailing in this market. Quotable values, based on asking figures, are without change.

Bean Bags	$	4¾	@5
Fruit Sacks, cotton		6½	@7½
Fruit Sacks, jute, as to quality		5¾	@7
Grain Bags, Calcutta, 22x36, spot		5¾	@—
Grain Bags, Calcutta, buyer June-July		6	@6⅛
Wool Sacks, 4-lb		32	@—
Wool Sacks, 3¼ lb		30	@—

Poultry.

Arrivals of California poultry were rather light, but receipts of Eastern were of fair proportions, mainly Chickens. Large and fat Hens and full grown Young Roosters without spurs met with a firm market. Turkeys remained scarce and high. Ducks in fine condition sold to fair advantage. Inquiry for Geese was light. Pigeon market was tolerably firm for choice Young, but very quiet for Old.

Turkeys, Dressed, choice, ₱ lb	$ 24	@	26
Turkeys, live gobblers, ₱ lb	20	@	22
Turkeys, live hens ₱ lb	20	@	22
Hens, California, ₱ dozen	4 50	@	5 50
Hens, large	5 50	@	6 50
Roosters, old	4 00	@	4 50
Roosters, young (full-grown)	5 50	@	6 50
Fryers	5 00	@	5 50
Broilers, large	3 50	@	4 00
Broilers, small to medium	2 50	@	3 00
Ducks, old, ₱ dozen	4 50	@	5 50
Ducks, large young, ₱ dozen	6 00	@	7 00
Geese, ₱ pair	2 00	@	2 25
Goslings, ₱ pair	2 00	@	2 25
Pigeons, old, ₱ dozen	1 00	@	1 25
Pigeons, young	2 00	@	2 50

Butter.

With receipts of fresh on the increase, and the demand not very brisk, concessions to buyers were being made rather than miss sales. Considerable butter has been shipped East lately, both held and fresh stock, and while the Eastern market has been on the up grade for some weeks, the returns so far received on this butter have not been in the main encouraging to shippers.

Creamery, extras, ₱ lb	22½	@	23
Creamery, firsts	21	@	21
Creamery, seconds	19	@	20
Dairy, select	21	@	—
Dairy, firsts	19	@	20
Dairy, seconds	17	@	18
Mixed Store	12	@	14

Cheese.

Buyers are not operating very freely at full current figures, but spot supplies are not heavy, and for desirable qualities values are ruling tolerably steady. For a few favorite brands of flats 13c is asked.

California, fancy flat, new	12	@	—
California, good to choice	10½	@	11½
California, fair to good	10	@	10½
California, "Young Americas"	10	@	12½
Eastern	12	@	15

Eggs.

Further weakness has been developed in the market for fresh eggs coming direct from henneries. All the fresh eggs now arriving are showing good quality and many buyers are giving store-gathered stock the preference at the lower figures. Not many cold storage eggs now on the market and these are mainly Eastern.

California, select, large, white and fresh	35	@	—
California, select, irregular color & size	30	@	32½
California, good to choice store	30	@	32
Eastern firsts	24	@	27
Eastern seconds	—	@	—

Vegetables.

There were increased receipts of fresh vegetables from the Southern section, especially of Tomatoes, and market was easier, especially for other than strictly choice to select. Onions, mostly from Oregon, were in more than ample supply for the demand at the prices asked.

Beans, Lima, ₱ lb	—	@	—
Beans, String, ₱ lb	8	@	10
Beans, Wax, ₱ lb	8	@	10
Cabbage, choice garden, ₱ 100 lbs	50	@	60
Egg Plant, Los Angeles, ₱ lb	4	@	7
Garlic, ₱ lb	7	@	8
Mushrooms, ₱ lb	10	@	15
Onions, Yellow Danver, ₱ ctl	2 35	@	2 55
Peas, Green, Los Angeles, ₱ lb	4	@	6
Peppers, Green, ₱ lb	6	@	8
Rhubarb, ₱ box	75	@	1 25
Summer Squash, Los Ang., small bx	60	@	75
Tomatoes, ₱ crate	75	@	1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Receipts of ordinary qualities of River Burbanks were of fairly liberal proportions and for this stock the market inclined against sellers. Choice to fancy Burbanks were not in large supply and were steadily held. Most of the potatoes arriving represent purchases made in the interior by wholesale operators. Sweets were in good supply, but prices were a little better than previous week, the quality also showing some improvement.

Early Rose, ₱ cental	1 00	@	1 20
Salinas Burbanks, ₱ cental	1 10	@	1 50

River Burbanks, ℔ cental	65	@	90
River Reds, ℔ cental	65	@	75
Oregon Burbanks, ℔ cental	1 00	@	1 30
Sweet Potatoes, ℔ cental	75	@	1 00

Fresh Fruits.

Market for Apples showed a moderately firm tone for desirable qualities of most kinds, especially for choice to select table varieties. Stocks were lighter than for some weeks preceding, and demand was good for large and sound fruit of favorite kinds. Fancy Spitzenberg and select Newtown Pippins were quotable up to $1.75 per box. With the holidays over, Lady Apples did not receive much attention and were offering at reduced figures. Persimmons were in too light supply to warrant quoting. Strawberries are practically out, but are expected in quotable quantity from the South in the near future.

Apples, fancy, ℔ 50-box	1 50	@	1 75
Apples, good to choice, 50-lb. bx	90	@	1 25
Apples, fair to good, ℔ box	65	@	90
Apples, Lady, ℔ box	60	@	1 50
Persimmons, ℔ regular box	—	@	—
Strawberries, large, ℔ chest	—	@	—

Dried Fruits.

While the movement is not brisk, fully as much is doing as could be reasonably expected for this time of year, with the light stocks of most kinds now remaining. Peaches are in few hands and are firm at an advance. Apricots are being very steadily held. Tendency on high-grade Pears is to stiffer prices. Apples are steady at quotably unchanged values. In some instances Pitted Plums are offering at moderate declines from recent asking figures. Prunes now unplaced are almost wholly the medium sizes, and these where in prime condition are being steadily held. The ship Europa, sailing the past week, carried 381,084 lbs. Prunes for London. Yesterday's steamer for the Orient took 15,000 lbs. dried fruit assorted.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4	@	4½
Apples, extra choice to fancy, 50-lb boxes.	5½	@	6
Apricots, Moorpark	9	@	11½
Apricots, Royal, good to choice, ℔ lb	7½	@	8½
Apricots, Royal, fancy	9	@	10
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	8½	@	10
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	8	@	10½
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—@—		

Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1¾@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½	@	4½
Apples, quartered	3¼	@	4½
Figs, White, in bulk	2	@	2½
Figs, Black	2½	@	4

Raisins.

Market tends against buyers. Stocks are not heavy, as compared with corresponding date of recent years. Present supplies are principally loose and seeded and are being held with confidence.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3¼	@	3¼c
3-Crown Standard	3¾	@	4 c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—@		4½c
Seedless Sultanas	—@		3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4⅞c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Market was well stocked with Navel Oranges of the higher grades, but standards were not plentiful. The latter brought relatively the best figures, and there was in consequence a narrower range of values. Lemon market showed steadiness, but movement was not brisk, the weather checking trade in this fruit. Choice Limes were in light supply.

Oranges, Navels, ℔ box	1 25	@	2 00
Oranges, Seedlings, ℔ box	75	@	1 00
Oranges, Cal. Tangerines, half box	75	@	1 00
Oranges, Japanese Mandarins, ℔ box	75	@	1 00
Lemons, California, select, ℔ box	2 50	@	2 75
Lemons, California, good to choice	1 75	@	2 25
Lemons, California, fair to good	1 25	@	1 75
Grape Fruit, ℔ box	1 25	@	2 25
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

Almond market is quiet, but stocks are of light volume and not much movement would be necessary to effect a clean-up. Desirable qualities are being steadily held. For good to choice Walnuts the market is firm, with stocks too small to admit of other than small jobbing operations.

Chestnuts, Italian, ℔ lb	8	@	10
Nonpareil Almonds	14	@	17
Ne Plus Ultra Almonds	12	@	14
Languedoc Almonds	9	@	11
Peanuts, fair to prime	6	@	6½
Cal. Walnuts, No. 1 soft shell	13	@	14
Cal. Walnuts, No. 2 soft shell	11	@	12
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

Not much dry wine of last vintage is now in first hands, and market is firm for desirable stock, fairly good to choice being quotable at 14@17c per gallon, some selections being held higher. For one lot of Sonoma wine 15c is wanted there, buyer to furnish puncheons. A round lot of Napa wine is held at 17c there. Sweet wines of last vintage are offering at 27½c per gallon at the wineries. Receipts of wine at San Francisco last week 260,400 gallons, and for previous week 423,550 gallons. The steamer City of Para took 59,877 gallons and 21 cases, mainly for New York. The ship Europa, sailing for London, carried 18,965 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	61,918	2,674,212	3,186,661
Wheat, ctls	29,150	1,912,127	1,325,674
Barley, ctls	95,378	2,332,542	4,416,709
Oats, ctls	7,678	624,544	668,602
Corn, ctls	1,280	118,159	85,075
Rye, ctls	969	36,469	34,213
Beans, sks	6,598	426,319	527,245
Potatoes, sks	33,012	713,819	744,311
Onions, sks	1,643	83,997	99,879
Hay, tons	2,090	106,952	107,061
Wool, bales	208	39,437	33,615
Hops, bales	1,031	31,860	26,813

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	16,572	1,945,620	2,202,180
Wheat, ctls	233	660,585	627,589
Barley, ctls	104,499	1,479,139	3,512,164
Oats, ctls	30,262	47,688	14,868
Corn, ctls	384	59,601	10,999
Beans, sks	146	37,801	21,772
Hay, bales	29,322	120,384	97,409
Wool, lbs	....	830,690	1,748,417
Hops, lbs	356	271,926	458,653
Honey, cases	....	1,443	3,704
Potatoes, pkgs	3,309	56,765	58,342

TO FIGHT PEAR BLIGHT.—Suisun special to Sacramento Bee, Jan. 4: At the meeting of the Board of Supervisors yesterday a large delegation of fruit growers was present and asked that the County Board of Horticultural Commissioners—J. R. Chadbourne, H. G. Boyce and H. C. Blake—be instructed to use all the authority conferred on them by law and make every effort to check the spread of pear blight in this county the coming spring. The commissioners were directed to make a close inspection of all orchards and compel the cutting out and burning of all infected parts of pear trees. The sum of $500 was set apart to meet the expenses of the commissioners.

New Patents.

DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market St., S. F., has official reports of the following U. S. patents issued to Pacific coast inventors:

FOR THE WEEK ENDING DECEMBER 27, 1904.

778,847.—PICTURE EXHIBITOR—I. Anderson, Prescott, Ariz.
778,848.—GOLD SAVING APPARATUS—I. Anderson, Prescott, Ariz.
778,210.—CLOSED END TUBES—Anderson & Argall, San Jose, Cal.
778,628.—BATH HOUSE—J. C. & E. H. Booker, Pasadena, Cal.
778,301.—BIN—M. S. Burdick, Alameda, Cal.
778,443.—OIL BURNER—C. F. Capell, Los Angeles, Cal.
778,633.—PAY ROLL—C. T. Chichester, Placerville, Cal.
778,744.—STAMP AFFIXER—J. P. & S. Farmer, Portland, Or.
778,823.—DOOR SECURER—G. F. Fay, Seattle, Wash.
778,234.—NOSE GUARD—W. D. Fennimore, S. F.
778,777.—ANIMAL TRAP—J. W. Gates, Los Angeles, Cal.
778,577.—OIL BURNER—J. L. Hague, Los Angeles, Cal.
778,312.—SASH LOCK—W. L. Hall, Spokane, Wash.
778,781.—FUEL—G. W. Herbein, S. F.
778,665.—PAPER ROLL PRINTING—G. D. Horton, Snohomish, Wash.
778,666.—CONDUIT—A. J. Hoskins, S. F.
778,682.—WHIP SOCKET—G. E. Kroning, Porterville, Cal.
778,419.—SLIDE VALVE—H. C. Lenderman, Portland, Or.
778,323.—IRRIGATING APPARATUS—J. H. Martin, Riverside, Cal.
778,793.—TROLLEY WHEEL—E. J. McDonald, Los Angeles, Cal.
778,790.—CALCULATOR—A. H. Merrill, Compton, Cal.
778,762.—GARMENT PRESS—W. T. O'Brien, Portland, Or.
778,547.—SEPARATING METALS—L. E. Porter, Camp Rochester, Cal.
778,550.—ELEVATOR LOCK—R. J. Roulo, Los Angeles, Cal.
778,551.—ELEVATOR LOCK—R. J. Roulo, Los Angeles, Cal.
778,462.—PAPER FOLDER—A. E. Sexton, Los Angeles, Cal.
778,463.—BOX NAILING MACHINE—D. Snitjer, Cupertino, Cal.
778,813.—ROLL PAPER PRINTING—F. L. Taylor, Oakland, Cal.
778,521.—PICTURE MATS—F. B. Wheat, Los Angeles, Cal.

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Tubular Separators are regular crowbars—get right under the trouble—pry the mortgage off the farm. How? Gets all the cream—raises the quantity and quality of butter—starts a fortune for the owner. It's a modern separator. The picture shows. Write for catalogue F-131.



THE SHARPLES CO. CHICAGO, ILL. P. M. SHARPLES WEST CHESTER, PA

THE STOCK YARD.

Baby Beef in California.

Mrs. Ethel Adams of Calaveras county gives the Breeder's Gazette some of the experience of a central California rancher, which might be of interest to our readers and perhaps they might get a few ideas also. After many experiments and, of course, the same number of failures, we have learned a few things, writes Mrs. Adams.

This ranch is situated in the eastern part of Calaveras county, with an elevation of about 2600 feet, and runs to the famous Stanislaus river. The climate is very mild, never going below 22° above zero, and then only for a few hours, and always getting to 50° at noon. The summers are hot, but so dry that at 105° it seems cooler and more bearable than in the East at 70°. We have a mixed range stock from registered Shorthorns and Jerseys that produces a fine dairy herd, combining richness with quantity, and very easy to handle. Some years ago we ran a butcher route in connection with the dairy; but lack of ice, length of route and bad bills ended that and we went from retail to wholesale.

While in the butcher business we paid no attention to feeding, killing what was fat and turning the rest on the range until they got fat. After that, getting a permit from the Government in the Stanislaus Reserve, in Alpine county, we began taking the range cattle up 100 miles, with absolutely no feed and not much water for the first 50 miles. The first year we were most successful, lost no cattle and got back in time to sell before having to feed. Next year we lost heavily by poison—parsnip and larkspur—and got back in time to find no market; so we began feeding about fifty head of weaned calves from five to ten months old. Our hay consists of wild hay, meadow, timothy, alfalfa, oat, barley and wheat. Some wiseacre advised feeding barley hay, of which the calves ate for awhile and then began to fall off in feed and looks. We changed hay to meadow and oat; but, although they ate better, they did not gain; so we killed one for our own use and found the barley beards had got under and over the tongue and almost rotted it off. Next we tried turning in green pasture to help out our hay; but, to our surprise, they began to look bad, rough, and would not come in at night—had to be hunted up and driven in—and on killing we found the fat stringy and watery. Now, as we have no cold weather, no high winds, barns that large and small can go in and out as they please, fresh running water that has a temperature of 55° the year around, no snow, it seemed queer that the calves should decrease in weight, instead of holding their own; so we tried it again, always with weaners, and found they needed no exercise, no green feed, regular feeding twice a day and free access to the springs.

Last year I fed a number on rolled barley—the only grain we ever use for horses and cattle—with a little bran, and found that five pounds of feed per day made an increase of three pounds in weight; but the price of grain—$30 per ton for barley and $29 for bran—put a stop to that. Corn was out of sight and ground oats ditto.

We again tried an experiment, leaving about fifteen calves at the ranch about three weeks old and taking a number of others about the same age to the mountains, where their range is from 6000 to 10,000 feet altitude, and this fall found out that, in spite of the long, hard journey and short season—eight weeks at the outside—the mountain calves outweighed the ranch calves by about 150 pounds apiece. The ranch calves had as good mothers, running water, clover, timothy and wild grasses up to their knees and oat stubble as they pleased to run in. I may say that it is a week's hard drive each way to our reserve.

Another disadvantage here is that buyers will not pay for quality—a beef is a beef and so much a pound, whether range-fed or grain and hay-fed; one costs nothing and the other too much for any profit. The first are only fit for sale about four months of the year, and the feeders can only be fattened at a small profit when brought in fat and kept right up.

The loss on range cattle is large through cattle thieves, black leg and falling over bluffs, which outweight the cheap pasture, so it is about a standoff. I have now two lots of feeders—yearlings and full-grown; I have been feeding exactly the same oat hay, and, as we have hay scales, weigh them once a week. The aged stock after the first week, in which all gained nearly fifty pounds, have about held their own, while the yearlings are gaining exactly twenty pounds each—very little, I presume, compared with some of your Eastern cattle—but that is the best we can do here.

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One Bay Mare, 16.1 hands; weight	1400 pounds
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One Black Gelding, 16.2 hands; weight	1330 pounds
One Bay Gelding, 16.1 hands; weight	1300 pounds

These horses are putting on weight every day. They are at the Baywood Stud Stables, San Mateo, Cal., where they may be seen (in harness if desired) at any time and on any day.

Southern Pacific trains from Third and Townsend streets leave at convenient hours for San Mateo. Electric cars from Market and Fifth streets to San Mateo every thirty minutes. The Baywood Stud Stables are ten minutes walk from railway station or terminus of electric cars.

For full particulars address

WALTER SEALY,
Manager The Baywood Stud,
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There are, besides, some ten head of smaller and lighter horses by the same sire, all five years old, suitable for carriage work, single or double. This fine lot can also be seen at the Baywood Stud Stables (in harness if desired).

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Percheron, Belgian and Coach Stallions.

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Prize winning Berkshires.
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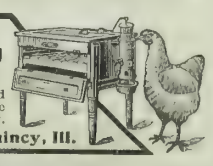
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Send for samples.

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18	"	"	12.50	"	"
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30	"	"	17.50	"	"

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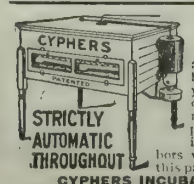
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FRUIT MARKETING.

A New Raisin Proposition.

Report of Special Committee furnished for publication in the PACIFIC RURAL PRESS.

The undersigned, special committee appointed at the meeting of raisin growers held in Fresno on Thursday, the 29th day of December, 1904, respectfully make the following report:

Your committee advise that a corporation be formed under the laws of the State of Nevada, having a capital stock of two million (2,000,000) dollars, divided into two million (2,000,000) shares of the par value of one (1) dollar each, with provision for hereafter increasing the capital if required; that such corporation have corporate powers to act as agent or factor for raisin growers, and also to buy and sell, and otherwise deal in raisins in its own behalf; that it also have power to engage in the business of packing and seeding raisins, acquiring, holding and operating packing houses, seeding plants and warehouses; and that it have such other general powers as are usual in such cases.

That its board of directors consist of thirty-three members, of whom twenty-six shall be nominated from districts to be apportioned as nearly as practicable according to representation of shareholders; the remaining seven shall be elected at large. Provision shall be made in the articles of incorporation or by-laws that directors shall have voting power in proportion to the shareholders whom they represent in manner similar to that obtaining at meetings of stockholders.

The general business of the corporation to be conducted by a manager acting subject to the control of an executive committee to be chosen from the board of directors.

The articles of incorporation and the by-laws shall contain a provision that shares of stock shall not be transferred without the consent and approval of the board of directors by a vote representing at least three-fourths of all the votes.

Your committee advise that for immediate purposes subscription lists be opened forthwith, and that each producer of raisins, whether as owner or as tenant, be requested to subscribe for one share of the company's stock for each acre of vineyard owned or operated by him and to pay therefore one (1) dollar per share in cash.

That the corporation enter into agreements with the growers substantially in the form heretofore used by the California Raisin Growers' Association conditioned for vesting in the corporation an undivided 5% of the crop; such agreements to be for a term of three (3) years, and to contain a provision for releasing the grower in case of a bona fide sale by him of his property. Such agreements also to contain a provision that in each year there shall be deducted by the corporation one-half cent per pound of raisins delivered, to be applied in payment for fully paid shares of the capital stock of the corporation to be issued to such amount.

By-laws to be adopted for the government of the corporation; the power to adopt and amend by-laws to be vested in the board of directors.

The corporation to have power to issue bonds and secure the payment of the same upon all of its property, but your committee deem it inadvisable to issue bonds to its shareholders, or otherwise than in acquiring property in the permanent form of warehouses, packing houses or seeding plants.

Minor details of the scheme and the conduct of the business shall be considered and disposed of by the board of directors as occasion arises.

Your committee have confidence that all that is required to insure the success of this movement is the faithful support and co-operation of the raisin growers themselves. Your committee recommend that all subscriptions for shares be conditioned upon there being obtained on or before the 28th day of February next, the co-operation of growers representing at least thirty-five thousand acres of raisin vineyard, and that if such co-operation and support be not obtained by such time that the entire scheme be abandoned.

Respectfully submitted—W. S. Goodfellow, M. Theo Kearney, M. F. Tarpey, W. A. Long, W. B. Nichols, V. H. M. MacLymont, C. M. Blowers.

THE Pacific U. S. Fence Co. of San Francisco, Cal., manufacturers of the well-known U. S. farm, field and hog wire fence, have just declared their second annual dividend of 10%. This fence has met with great success in California, and, as the company is run on the co-operative plan, it has made money for its stockholders each year. The fence manufactured by this company is made of extremely heavy wire, giving it great strength. The makers state that it was awarded first prize at the Central California fair in 1903 and 1904. The record made by this compny shows the success and benefit of co-operation. The members are not only getting good returns in the way of dividends, but each member buys his own fencing at wholesale prices, which, of course, amounts to a big saving each year.

A Symphony in Gray.

In the 1905 Calendar of N. W. Ayer & Son, the Philadelphia Advertising Agents, is worked out a color scheme in grays and white so harmonious as to merit the above title. These calendars have enjoyed a steady sale for years at twenty-five cents each; for this sum, which barely covers cost and postage, the 1905 edition may be had as long as it lasts.

Seeds, Plants, Etc.

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In Variety.
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WRITE FOR PRICES,
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Rooted Grape Vines and Cuttings in Quantity.
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FRUIT AND ORNAMENTAL TREES.
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Also fine two-year Santa Barbara Soft Shell, grown from carefully hand-selected seed.
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80,000 APPLE TREES in 42 Varieties; $6 per 100; $55 per 1000. 3½ to 5 ft. Extra well rooted. Clean. Grafted on whole roots and free from all pests. Also an extra fine stock of Peaches, Prunes, Pears and other deciduous fruit trees
Write for price list. A. F. SCHEIDECKER, Prop. Pleasant View Nursery, Sebastopol, Cal.

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Loganberry, Mammoth and Himalaya Giant Blackberry Tips.
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Write for Price List to
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Arizona Everbearing Strawberry Plants
FOR SALE CHEAP if ordered in the next 30 days. Every plant guaranteed to be first class. Write for prices. F. P. BALDOSSER, Covina, Cal.

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Lob Ingir SMYRNA FIG.
This is the best type for drying purposes.
We sell good 3-5 ft. trees at $15 per 100.
Caprig Fig trees at same price.
Maywood Colony Nursery,
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NAPA VALLEY NURSERY CO.
INCORPORATED 1902.
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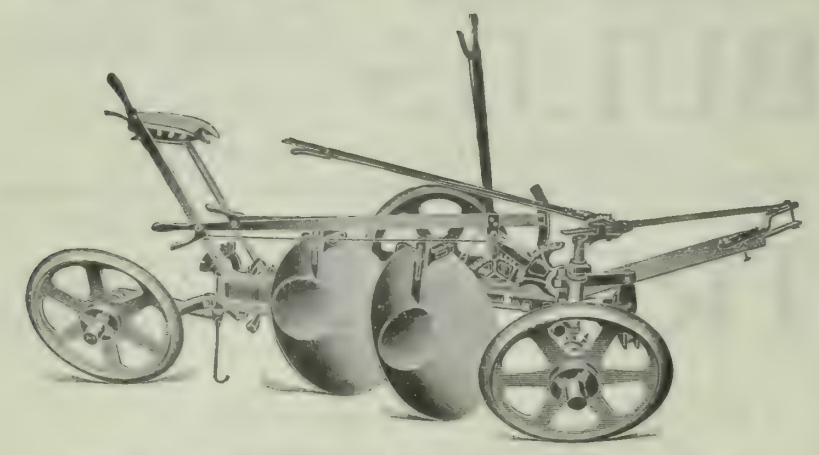
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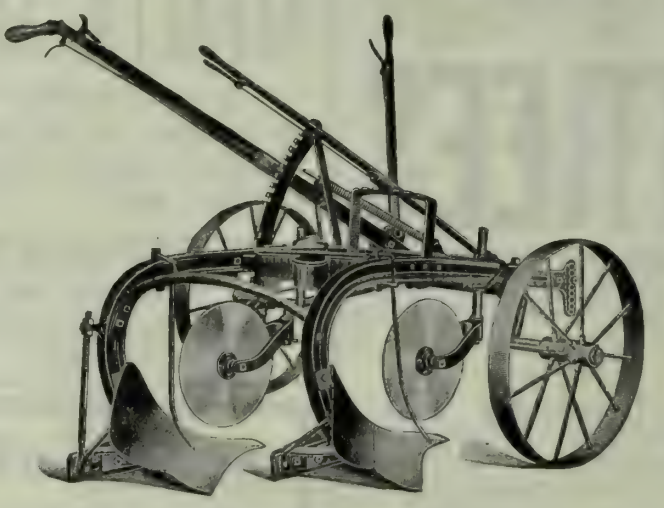
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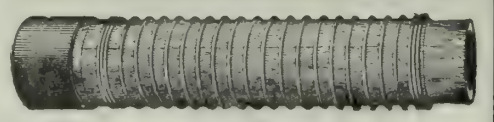
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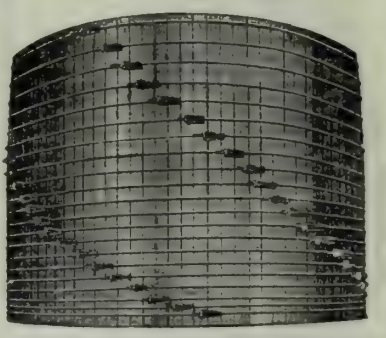
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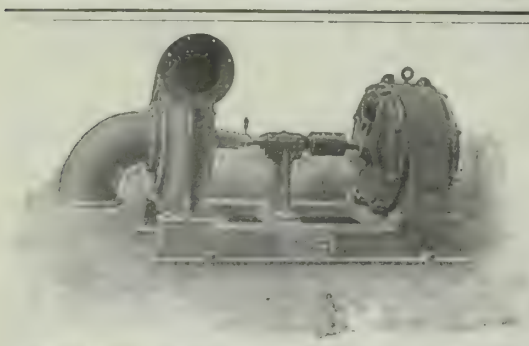


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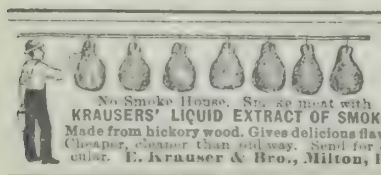
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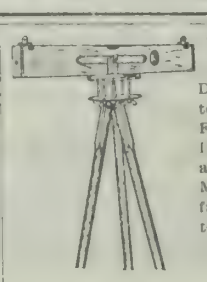
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Vol. LXIX. No. 3. SAN FRANCISCO, SATURDAY, JANUARY 21, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

A Grand View in the Redwood Forest.

We have from time to time given excellent views of the redwood forest in the coast region of central California, extending from Santa Cruz county northward to Humboldt county, but none, perhaps, more impressive than the view on this page engraved from an excellent photograph secured by Mrs. W. A. Turner of Guerneville. In our issue of December 3d we had a fine picture of a single mammoth tree in Humboldt county, and that picture contrasts sharply with this, because it shows the natural undergrowth of ferns and other plants and shrubs which accompany the redwood in the wild forest, while the view on this page shows the trees on a clean forest floor, such as is secured by clearing for a recreation ground. The picture is in fact taken in the "Bohemia Grove," a tract purchased some years ago by the Bohemian Club of San Francisco, and used by them for their unique annual festivals of music, dramatic art and sociality which are among the great summer events of metropolitan recreation and diversion. The forest recreations of the Bohemian Club are, in fact, becoming famous around the world, and their association with these grand trees is not the least of their uniqueness and interest. Outside of Bohemia Grove there is another redwood forest and many places where summer resort affairs flourish and delight the multitude, and as the forest encloses considerable distances of the fine stream known as Russian river, camping, fishing, etc., in the region are becoming very popular.

Though clearing the redwood grove adds to its availability as a recreation ground and excludes ground fires, which spread through the low growth, the clearing is not essential to the safety of the trees, as was shown with some detail in our issue of December 3. Though fires may rage through the undergrowth, the trees are not destroyed, though the lower bark may be often sadly disfigured by surface burning. But this indestructibility of the redwood and its resistance to decay makes the clearing of redwood lands difficult and expensive, while at the same time it renders the forest self-perpetuating, in spite of even wasteful lumbering. Second growth of redwood from the stump is clearly seen to be of immense age. More recent second growths show how the older instances came about. The primeval trees were of enormous size and the growth from suckers around their rooting, therefore, described a circle of great diameter. This succession of grand trees around a common center forms an enclosure of considerable area, and many such an area serves as a retired recreation retreat or as an auditorium for forest oratory, or sermonizing, or dancing, as the tastes of the visitors may incline. As there are very large circular enclosures, so there are smaller ones, marking the sites of smaller central stumps, and the second growth is so rapid that not many years are required to furnish forth a summer lounging place or a dining room for the adjacent habitation. These facts argue the difficulty of clearing farms in the redwood region, but of that we shall speak more in detail upon a later occasion.



View in Bohemia Grove of Redwoods, Near Guerneville, Sonoma County, Cal.

These redwoods should not be confused with the Sequoia gigantea, or "Big trees" of California, although the former are also of the same family—Sequoia semper virens. These two varieties are the only kinds known. The semper virens is found in the Coast Range only, and the Sequoia gigantea in the Sierra only, occurring in a series of isolated groves from Calaveras county on the north to Tulare county on the south. These mammoth trees are only equaled in their great height by some varieties of the eucalyptus of Australia.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, JANUARY 21, 1905.

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The Week.

Warm weather with rains of varying weight, indicated by the weather report upon the opposite page, have continued during half of the week and as we go to press (on Wednesday) have a fair show for continuance. The whole State is covered, and it is still early enough for the grandest results to be most widely distributed. In some parts of the State the rainfall has already passed the normal for the date, and the coming has been with most desirable gentleness and distribution. The Legislature is at Sacramento, which is occasion enough for a wet winter, for, during the last quarter of a century or more, it has been usual for the weather to make special exhibitions of generosity with water whenever the Solons assembled at the capital to promote irrigation propositions. This year, as the Legislature has the problem of improving the great rivers, it is fitting that the streams should do a little demonstration in their own interest.

Wheat is about as last week here, possibly on the whole a little better, for, though Chicago has been more agile in fluctuations than San Francisco, our end of the line has become stiffer on futures and firmer for choice spot. One ship has gone out with wheat and barley—mostly the latter. No charters have been reported. Barley has been firm and higher, closing, however, a little easy. Beans are unchanged and firm, except that Limas are easy as before. Bran and middlings are steady. Hay is weak, except gilt edged wheat, which is looking up a little. Meats are quiet, and firm for the best hogs which are going for fresh meat. Butter is firmer through a shipping demand which may, however, be only temporary. Cheese is steady. Eggs are lower, though supplies are not heavy, because lower figures are expected. Poultry is easier, though choice young stock sells well; Eastern supplies are heavy. Potatoes are firm and choice in good demand, both for consumption and seed. Onions are higher and receipts light. Apples are in better supply, but choice bring the same quotations. Oranges meet rather a slow demand; brighter weather would help them. Choice Navels are relatively in larger supply than standard and peddlers have to hunt supplies. Lemons are quiet and barely steady and limes are higher. There is not much doing in dried fruit, but the tone is healthy. Large shipments of dried fruits and raisins have gone to Australia and New Zealand. Nuts are quiet and honey is not doing much, though high grade is in light supply and firm. Hops are stiffly held. Wool is strong in all distant markets; the only trade here is on the sheep's back.

Mr. Albert L. Lindley, the new secretary of the State Board of Agriculture, is wisely starting to produce something better in the way of agricultural statistics of California than has been available hitherto, and we hope he will succeed, for all interested are continually in need of recent and accurate statements of the facts of production. But we doubt if Mr. Lindley will reach the results most desired by the method he proposes. He has drafted a bill providing for the collection of these statistics by and through the Boards of Supervisors in each county and their return to him so that the whole can be placed in an annual report in such a manner that each county's products can be shown correctly, and in a summary the entire products of the State will be correctly shown. The weak place in the plan, it seems to us, lies in charging the county boards of supervisors with it. They are as good a group of men as can be chosen for public duties in their line, probably, but very few of them know anything about statistical work, and, with the best intention in the world, may secure a job lot of figures from some one with influence enough to secure their favor, or they will merely take the county assessor's figures, drawn under minimizing influences. The first recourse will secure a lot of broad guesses from boom authorities—the latter will get a frost-bitten compilation of records previously shortened to suit tax payers. What is needed is accurate statistical work by people who know how to do it, and will pursue the avenues of information to their ultimate sources, with the thirst for fullness and accuracy which actuates the thorough statistician.

Agricultural propositions, judging by the daily reports, are descending upon the Legislature in heavy showers. The State was never so wide awake on the subjects of agricultural science and education, and nearly every one wants them in some form or other. Naturally, the popular cry is for a fine open air establishment which shall show the world that California teaches agriculture by actual demonstration, which is certainly the most approved and most natural way, and for which all the best universities are being generously equipped. It is to be expected that this proposition should be popular; it is tangible, real and reasonable. The State began this undertaking anew in the establishment of the California Polytechnic School at San Luis Obispo, which has already tripled the attendance within a year and needs fuller accommodations and equipment at once. A thoroughly good, adequate and well equipped farm is also most urgently needed in order that the Agricultural College of the State University may meet the rapidly multiplying demand on the practical side, and this claim seems to be very popular at Sacramento. But these desirable features should not obscure the other needs of agriculture at the University, because California absolutely requires the pursuit of the highest branches of agricultural science, both in research and instruction, and is manifesting the demand by an enrollment of pupils altogether beyond the facilities at Berkeley to handle them. These various needs of the State should be properly correlated by the Legislature, as we believe they will be.

Governor Pardee has done what Governors do not often do and that is to turn down a chance to make appointments. The people leading in river improvement advised that the Legislature should provide for a small special commission of eminent citizens, who should proceed to Washington at the expense of the State and urge Congress to take a hand in river improvement. It was not presumed that the commissioners would receive pay, except for their expenses, or that their service would be required for a long period, the main object being to attract whatever additional attention such a dignified commission might secure. When the project was mentioned to the Governor he objected to the arrangement and claimed that the State officers who are engaged in the work, and are familiar with its details, should go, if any one is needed to give information to Congress. That proposition seems more rational, but the Governor threw away chances to deal out favors to spectacular people who could reciprocate with a large bunch of influence.

QUERIES AND REPLIES.

Conditions Affecting the Growth of Wheat.

TO THE EDITOR:—I am pursuing an investigation of the physical and economic conditions controlling the cultivation of wheat. To that end the results of researches in those districts near a margin of cultivation are indispensable, but are not easily obtained in London. I therefore venture to address you in the hope that you may be able to assist investigation by letting me have some data upon the subject. The matters upon which I am especially desirous of obtaining information are the following: (a) The relation between temperature conditions and the growth of wheat. (b) The minimum rainfall necessary during the growing period. (c) The relations between the soils of the region and wheat cultivation. (d) The special conditions which appear to determine the margin of cultivation in the neighborhood.

Give any particulars as to methods of cultivation in the district with reference to conservation of previous rainfall. All information along these lines will be thankfully received.—STATISTICIAN, London, England.

California has such varied conditions of temperature and rainfall and they are so diversely related to the growth of wheat that it would occupy very much time in the preparation of anything which would be at all satisfactory. We may say, however, briefly that we have no temperatures which interfere with the growth of wheat which is sown at different times from September to February and matures its crop during the month of May. The minimum rainfall which will mature a crop of wheat, if it is properly distributed through the season, and particularly if there is a good rain after March 1st, is about 10 inches. Wheat may be safely sown early, and it will mature earlier on the light loams of the plains than on the heavier soils of the river bottoms and of the valleys near the coast. The special condition which seems to rule in determining the area of cultivation in any neighborhood is whether some other crop cannot be more profitably grown. There are no sharp changes in the temperature or soil character which limit the area, because wheat seems to meet no temperatures too low during the California winter and it grows profitably on all arable soils, if there is moisture enough present.

We have no clear distinction between spring and winter wheat in California. Probably all our commercial product would be called winter wheat because there is more likelihood of success with early sowing and a long growing season. Although in some localities, owing to excessive rainfall and to the freedom from high temperatures which come with proximity to the coast, wheat can be sown as late as February and still mature before the dry season becomes too oppressive. There are no particular kinds of wheat chosen for this cropping. In the interior there is, however, preference given to the kind of wheat called Sonora in parts of the State where the growing season is shortened by the increase of temperature and the failure of rainfall in April. Rain is needed at short intervals during the life of the plant, until the head is well formed. The plant will, however, proceed with its growth slowly and will mature its seed properly providing there is not a sharp lack of moisture near the close, as previously mentioned. Conservation of previous rainfall by the soil is quite widely undertaken in the system of bare-fallowing which prevails. The land is plowed and harrowed several times during this bare-fallow year and the rainfall of that year is largely conserved thereby. Adding this to the rainfall of the year of growth, a satisfactory crop is rendered more sure; consequently, this bare-fallowing enters very largely into our present practice of wheat growing.

Dry Land Grasses.

TO THE EDITOR:—Please give me full information relative to the successful growth of grasses or forage plants for this climate where water cannot be had to irrigate with.—FARMER, Los Angeles.

It is not possible to answer satisfactorily, because so far as our observation and experiments go there are no grasses or forage plants, except those native to desert situations, which will maintain their life without irrigation upon the drier lands of California. For this reason it is inevitable that a considerable part of the area of the State must be used only for pasturage during the rainy season until greater supplies and wider distribution of irrigation water is secured. Many of the Eastern and European grasses

will grow during the rainy season, but will be killed out by the following drouth, so that it is not worth while to undertake to get a perennial plant established under such conditions and the land must be allowed to go bare during the greater part of the dry season. The plants which seem to yield best results during the rainy season, in addition to those which are already widely established, are rye, which makes a good deal of winter feeding; sometimes field peas can be sown to advantage; sometimes they do well in connection with oats, and of course barley is often used for the same purpose, but as for getting these dry unirrigated lands put to permanent grass the proposition is impracticable with our present knowledge.

Grapes and Asparagus.

TO THE EDITOR:—I desire to plant some table grapes, but am afraid of the Anaheim disease. Can you tell me if by grafting, say Cornichon, on to resistant stock I can guard against this disease? If the Cornichon is not a good grape for grafting what kind is the best? Also I want to set out some asparagus. Can you tell me the best variety to get, where to get it and modus operandi? Possibly you have some treatise on the subject that you could send me.—GROWER, Orange county.

We cannot give you assurances as to what stocks are resistant to the Anaheim disease. We know that some of the vines which are resistant to phylloxera are not resistant to the Anaheim disease. The stock, however, which seem to be most resistant to the latter is the Lenoir, and Professor N. B. Pierce of Santa Ana, who has continuously investigated the disease for the United States Department of Agriculture is now conducting extensive experiments with the Lenoir. He is the best authority on this subject, and as he is located very near to you, you may get very valuable suggestions from him. So far as our observations go, the Cornichon grafts readily upon other stock, and, so far as that goes, your proposition would be all right. How long, however, the Cornichon would last in the face of the Anaheim disease, even upon the Lenoir stock, we do not know. As for growing asparagus, the varieties which are most largely grown commercially are Conover's Colossal and Barr's Mammoth. The Palmetto is apt to be rather earlier than Conover's and is being somewhat widely planted also. As to the method in which asparagus is planted and grown, details are too extensive for treatment in this place. They are given in our book on "California Vegetables."

Brown Spots on Orange Leaves.

TO THE EDITOR:—I enclose a dead orange leaf which came from Folsom. I have not the means of determining whether the cause and the dark brown spots have any relation.—M. D. H., Woodland.

The orange leaf has been subjected to careful examination. This appearance has also been studied before, because it is quite common and one can almost always find a few such leaves on orange trees. It is probably not a disease, but is related to the natural death of the leaf. The deposit seems to consist of a conglomeration of the gummy matter of the leaf which exudes as the leaf dies, and if this is true it cannot be considered a disease, nor is it necessary to undertake any treatment. Of course, the death of the leaf may be untimely owing to unfavorable weather conditions or otherwise, and the exudation appears to be an accompaniment of the dying and not the cause of it.

Bamboo Growing.

TO THE EDITOR:—I wish to grow bamboos near a creek in the foothills of the Santa Clara valley. It is bottom land and always moist. Is there danger of bamboo spreading and becoming a weed? What kinds of bamboo do you recommend?—ENQUIRER, San Jose.

The place which you describe would seem to be excellently adapted to the growth of bamboos. Of varieties available we should consider the mitis and nigra as desirable; and we should also want the vulgaris. You would then have secured canes of different sizes and aspect which would be quite desirable in any effort to turn the product to commercial account. According to the descriptions you ought to get the largest poles from the vulgaris, but somehow or other there is great confusion in the nomenclature and one does not always secure what he desires. There is no danger of the bamboo spreading as a weed, although the habit of some varieties is to extend for some distance by underground roots, and this is the way bamboo forests are made. There is no danger of extension beyond the limits which you wish the growth to occupy. In gardens, however, bamboos are sometimes troublesome through coming up in beds and lawns where they are not desired, but there is no free spreading by means of seeds, which are seldom produced.

Growth of the Northern Spy.

TO THE EDITOR:—As I am thinking of putting out about three acres of apples I would like to know if the Northern Spy stock is good for our climate. Some say the trees grafted on said Northern Spy stock are terribly slow growers, and a seedling stock is much preferred for planting here, regardless of the woolly aphis. Will you or some reader advise me what is best to do?—SUBSCRIBER, Healdsburg.

This is a very important question and we cannot answer it for lack of observation in your locality. Will some reader who has apples on Northern Spy stock write us of their growth as compared with those on the common seedling roots? Our observation of the Spy elsewhere is that it is a good, strong, upright grower, though rather shy at bearing, but we cannot say for the behavior of the root except that its very large use for years in Australia and New Zealand speaks in its favor.

Eastern Grapes in California.

TO THE EDITOR:—As a boy in Ohio, I well remember the Concord, Isabella and, best of all, the delicious little Delaware grape. While I have sometimes found the Concord or Isabella on sale at fruit stands here, I've never seen the Delaware. I have been advised to plant a few grapes at my little place at Larkspur, as they will grow without irrigation. Will the Delaware grow here? If so, I will order cuttings (if that is what is used) from the nearest point—perhaps Denver—as express charges would be less.—SUBURBAN, Marin county.

Although the Concord and Isabella and other Eastern grapes do not grow as well in California as do the vinifera species, which constitute our chief product, it is possible, especially near the coast, to get these Eastern grapes to bear satisfactorily enough to make the effort worth while. The Concord and Isabella, according to our observation, are more likely to succeed than the Delaware. You can get cuttings or rooted vines of all these varieties from our California nurserymen.

Fence Posts, Fuel and Tree Stocks.

TO THE EDITOR:—What is the best tree to plant in this locality for fence posts? Also, which is the best for firewood? Are eucalypt seeds usually planted in hot beds? Do peaches, plums and apricots do well on almond stock when planted in sandy ground?—W. G. H., Turlock.

The locust and the catalpa are good for posts. The eucalyptus has less durability for such a purpose, but it is hard to beat for fuel. Seedlings can be grown in boxes of sandy loam with some shelter from frost and sun. It is not necessary to use a hot bed. Peaches and plums or prunes do well on almond stock, but apricots are apt to break off even after attaining considerable size. You work the peach on the almond and then put the apricot on the peach, if you are willing to go to the trouble of such double working.

Plants for Alkali and Wet Land.

TO THE EDITOR:—Has anyone had experience with salt bush on salt grass land? Shall I start it from seed? Also on land adjoining that is too wet for winter plowing, what shall I grow for stock feed—Bermuda grass not wanted?—NOVICE, Woodland.

Salt brush will grow on land too alkaline for anything but salt grass and you can get a catch of it by scattering the seed at the beginning of the rainy season. Sown late, it does not do so well and it rots if covered much at any time. On your wet land, Australian rye grass put in early in the fall, before the land becomes too wet to plow, will give you good winter pasturage.

Tent Caterpillar Eggs.

TO THE EDITOR:—I find two kinds of eggs encircling the twigs on my peach trees; one cluster is covered with gum and smooth, the other is uncovered and shows the eggs set close together around the twigs.—GROWER, Healdsburg.

The eggs are of the two species of chisiocampa or tent caterpillar—so called because the caterpillars spin a tent or web and retreat to it in large bunches at certain times of the day. These caterpillars destroy the leaves not only of the fruit trees, but of forest trees also. All these egg clusters should be clipped off while pruning and the eggs will probably perish or be destroyed by cultivation before they can hatch in the early summer. If you are very careful about such things, gather the clusters and burn them.

Not Necessary to Dry Her.

TO THE EDITOR:—I have a Jersey cow that will be fresh about March 1st. She is now giving one and a half gallon of milk per day. When and how would you advise me to dry her up and how much longer can I use the milk?—OWNER, Orangevale.

It is not necessary to dry her up. Do not overfeed. After awhile you may milk once a day perhaps. The milk will be all right until calving if the cow keeps in good health. Some cows are such persistent milkers that you are likely to do more harm than good by great efforts to stop the milk flow.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 16, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Warm and cloudy weather prevailed most of the week, with frequent rains, which were quite heavy in the northern districts and accompanied by snow in the mountains. The continued rains are causing some apprehension in the districts flooded by high water last season, especially where the levees were imperfectly repaired, and it is probable some action will soon be taken by the State authorities to guard against future losses. Farm work has been somewhat retarded by the rain, but pruning is progressing in vineyards and orchards. Grain and feed are in excellent condition and making rapid growth.

Coast and Bay Sections.

The cool and frosty weather at the beginning of the week was followed by high temperature and heavy rain in nearly all sections. At Healdsburg the precipitation for thirty-six hours was 5.25 inches, and some damage was done by high water. The rainfall was lighter in the southern districts, but was ample for present purposes. Plowing and seeding are progressing, except in a few places where the soil is too wet. Grain is making rapid growth and looks strong and healthy. Pasturage is plentiful in all sections and cattle are in good condition. Frosts have caused no material damage.

San Joaquin Valley.

The weather during the past week was generally cloudy, with frequent foggy mornings, and showers in the first part of the week and again Sunday and Sunday night. These conditions have been very beneficial to all growing crops and favorable for plowing and seeding. A large acreage will be sown to grain. Early sown grain is making good growth. Green feed is plentiful and stock are healthy and in good condition. Pruning and cultivating orchards and vineyards are progressing. Heavy frost occurred generally on the 12th, but no damage is reported. A large and excellent crop of oranges has been harvested.

Southern California.

Warm and cloudy weather prevailed most of the week, with frequent heavy rains. The rainfall at San Diego for eighteen days ending on the 14th was 3.74 inches, and other sections probably have received as much more. The soil is in good condition and farm work is progressing rapidly. Early sown grain and wild oats are up and making good progress. Prospects for full crops are much better than at this time last year. Range grass is becoming plentiful and stock are improving. Orange picking has been delayed by the rain, but the fruit has not been injured.

LOS ANGELES SUMMARY.—Farming operations are progressing with vigor since general well-distributed rains. Range feed is growing nicely and stock are doing better. Early sown grain is coming up.

EUREKA SUMMARY.—The weather for the past week was cloudy; moderately warm. Farmers continue plowing and seeding spring grain. Oats and grass in excellent condition and growing rapidly. Outlook for crops was never better at this season of the year.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 18, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	1.00	18.37	23.21	22 74	62	38
Red Bluff	2 60	17 58	13 29	14.14	58	30
Sacramento	0.86	10.52	5.02	9 82	62	34
San Francisco	0.85	11.41	6 90	12.49	62	42
Fresno	0 20	6 41	1 38	4.29	66	34
Independence	T	0 67	0.42	2 26	56	22
San Luis Obispo	0.46	7.19	1 68	10.32	70	36
Los Angeles	0.56	5 06	0 57	8.16	70	38
San Diego	0.74	4.67	0.43	3.42	72	50
Yuma	0.18	1.87	0.66	1.89	68	38

HORTICULTURE.

Hardpan in Orchards.

From a Paper by Mr. J. H. Reed of Riverside at the University Farmers' Institute at Santa Barbara.

The most common cause of the hardpan which we have most to deal with, and which will claim our principal attention in this discussion, is that of hardening by the drying process.

The Root Bed.—To understand clearly the effect of this hardpan upon the growing fruiting tree, we must have in mind a definite notion of how the tree takes its substance, and the conditions modifying the process. If we stop to think at all about it, we usually think of the tree thrusting roots into the ground to indefinite depths, in a miscellaneous way; while, in fact, the roots distribute themselves in a most methodical manner, with reference to securing the most and best food for the tree. While a few leaders reach well down into the earth, the large proportion arrange themselves near the surface, for reasons easily understood. Probably 90% of the feeding roots of the orange tree are found within 18 to 24 inches of the surface. A striking example of this tendency to seek the surface soil attracted my attention a few days ago. Preparing a bed of bulbs on a table land, I found orange roots at a depth of 8 inches. These roots had made their way from trees on a terrace some 6 or 7 feet below, and considerable distance away, and were spreading their feeding roots in that richer surface soil. Much is said about forcing deep rooting. Forcing down the root bed enough for ample surface protection is necessary. But, since the aerated soil, best native, and all applied fertility, are comparatively near the surface, there will be found the roots which do the principal business for the orange tree.

Since the rootlets take their food only in fluid form, the surrounding soil must carry sufficient moisture to hold the elements of fertility in constant solution, or the feeding is interrupted. And, if the earth immediately surrounding the rootlets remains dry any considerable time, the delicate hair-like appendages, through which the food is taken, dry up and must be renewed after the moisture comes again before the feeding can go on.

Cause of Artificial Hardpan.—If the surface layer of 6 or 8 inches, which is supposed to be kept mellow by cultivation, should remain unmoved at all after irrigation, we would expect it to become hard as it dried out, and this drying hardening process would go on to increased depth till water was again applied, and then the water would penetrate the hard surface but slowly. If this application of water should be repeated at intervals without stirring the surface earth in the meantime, we would have hardpan surface and the water would finally flood off from instead of being taken into the ground.

Now if the upper few inches should be stirred but imperfectly or not to a sufficient depth, the drying hardening process would yet go on in the stratum immediately below, in a lesser degree than it did at the surface but as certainly, till water was again applied. You readily see that if the substratum is allowed to become dried and hard, it will not only take more water to saturate it at the next irrigation, but, since water percolates faster in moist soil, it will take it in less readily than if it had remained in a fairly moist condition from the former irrigation, and more water remains in the surface stratum, where it is not wanted. And, because of this substratum being less well saturated, unless better protected, it dries out and hardens the more before the next irrigation, and this process continued results in the more or less well established, troublesome layer, which we call hardpan.

Prevention.—Under better treatment of water and soil, especially where the soil is less susceptible to the hardening process, the hard layer does not reach a stage to be properly called hardpan. But, as the object of the orchardist should be to keep the root bed in a moist condition continuously, this discussion is generally pertinent. What makes the existence of this dry hardpan stratum the more serious is that it is found at just the right depth to encase the largest amount of feeding roots.

Now, knowing the cause of this troublesome obstruction, can it be prevented? Most certainly. You will find one orchard dwindling and unsatisfactory, because its roots are encased, if not in real hardpan, in hard, dry soil, much of the time. Adjoining is another bright and thrifty, because the root bed is in favorable condition all the time. To prevent hardpan is simply to keep this stratum sufficiently moist to prevent hardening. If you admit this, as I think most of you will, the problem is reduced to the best manner of putting in and retaining this moisture.

But, before entering on the old ground, I want to speak of a factor which has been less discussed, the importance of which I do not think is fully appreciated. Underlying a large portion of our orchards, we have a subsoil of considerable depth. If this bed of soil several feet thick, immediately under the root stratum proper, is kept saturated, it will not only encourage deep-going roots, but will render a most important service in helping retain the desirable equilibrium of moisture in the root bed itself between irrigations.

This draft from the lower reservoir is considerable, but is readily made up from the irrigations, by the water passing through the yet moist root bed. This reservoir should be filled, so far as possible, by covering the rainfall, and running irrigating water in winter, when the root bed does not need much, if any.

Those who have not practiced keeping the surface in best condition, for taking in the winter rainfall and utilizing extra irrigation water, will be surprised to find how much this stored supply will help when the drying days come.

But, of course, the root bed must mainly depend on the regular irrigations for its moisture, and how to best get the water down to it most thoroughly and economically and hold and keep it there when once down is the most constantly important problem of the orchardist.

Applying Water.—To those who have practiced it, it seems amazingly strange that the methods of placing water as near as possible to the root bed, by deep furrows, should be of slow growth in general practice. The amount of expensive water evaporated from wide shallow furrows, added to the needless deposit in the surface stratum, to go into the air later on, makes up an enormous wastage that may be largely prevented. Yet, every day during the long summer, you see this wastage going on over thousands of acres, but this direct money loss in water is a minor part of the real damage. A good irrigation is pronounced, because a wet surface is produced; but really the root bed has been robbed of the moisture absolutely required to keep trees vigorous and develop good fruit.

How deep should the furrows be? To the upper part of the root bed. That is a little deeper than the cultivation or the depth of the annual plowing. The needed depth of the protecting pulverized covering varies according to soil conditions, but it should be sufficient to prevent evaporation from the upper root bed. This may vary from 5 to 8 or 9 inches actual. The irrigation furrow should be as deep as can be made without disturbing the root bed. It is not safe to depend on the eye in determining this. Take a 2 or 3-foot straight edge, bring the shoulders of the furrows to the general level, then apply the rule. You will find a large majority of the furrows yet made, from 3 to 5 inches, actual, instead of from 6 to 8. To make these deep furrows in our heavy soil requires a good team with two shovels. I think it a mistake to economize time by using more than two.

The amount of water taken up from the furrows on a hot day, as shown by careful tests, is enormous—so great, I am not sure but where water is scarce and its flow quite under the control of the orchardist, it would justify the extra trouble of having it turned off during the hottest portion of the day time, running as much of it at night as possible. It is true that the warmer the soil, the faster it takes the water in, but also true that the higher the temperature of the water, the more rapid the evaporation.

That it is best to run water slowly and a longer time, not less than 72 hours, on our granite and clay soils, I think is well settled. Whether in many or few furrows, I am inclined to think the advantage is with the latter, say four in a 20-foot space in place of six, where the subsoil has been kept moist so that the new supply of water will equalize quickly. I am watching with much interest a corner of an orchard cut off by a roadway, and for special reasons has not been cultivated—trees now five years old. The only irrigation they have had has been from a single furrow along each row filling slight depressions near each tree—water running seven hours each ten days. It is difficult to see much difference between the vigor of these trees and their fine crop of fruit and of the main orchard across the way, which has received its regular and full amount of irrigations.

Conserving Water.—As to conserving the water after it is in the ground, real and definite improved methods have been found, which may be urged with assurance. To stop evaporation at the first possible moment after the water is turned off is exceedingly important. Probably there is no better method to do this than as soon as the surface soil, including the shoulders of the furrows, can be moved without sticking, before the lower parts of the furrows are fit to disturb, to go over the ground with any light implement that will pull a covering of fine earth into the furrows, (not necessarily filling) without firming any portion, but thoroughly scarfing the entire surface. A few hours of sun following leaves a thin covering of fine dry earth, effectually checking evaporation, while, if we wait till the ground is fit for thorough cultivation, each day the sun and wind dry out a few inches of the surface to be promptly filled by the moisture from below, during the following night. By the time this process of pumping has gone on for several days, as it often does, a very considerable percentage of the stored water below has been lost before the cultivating begins. The equalization of the water in the ground by capillarity goes on rapidly after this scarfing, and it is soon in the best possible condition for the deep cultivation, which is one of the most potent helps to the prevention of hardpan.

Cover Crops.—These will doubtless prove a very considerable factor in conserving moisture, when properly handled. Our scientists insist that humus in the soil from any source serves this purpose, though I confess to not understand the philosophy of it very well. We all readily understand that the mechanical effect of covered-in vegetable matter, whether growing crops or stable manures, materially helps to make the surface layer a better protection from evaporation from below. While I am inclined to think the value of strawy manures as a fertilizer is overestimated, its mechanical value in heavy soil is, I think, under valued, and its free use where there is a tendency to the formation of hardpan is especially beneficial.

While I am enthusiastic over cover crops with the new value that wonderful discovery of inoculation has given them, I think their net value in our irrigated orchards, especially where water is scarce and expensive, will not be fully determined till we know more definitely the amount of water required to produce the crop and the permanent effect of withdrawing all or a part of it from the tree while the crop is growing. Riding with Professor Foriter of the Washington Irrigation Department on this coast the other day, passing a heavy crop of peas, I remarked the fine growth. "Yes," he said, "but," shaking his head, "it has taken an immense amount of water to produce that mass of vegetation," and intimated that he did not think the cover crop problem was fully solved yet.

Plowing.—Wherever an annual plowing will leave the surface bed in better condition to conserve water in the root layer, it has a value in addition to the better aeration which it secures. As to shallow or deep plowing, I think that should be determined by the depth of the pulverized bed necessary for best conservation of moisture below, which varies in different soils. I am sure it is a mistake to disturb the roots below that point.

In this connection, I want to speak of a matter which has troubled me much, that is, how best to manage the extra mass of delicate feeding roots that push up towards the surface in early springtime. The occasion of this special growth we readily recognize as an effort to carry the trees safely over its most strenuous season, the blossoming, fruit-setting time. The rootlets gradually make their way toward the surface till they quickly fill the soil considerably above the ordinary root bed, unless prevented. I can not think but great loss comes from cutting into this new mass of fibres with plow or cultivator, and that it should be avoided or modified so far as possible.

Reducing Hardpan When Formed.—Deep, thorough, persistent irrigation and cultivation will subdue the most obstinate cases, except formed by the cementing process. Modern medical science has found means of saving life and limb in many cases by less harsh means than the cruel knife. So, with modern irrigation and cultivation, I am firmly in the belief that the deep cutting subsoiler should be abandoned. But, there is another way and a better, because it saves this serious sacrifice.

In preparing for planting, see that the entire surface is thoroughly plowed 15 inches deep—20 would be better. After that, the orange tree root bed need not be disturbed by the plow, and by proper care nine-tenths of the hardpan layer, so damaging to the feeding roots, need not occur. Of this root bed, the location and character of which I have tried to keep before you, I heartily commend a more careful study than has yet been given by most orchardists.

THE DAIRY.

Pasteurization in Butter Making.

By Mr. A. Jensen, of Ferndale, at the Creamery Operators' Convention at Fresno.

The object in pasteurizing in butter making may be said to be an effort to derive a greater revenue for the butter through a more pleasing product to satisfy the exacting consumer. The practice is thoroughly scientific, but the application of this science is not as easy as it appears and the failure to appreciate this is due to the fact that it has not been successful in many cases. Pasteurization is only part of up-to-date cream ripening. It means the killing of the germ life in the cream and then to seed in the cream germs that produce a fermentation that brings about a fine flavor and keeping quality in the butter. To make this point plain, let us compare a lot of cream that is received at a creamery for butter making, or that is separated from milk delivered, to a field that has not been cultivated. It will, of course, be full of weeds or any form of vegetation grown from seeds that in many ways, even difficult to understand, found their way into the soil. To make this field useful the first thing to be done is to destroy these weeds and in their place plant the seeds of the crop it is desired to produce. So it is with milk and cream. To keep out the seeds or germs is infinitesimally more difficult than to keep the seeds of weeds from our fields—for the air is full of floating germ life—the bodies of their cows and

their attendants, as well as dairy utensils, are full of them and it is little wonder that they should find their way into milk and cream.

The germs or bacteria that may thus find their way into milk are of many kinds and, in many cases, develop wrong flavors that affect the butter by overcoming the good effect of such germs as are desired; that is, like the weeds in a field if allowed to grow will check the growth of the crop desired to grow. Therefore, it is necessary in cream ripening to first destroy all of this germ life and afterwards to introduce the particular kind of germs capable of bringing about the fermentation desired.

THE PROCESS.—Being vegetable life, extreme heat and cold cause the destruction of these fermenting germs, and upon this is based the practice of pasteurization. The heating of milk to a temperature of over 170° F. and suddenly cooling it to 60° has the effect of killing the germs usually found in milk. It has been claimed that this can be done at temperatures as low as 150° to 165°, but this is not true unless the milk or cream is held at that temperature for a considerable period. In Denmark, where dairying is nearly the sole industry, the world's highest quality of butter is turned out by the hundred million of pounds, every pound of which is made from milk or cream exposed to a temperature of over 180°—the object being to prevent the spread of contagious diseases, especially bovine tuberculosis. At Ames, Iowa, typhoid fever was spread among over fifty students by milk that was delivered at the college creamery by a patron who had the disease among his family, and nearly a dozen deaths resulted. Here is where pasteurizing proves healthful, and no creamery or milk concern should be allowed to advertise its product pasteurized unless it has been heated to over 170°.

ESSENTIALS.—The essential features of pasteurization are thoroughness and cleanliness. By thoroughness, I mean that the bacterial life in the cream must all be destroyed. This looks easy, but that it is not so is apparent from the many reports of unsatisfactory results. No butter maker should undertake it unless he is aware of what it involves. The condition of the cream must be considered. If its acidity is high, it may by proper pasteurization bring about an improvement in the butter, but it will never compare with results from good sweet cream. Therefore no one should get the idea that it is a remedy by which the effects of rotten cream may be overcome. The Meadow Gold Creameries, throughout Kansas and Nebraska, pasteurize their entire make by taking sweet and sour cream and dumping them together and pasteurizing, with apparent success, and I may say that they receive scarcely anything but farm separator cream, which is shipped from 10 to 400 miles.

A second thing that a maker should understand before undertaking pasteurization is the propagation of starters, as they are an essential in handling pasteurized cream. Careless handling of pasteurized cream in unclean utensils, or in a dirty creamery, simply reinocculates it with, in all probability, the same kind of germ life that we aimed to destroy in the pasteurizer. Then, again, the starter that is used may not contain the particular kind of germ life that it is supposed to. This matter of starters is a very important one. How to know that you have prepared the right kind of a starter can only be learned from experience.

PRECAUTIONS.—An excessive temperature of say 188° to 200° in pasteurizing must be avoided, as it develops an oily flavor in the butter, while too low a temperature does not destroy the bacteria that are in what is called a spore stage. In this condition they have more resistant walls or coverings and are able to stand a higher degree of heat than in their ordinary growing stage and during the cooling of the cream these are brought from their dormant state into life and may even overcome the effect of the starter.

Cream containing over 40% fat should be diluted with sweet whole or skimmed milk before pasteurizing, as rich cream tends to split up, or the relative composition of the fat compound in heavy cream decomposes when exposed to a too high or too low temperature and leaves a nasty metallic-like flavor, that often leaves the butter in a day or two, but often increases, although it is not caused by germ life. This flavor does not appear until the cream is quite ripe and can be detected in the buttermilk very plainly. Cream badly frozen produces very nearly the same flavor.

RESULTS.—The results of pasteurizing in butter making, when it is properly done, are most satisfactory. It means, as I think has been conclusively demonstrated, an addition of ½ to 3 cents a pound on the butter in the same market. It means that the butter has been made along the line of modern methods and that its flavor will remain permanent until consumed, whether it be used immediately or three weeks later. For such butter there is a demand.

The yield of butter when the cream is pasteurized is as good, if not better, than from raw cream. It means a test of fat in the buttermilk of .03% at 53°, .05% at 55° and .08% at 58°. Pasteurization brings about a more uniform distribution of the water in butter, a higher melting point, which means a better body, the foam and chunks of butter often found in unpasteurized cream do not appear, the consistency is thinner, making it easier to handle, the flavor of the butter clean, mellow and lasting.

California's Cheese Product.

The output of cheese in California for the past season, or rather for the year ending the first of last October, according to the figures compiled by the State Dairy Bureau, made a big decline from the preceding year, amounting to over a million pounds. Compared with other years the output shows up as follows:

Year—	Pounds.
1897	6,399,6 5
1898	5,148,372
1899	5,294,938
1900	4,989,960
1901	5,681,366
1902	6,503,441
1903	7,141,637
1904	6,133,898

This remarkable decline is attributed to two causes. The first of these is the drouth. The largest cheese producing section in the State comprises the counties along the southern coast, notably Santa Clara, San Mateo, San Benito, Monterey, Santa Cruz and Los Angeles. All of these counties suffered from the severe drouth during the early spring of last year, causing a heavy loss in production with no other part of the State making up for the loss as was the case in the butter output.

The other cause for the decline has been the low prices that have ruled for cheese which had the effect to divert much of the milk that usually goes into cheese for butter making. This took place in such counties as Sacramento, Sutter and Stanislaus, in each of which in former years large amounts of cheese have been made, but the good prices that have ruled for calves raised on skim milk, the prices offered for separator cream by the creameries and the general introduction of tarm separators has been at the expense of the cheese output. It is also undoubtedly true that about 6,000,000 pounds seems to be the limit of the consumption of the kind of cheese that California makes. There is little or no demand outside the State for this quality of cheese to sustain prices, and once the demand is supplied the surplus, however small, brings on a low market. The stocks held over from the preceding year is what started low prices early last spring from which the market did not recover until this fall, when the short production of the season just past made itself felt.

The production for last season by counties is shown in the table below:

County—	Pounds.
Contra Costa	23,254
Fresno	150,150
Inyo	14,000
Kern	15,846
Lake	50,019
Lassen	28,866
Los Angeles	800,945
Marin	507,788
Mendocino	35,865
Modoc	6,000
Monterey	694,017
Napa	37,054
Plumas	10,950
Riverside	1,500
Sacramento	537,625
San Benito	454,432
San Joaquin	35,626
San Luis Obispo	63,935
San Mateo	748,231
Santa Clara	810,264
Santa Cruz	375,773
Sonoma	178,183
Stanislaus	152,400
Sutter	233,114
Tehama	67,012
Tulare	5,6 5
Yuba	52,443
	6,133,898

THE IRRIGATOR.

Water Rights in California.

NUMBER III.

Written for the PACIFIC RURAL PRESS by SAMUEL C. WIEL.

In the preceding number it was said that no appropriation can be made on or interfering with private or occupied lands because an appropriation cannot be initiated by a trespass and cannot interfere with established riparian rights. It must be understood by this that adverse occupancy is meant. The rights of one claiming solely as an appropriator were under discussion. If one claims also under the consent of an occupant, the occupancy to that extent ceases to be an objection. Likewise if the occupant himself seeks to make an appropriation on his own land his occupancy ceases to be a factor. An occupant may make an appropriation on his own land so long as the rights of other occupants or appropriators are not interfered with, as in the case of any appropriation.

"The fact that plaintiff or his grantor was a riparian owner does not warrant the conclusion that he could not be an appropriator—there is, as is said in a play, 'no consonancy in the sequel.' The notion seems to be that becoming a riparian owner estops one, in some sort of way, from being an appropriator of water, although there be no one in existence in whose favor the estoppel can be evoked. * * * * * * * Counsel for respondents seems to think that because plaintiff's grantor, as a riparian owner, could have prevented subsequent appropriators from diverting the water above his land and away from it, therefore he could not divert the water himself; but that is a confusion of the distinction between meum and tuum. Counsel complain that this view gives great advantage to the first possessor and appropriator of the water of a stream. This is no doubt true, but it is the advantage which the law gives, and which necessarily follows prior occupancy and appropriation." 97 Cal. 464.

HOW AN APPROPRIATION IS MADE.—Having found that water can be appropriated and a proper place to appropriate it, the right to the water is not complete until the water is actually taken into one's possession, or, rather, until all construction work preparatory to the actual use of the water is completed, since that is the equivalent of taking possession (6 Cal. 548). As between the Government and the appropriator there are only two requisites for this—the preparatory work must be actually completed and there must be an intention to apply the water to a beneficial use. If there are no rival claimants of any kind, up to such actual completion, that is enough to satisfy the Government, who is then alone concerned, and the right is complete against later attack on this ground. (Wells vs. Mantes, 99 Cal. 583.) The head note to that case sums up the decision as follows: "The scope and purpose of the provisions of the Civil Code upon water rights was merely to establish a procedure for the claimants of the right to the use of the water whereby a certain definite time might be established as the date at which their title should accrue by relation; and a failure to comply with the rules there laid down does not deprive an appropriator by actual diversion, of the right to the use of the water, as against a subsequent claimant who complies therewith."

But as against rival claimants who appear before completion, to guard himself against them, four requisites in all must be complied with: First, a notice must be posted at the start; second, there must be an intention to apply the water to a useful purpose; third, the work must be prosecuted with diligence; fourth, it must be actually completed.

1. Notice must be posted. In the Civil Code, Sec. 1415, 1421, it is provided that a notice must be posted at the point of intended diversion, stating the amount and purpose and place and means of use, and be recorded within ten days.*

This serves to warn others. It does not actually withdraw the water then and there from use by others entirely, as a notice of discovery withdraws mining ground, but it warns others that later on, when you have completed your works, you will have the right to so much water. It has been held that in the meantime anyone can come in temporarily and use the water, and you will have no action against him unless he interferes with your construction work or continues to use the water after you have actually completed your works. Until that time you will have no action for his diverting the water. In Nevada Water Co. vs. Kidd, 37 Cal. 282, the Court says:

"In view of this principle, suppose by way of illustration that the plaintiff has located its site for a dam and canal and claimed the waters of the South Yuba river, and commenced the construction of the dam and canal, but in consequence of the magnitude of the work, was unable for several years to divert or use the water, and in the meantime the defendants, being men of greater pecuniary ability, should subsequently locate another claim above or near the plaintiff's, and a canal running parallel with the plaintiff's, and be in a condition to divert and use the water in half the time; their acts, provided there was no interference with plaintiff's site and location, or obstruction to the prosecution of its work, would be no injury to plaintiff or cause of action in its favor. The plaintiff in such case has, as yet, no right to the water so far perfected that a diversion or use by other parties is any interference or injury. But if the plaintiff's work should be prosecuted with diligence and completed, so as to entitle it to divert and use the waters, its right to the waters thenceforth would date by relation from the commencement of the work, and, should defendants thereafter continue to divert the waters and deprive the plaintiffs of their

*—1415. NOTICE OF APPROPRIATION.—A person desiring to appropriate water must post a notice, in writing, in a conspicuous place at the point of intended diversion, stating therein:

1. That he claims the water there flowing to the extent of (giving the number) inches measured under a 4-inch pressure.

2. The purposes for which he claims it and the place of intended use.

3. The means by which he intends to divert it, and the size of the flume, ditch, pipe or aqueduct in which he intends to divert it. A copy of this notice must, within ten days after it is posted, be recorded in the office of the recorder of the county in which it is posted.

After filing such copy for record, the place of intended diversion or the place of intended use or the means by which it is intended to divert the water, may be changed by the person posting said notice or his assigns if others are not injured by such change. This provision applies to notices already filed as well as to notices hereafter filed.

En. March 21, 1872. Am'd. 1903., 361.

use, an injury to their water rights then vested and perfected would result, and a right of action for the injury to such a right accrue." The case so held.

For all purposes except to make such temporary use of the water actionable, however, the right to the water on completion relates back to the time of posting notice if the work has been prosecuted diligently, and dates from the posting of the notice as against those who come later (C.C. 1418; 99 Cal. 583).

Failure to post a notice constitutes a waiver of all advantages that such a warning gives. As seen above, it is not fatal if the work is nevertheless completed before others intervene. But it is fatal as against intervenors who comply with the code (C.C. 1419). As between rival claimants neither of whom has posted a notice, they are on the same footing as though the code were never enacted, since those provisions were enacted for their own benefit and they refused to take advantage of them (117 Cal. 106). Their rights are the same as before the code (when no notice was needed, 80 Cal. 397–406) giving the better right to the man who began work first, or if he fails in diligence, to the one who first prosecuted it to completion with diligence (7 Cal. 261).

As to underground water, it seems that the code provisions, and the rules just stated, apply, if it is in a definite stream, or subflow of a definite surface stream; the code governs all cases of definite streams, and a notice must, it seems, be posted on the surface (126 Cal. 486). But it is said, in Katz vs. Walkinshaw, 141 Cal. 116, that the code does not apply to mere diffused percolating water; and that the appropriation of this must be governed by the same principles as those which established the law of appropriation in the early days, before the code was enacted. It will probably be found that the code, however, merely enacted the law as it existed before, without materially changing it, except to require posting of notice, and that the requisites for the appropriation of percolating water will be otherwise substantially the same as those for water in streams; viz., intention to apply it to a beneficial purpose, diligence, and actual completion, leaving out only the details as to notice, length of time, etc., fixed by the code. In Katz vs. Walkinshaw, 141 Cal. 116, the Court says:

"The principles which, before the adoption of the civil code, were applied to protect appropriators and possessory rights in visible streams will, in general, be found applicable to such appropriators of percolating waters, either for public or private use, on distant lands, and will suffice for their protection as against other appropriators. Such rights are usufructuary only, and the first taker who, with diligence, puts the water in use, will have the better right."

How far an appropriator is bound by the declaration in his notice as to amount, purpose, means or place of use will be a matter for consideration later. It may be said here that the appropriator is not bound by his notice to a preliminary base line for ditches or flumes, but may later, in the course of construction, within a reasonable time, change his surveyed line, as necessity points out, without having to start and post a notice all over again (C.C. 1415, 6 Cal. 548).

2. There must be an intention to use the water for a beneficial purpose (C.C. 1411). What constitutes a beneficial purpose will best be seen from examples. A ditch for mere drainage does not fulfill this requirement; another may hence go up stream and cut off the water (7 Cal. 261). Irrigation is a useful purpose, and water may hence be appropriated for irrigation (23 Cal. 453). An appropriation for sale of the water is good (60 Am. St. Rep. 804 note, and Cal. Constitution, Art. XIV, Sec. 1), but mere speculation is not allowed; e. g., a reservoir built to hold water indefinitely without any definite use in mind (15 Cal. 271).

"Water is diverted to propel machinery in flour mills and sawmills, and to irrigate land for cultivation, as well as to enable miners to work their mining claims; and in all such cases the right of the first appropriator, exercised within reasonable limits, is respected and enforced" (Basey vs. Gallagher, 87 U. S. 670).

Malice and ill will toward another do not enter into the question (42 Cal. 339; 46 Cal. 218; 137 Cal. 39). It is usually said that an act otherwise lawful does not become unlawful merely through a malicious motive to injure another, though this wide statement is open to question.

The intent alone, by itself, is not enough; the other requisites we are considering must also be complied with (13 Cal. 33). A design two years before to appropriate a certain creek as a connecting link in a long canal was held, in 6 Cal. 105, not to prevent another man from coming in the meantime and building a dam. In extensive operations of this kind, involving several streams, each, it appears, must be separately appropriated.

How is the intention shown? First, of course, from the notice; but it may be drawn, also, from the appropriators' acts, the manner in which they work, the general size of the ditch, etc. (8 Cal. 443). They aid in interpreting the notice.

3. There must be diligence in prosecuting the construction work (C.C. 1416). The code has specified certain requirements for diligence. The work must commence within 60 days after posting the notice. It must continue thence uninterruptedly unless prevented by rain or snow (C.C. 1416). Interruptions, even by sickness or lack of money, are not allowed (37 Cal. 282 at 314; 12 Cal. 27).

What constitutes diligence must be determined on the facts of each case. In Kimball vs. Gerhart, 12 Cal. 27, the court says that the following statements, among others, are an accurate statement of the law:

"In appropriating unclaimed water on public lands only such acts are necessary, and only such indications and evidences of appropriation are required as the nature of the case and the face of the country will admit of and are under the circumstances and at the time practicable; and surveys, notices, stakes and blazing trees, followed by work and actual labor without any abandonment, will in every case where the work is completed give title over subsequent claimants." * * * * "In determining the question of the plaintiffs' diligence in the construction of their ditch, the jury have a right to take into consideration the circumstances surrounding them at the date of their alleged appropriation, such as the nature and climate of the country traversed by said ditch, together with all the difficulties of procuring labor and materials necessary in such cases."

Perhaps the mere fact that another began later than you and finished sooner would be evidence of lack of diligence on your part (37 Cal. 282), but it would hardly be conclusive. (80 Cal. 397.)

The failure to use diligence in the construction work is like the failure to post notice already discussed. If there are no rival claimants before completion, the right is complete as against attack thereafter (cases cited supra). But as against intervenors who are diligent it is fatal (37 Cal. 282, C. C. 1419). It seems, however, that a revival of diligence, after inactivity, will constitute a good new start as against those coming later, although no new notice was posted; or, as it is said, the right on completion will probably relate back to the last diligence. (60 Am. St. Rep. 801, note).

4. The construction work must be actually completed. (C. C. 1416.) "By completion is meant conducting the waters to the place of intended use." (C. C. 1417). It is sometimes said that there must be an actual diversion of the waters; but this is too narrow a term, since, in peculiar cases, the appropriation may be accomplished without any diversion at all. Thus, straightening out a bed of a stream by dykes or dams constitutes an appropriation, though there is no diversion at all. (6 Cal. 105, 7 Cal. 46, 142 Cal. 350.) So, simply putting a large water wheel in the stream itself would doubtless be an appropriation of enough water to run it. In general, however, there will be no completion without diversion.

(TO BE CONTINUED.)

THE SWINE YARD.

Hogs on Alfalfa.

A Bakersfield farmer who has had some very definite experience, extending over five years, in raising hogs on alfalfa, gives his conclusions to the Los Angeles Cultivator. The soil is a deep sandy loam, having a fair amount of alkali, and therefore not exactly sandy. It holds the moisture well and has had two irrigations a year, one about February and one about June. The alfalfa remains green all through the hot summer and grows well until September, when it grows but little until rain comes in the fall. The land would produce five tons of hay in a summer if it were not pastured at all. There is plenty of feed for the hogs from February 20 until about the 20th of November. Half of the time during the winter there is green feed, some alfalfa and foxtail, but the hogs must have a little grain in the cold weather. As soon as the alfalfa starts in February, the hogs have no grain at all—nothing but alfalfa and water until late in the fall. The best time to market is from August to December. The hogs will always be fat and thrifty then. They must be taken off of the green feed for three or four weeks and must be fed on grain of some kind to harden the flesh and take away the fishy taste.

The first year I tried the experiment I measured off just five acres of alfalfa and put in 100 head. Twenty head to the acre, you see. The hundred head did not keep the alfalfa down, and I was compelled to mow the lot once that summer. The next year I put thirty-five head to the acre on the same five-acre lot. That was five to ten head more than should have been put in. It is not good for the alfalfa, or the hogs either, to stock the land too heavily. But I made the five acres carry the hogs through with the exception of three weeks' time. A week at a time, three different times, I turned the hogs out on other alfalfa, after I had cut a crop of hay off, so as to give the hog lot a chance to get a start.

Those hogs did as well as any I ever had. Many a time I strolled around among that 175 head of hogs with great satisfaction, as they lay stretched out in the shade in the heat of the day. They were all in fine healthy condition and most of them were fat. The first of September the entire lot averaged 170 pounds.

Under the conditions we have here, twenty to twenty-five head to the acre is about the right number.

However, the kind of hogs they have in Arkansas would not do that well on alfalfa. A man once told me that he went down to Arkansas to buy some hogs. And the first man he struck told him that he had 100 head of three-year-old shoats for sale. He said he bought them and it took him three years more to teach them to eat corn. I have always kept well-bred Poland-China hogs. That is, high grades, and a few pure-bred hogs among them.

It takes twelve to eighteen months to make hogs ready for market the way I have described. Occasionally I meet a man who objects to that length of time. He says: We used to make hogs back in old Missouri, or somewhere else, in seven to eight months. Well, if a man wants to feed grain all of the time with his alfalfa, he can mature them in much less time than twelve to eighteen months. The length of time, provided it is within reason, is not the question so much as the cost of the matured article. Hogs can be grown very cheaply on alfalfa, but it takes more time than if they were raised on grain.

Henry Miller, the cattle king, says he can grow hogs on alfalfa at 2 cents per pound and make money.

All the pigs that come one summer can be turned off the fall of the next summer, and sometimes the young hogs can be wintered with very little grain.

European Exports of Peanuts to the United States.

For the first time African peanuts (arachides) received at Marseille have been re-exported to the United States, according to Robert P. Skinner, U. S. Consul-General, Marseille. The value of these exports during the fiscal year 1904 was $25,065—shelled nuts, $17,411; nuts in the shell, $7654. As some sample lots of American peanuts had been received in this city the year before, this turning of the tables may occasion surprise. It appears, however, that the exports of the nuts from Europe to the United States were in consequence of an unusual shortage in the American crop and consequent advance in price. A repetition of this shortage in the United States is unlikely, although home buyers will now have to consider the foreign market in establishing their prices. I am informed by the principal American importers that the African nuts are inferior to the American for comestible purposes, although richer in oil. This is also the judgment of the Marseille oil crushers. The Virginia peanut is undoubtedly the finest in the world in quality, but yields so poorly in oil as to render improbable the creation of an American oil crushing industry unless steps are taken to secure a new variety combining the advantages of the standard American nut with the percentage of oil in the foreign nut.

Gunpowder for Pear Blight.

To the Editor:—I want to say a word in regard to the dreaded pear blight. I have had a number of trees to die with the blight. Last spring I selected a tree that was about half dead with the blight. In fact, I had cut fully a third of it away before this time. I took an inch auger and bored about a half dozen holes into the heart of the tree—bored them about 6 inches deep and slanted them down, and then filled the holes with gunpowder and plugged the holes up air tight with wooden plugs driven in tight. About a month after that time it put out the greatest number of bloom that I ever saw on a tree; but they nearly all dropped off; then the tree began to put out new shoots, and to-day it is as healthy looking a tree as you can find anywhere. Whether the powder cured it or not I don't know, but it is worth trying. I have some more trees that I treated a few days ago to see how it would act on them.—A Reader, Dinuba.

We have no idea that the gunpowder had anything to do with it. Please tell us more about it when you have had time to watch the further behavior of the trees.

New Patents.

Dewey, Strong & Co.'s Scientific Press Patent Agency, 330 Market street, S. F., has official reports of the following U. S. patents issued to Pacific Coast inventors:

FOR WEEK ENDING JANUARY 3, 1905.

779,250.—Valve—J. Anderson, S. F.
779,388.—Heaving Plug—G. W. Barnes, Bakersfield, Cal.
779,394.—Stamp Mills—M. P. Boss, S. F.
779,347.—Bottle Corker—W. E. Brown, Los Angeles, Cal.
779,398.—Oil Separator—A. C. Calkins, Los Angeles, Cal.
779,072.—Safety Gas Cock—B. F. Clarke, S. F.
779,119.—Furnace—H. C Davey, San Jose, Cal.
779,029.—Oil Burner—DeRemer & Robinson, Los Angeles, Cal.
779,400.—Rotary Engine—B. Estly, Norman, Wash.
779,361.—Dredgers—R. G. Hanford, S. F.
779,401.—Trolley Pole—Harrison & Fosdick, Los Angeles, Cal.
778,967.—Metal Wheels—J. H. Haskins, San Diego, Cal.
779,284.—Fire Escape—Johnson & Smith, Congress, Ariz.
779,045.—Crushing Mill—G. Johnston, S. F.
779,051.—Garbage Can—N. N. S. Matcovitch, Oakland, Cal.
778,874.—Oil Burner—R. Matheson, San Diego, Cal.
779,299.—Oil Can—Morris & McClair, Index, Wash.
779,306.—Panic Guard—J. P. Page, Portland, Or.
779,374.—Flexible Shaft—R. M. G. Phillips, Los Angeles, Cal.
779,135.—Envelop—Louise Reinhold, S. F.
778,898.—Pump—W. W. Robinson, S. F.
779,380.—Bottle—W. A. Stattmann, Toluca, Cal.
779,140.—Thresher Feeder—Stevens & Gillett, Pendleton, Or.
779,011.—Brake—Stuart & Zimmer, Puyallup, Wash.
779,146.—Tortillas—Workman & Eisenbach, S. F.



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Agricultural Review.

Butte.

PREPARING TO IRRIGATE. — Gridley Herald: J. A. Evans of the Ord ranch is having 400 acres of land adjacent to the Butte County canal leveled and checked, preparatory to plowing, seeding and irrigating. The contract to level and check the land is held by C. Bayles of Biggs, who, with his brother, is now at work on the job. The cost of the work is not given out, but it is not far from $25 per acre. Mr. Evans has just shipped in six tons of alfalfa seed, which, at 13 cents a pound, costs him $1560. This is the largest single undertaking in the way of applying irrigation under the new ditch that has been taken up so far, and it is expected that the results will encourage a great deal more work of the same nature.

IRRIGATION BROUGHT ORANGES.—The effect of cultivation and of irrigation can be seen on two orange trees at the home of A. F. Stoudt near Biggs. The trees were old, but had borne no fruit up to two years ago, when Mr. Stoudt took the place. He dug up the trees and set them in new ground, and during the summer irrigated them. This winter one of the trees had 150 good, big oranges on it.

HUNGRY COYOTES AND BOB CATS.—Cherokee special to Sacramento Bee: Coyotes have become so numerous in this vicinity that there is some talk of petitioning the Board of Supervisors to put a bounty on them, or take some other means of thinning them out. They are more numerous now than for many years previous, and very often make their appearance in daylight. At night big droves of them appear and make raids on chicken and turkey roosts. These animals are very hungry. They do not seem in a hurry to run when any one approaches them. In fact, it is not at all difficult for one to get close enough to them to use a shotgun to good effect. Bob cats are also more numerous here than for some years, and they, too, are proving an enemy to the poultry raisers.

Contra Costa.

BIG DREDGER A TOTAL LOSS.—Sacramento Union: The dredger Mastodon, said to be next to the largest of its kind on the coast and valued at $65,000, is reported destroyed by fire at Jersey Island, on the lower Sacramento river. The great machine has been used to assist in repairing the disastrous Edwards break south of this city, and was about to resume work on the levee protecting Reclamation District No. 673, after completing a minor contract at Jersey Island. The cause of the fire is supposed to have originated from the oil burners. It was owned by the Bay & River Dredging Co. of San Francisco, of which W. H. Wright is at the head. It had been rented to levee contractors for $150 per day, and its owners have contracts that would require a year to fulfill. The loss of the dredger will be keenly felt by reclamation land owners during the coming flood season, as every machine of the kind will be in constant operation. The Mastodon, owing to its great capacity, was expected to have completed several contracts involving repairs of levees at different points along the river. The dredger Neptune, now at work on the levees of Reclamation District No. 535, just below Sacramento, is the only river dredger on the coast exceeding the Mastodon in size.

Monterey.

VIEWS ON THE APPLE CROP.—The report of Horticultural Commissioner Rohrback contains the following: The past season in the apple districts of Pajaro, Prunedale, Carneros and Aromas has not proved remunerative to the fruit growers. There were several reasons for this. First, the long and continued late rains at the time when the fruit trees were in blossom, apparently injured them to the extent that much of the fruit failed to set. The prospects were for a good one-third crop, until the extreme hot weather of September injured the apples badly. Their commercial value was small. To be added to this already discouraging situation was the fact that much of the apple crop was prematurely picked and sent abroad. As a consequence, much of the fruit was tasteless and unpalatable. It soon wrinkled and was anything but attractive. If this method of picking prematurely continues and the fruit is shipped abroad, it will certainly work against the reputation of Monterey county apples. Success to the industry will only be won when the packers and shippers will not send away any fruit except that which is first-class.

Orange.

WILL GROW CHOYOTAS.—A dispatch from Anaheim says: There have been placed on exhibition by Attorney W. F. Heatham at the Anaheim Chamber of Commerce some choice choyotas, a new fruit which belongs to the vegetable kingdom and is now making its first appearance on the coast. The fruit is well liked by all who have tried it. Some vegetarians, newcomers from the East, have rented 110 acres between here and Los Angeles and will plant the entire tract to the choyota.

CELERY FIELDS.—Santa Ana Blade: About 8 miles from Santa Ana in a southwesterly direction are to be found what is now known all over the country, the noted Celery Fields of Orange county. The Smeltzer section, where the principal celery fields are located, is a magnificent stretch of country, the people of which are in a prosperous condition, the farmers realizing that they are safe in their expectation of as good financial returns this year as they enjoyed from the enormous crop of last year. The 2000 acres of celery has the appearance of a vast floor carpeted with the richest green imaginable. The warehouses and stables and packing houses present a picture of busy life, for the products of these vast fields are being placed in cars and sent off to the frozen East. A conservative estimate of the revenue of the celery fields of Orange county places the figure about $300,000 annually. The celery producing business is spreading beyond the Smeltzer district. The home of J. L. Adams, near Bolsa, containing eighty acres of rich bottom land, is a fine producer. One-half the farm is planted in alfalfa and the remainder to celery, both being quite remunerative. Other farms are being planted to celery, wherever the soil permits, as it is much the best paying crop if everything is favorable. It is an interesting sight to watch a mammoth steam ditch digger, capable of digging 160 rods of ditch from 2 to 3 feet deep daily, preparing the ground for tile adapted to the vast system of underdrainage that is being put in to carry off the water from the peat lands where the celery is produced most abundantly.

Worth $100 A Bottle.



Collinsville, Texas, Feb. 10, 1903.

Dr. B. J. Kendall Co., Enosburg Falls, Vt.

Gentlemen:—Having two fine and valuable horses which had been lame with Spavin for nine months, I sent to the druggist at Decatur for a bottle of

Kendall's Spavin Cure

which in six weeks removed all lameness and soreness, and both horses are sound as colts. **The one bottle was worth $100 to me.** You may use my name at any time you wish.

Very truly yours, P. H. SEGLER.

Price $1; six for $5. As a liniment for family use it has no equal. Ask your druggist for **Kendall's Spavin Cure,** also **"A Treatise on the Horse,"** the book free, or address

DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

San Luis Obispo.

AFTER THE COYOTES.—Arroyo Grande Recorder: Coyotes have increased with such rapidity that the farmers are forced to do something to protect their chickens and pigs, upon which these wily animals prey. If the supervisors refuse to take any action in the matter, the farmers in the district reaching from the Santa Maria river to the Suey ranch, and from the Huasna to the Santa Manuela, will circulate a petition in the district asking the people who are interested to subscribe a certain amount to be paid as a bounty for coyotes.

A SMALL PLOW.—The Union Sugar Co. commenced plowing on the Holt place Monday morning, and although the cable was broken in the forenoon, the operators of the little plow managed to get sixteen acres turned before 3 o'clock in the afternoon. For quick work the crew consists of five men. The outfit consists of a double gang of four 14-inch turning plows, arranged on opposite sides of a carriage, the two gangs being merely to save turning around. A 20 H. P. traction engine is placed at each end of the field, and between these is a cable attached to the plow, which is drawn across the field alternately by the engines. As soon as the plow arrives at one end of the field, the engine at that end is moved forward a few feet, the gangs are shifted and the engine at the other end is started. Thus from twenty-three to thirty acres a day are turned.

Shasta.

SWALLOWED A NEEDLE WHILE EATING TURKEY.—Redding special to Sacramento Bee: Mrs. F. Cummings of this city swallowed a 2-inch cambric needle with a bite of turkey. The needle had been used in sewing up the turkey so that the dressing would be kept in place, and through some inadvertence it was not withdrawn. The roast turkey was served at the noonday meal and no one came across the needle. At supper time Mrs. Cummings, in setting the table, nipped a bite of the roasted meat and swallowed it. After she had done so she realized that the needle was stuck in her throat. A hurried trip to the office of a physician resulted in the recovery of the little piece of shining steel. By some surgical appliance it was dislodged about 3 inches below the larynx, and Mrs. Cummings retains it and the turkey wishbone as souvenirs of the day.

Sonoma.

HORSE FED ON TURKEY.—Santa Rosa Press-Democrat: A turkey was turned loose in a lot where a horse was grazing to permit the bird to feed on some of the green grass and enjoy an outing. The horse took after the turkey and then began a race for life. The two animals romped around the enclosure many times, the biped leading the quadruped, but finally the superior strength of the latter overcame the bird and the biped was trampled to death by the equine. The horse pawed its fallen enemy several times and then after satisfying itself of the death of the bird began devouring it. The appetite of the horse proved equal to the emergency and in a short time all traces of the bird had been obliterated with the exception of two wings. The case is an unusual one and so far as known there is no other on record.

NURSERY STOCK BEING EXAMINED.—Santa Rosa Press-Democrat: County Horticultural Commissioner Bremner states that during the month of December he examined considerable nursery stock, including about 30,000 seedlings.

CRAMPS

Colic, and all stomach troubles instantly relieved with

Painkiller
[PERRY DAVIS']

This famous remedy never fails to cure pain of both external or internal.

FOR SALE.

RANCH OF 12 ACRES, 3½ MILES SOUTHEAST OF LODI, SAN JOAQUIN COUNTY, CAL.

Tokay Vines: Bearing, 5 acres; Two Years Old, 1¼ acre. Three-fourths acre Orchard; 3½ acres Alfalfa; five-roomed House, Barn, Chicken Houses and Sundries; good water supply. $5000.

CHARLES B. SUTTON, Lodi, Cal.

JACKS FOR SALE.

Several nice ones; also one nice Pacing Stallion. Address W. R. MADDEN, Dixon, Cal.

Sharples Tubular SEPARATORS

We want you to know Tubular Cream Separators as they are.

The low can, enclosed gears and ease of turning are shown in this illustration from life. Tubulars have neither oil cups, tubes, nor holes — they oil themselves. **They have bowls without complicated inside parts —they hold the world's record for clean skimming, durability, capacity, easy turning and easy washing.** They save half the work—greatly increase the amount and quality of butter—are wholly unlike all other separators. Catalog H-131 will interest and benefit you. Write for it.



The Sharples Co. Chicago, Ill. P. M. Sharples West Chester, Pa.

The Best Sulphur for Bleaching and Spraying Fruits and Vines.

SULPHUR

"Horseshoe" Pea Grain — "Horseshoe" Powdered

"Crown" Sublime — "Nevada" Lump

N.S. CO. NEVADA ™TRADE MARK

NEVADA SULPHUR CO., Office, 707 Front Street, San Francisco.

Phones: Main 5293—Buyer 59.

He also examined a great many hop roots which will be used in planting out new hop yards. The examination of the seedlings and other stock is to prevent the introduction of any foreign pest into the county, and has been found a great protection to the orchardists and the fruit and crop interests.

WAGON AND HORSE SAVED BY BRANCHES OF TREE.—Santa Rosa special to Sacramento Bee: The thrilling spectacle of a wagon and horse caught in the branches of a tree overhanging a deep ravine was the sequel to a dangerous runaway on the steep grade between the Geysers and Cloverdale Tuesday. A man was hauling a load of water to Cloverdale and the horses took fright. The animals tore madly around a perilous ridge and the driver was thrown out. The wagon struck a boulder, one horse broke loose, and the vehicle, water and horse landed in the branches of the tree. All the bottles holding the water were smashed. The horse was removed with great difficulty from its perilous position and was found to have escaped with a few scratches.

Sutter.

EXTENSIVE LEVEE WORK.—Yuba City Farmer: The work in levee district No. 1 this fall includes 3 miles of new levee near Marcuse and the repair of 17 miles of levee along the river and tule, quite a portion of the same being composed of a slab which raises and widens the levee where needed. The total cost this year is estimated at about $45,000 and it is conceded that the dirt has been moved at a less cost than for several previous years.

Tehama.

WILL FIGHT COYOTES OVER 35,000 ACRES.—Deadwood special to Sacramento Bee, Jan. 5: L. Lower of this place has been employed to ride 35,000 acres of range in Tehama county and slaughter coyotes. Lower has five fine foxhounds and is an experienced hunter. He has engaged two assistants and left to-day for the Gallatin range west of Red Bluff, the owners of which offered to pay him handsomely to patrol the land with a single eye to slaughtering coyotes, which have lately appeared in increasing numbers and caused widespread loss to stock. In addition to the regular salary paid to Lower and his assistants, they will receive $2.50 bounty from the county on each scalp.

The Home Circle.

A Knack.

Oh, I am a woman whose house is a sight!
From garret to cellar there's nothing that's right,
For day after day I am striving and straining
To reach perfect neatness, but never attaining.
While I'm washing the windows the carpets get dusty:
While I'm cleaning the pantry the parlor grows musty;
My meals are behind time and always have been,
And I just get my bed made in time to get in.
The neighbors make comment, "Alas! and alack!
Poor thing, she works hard and don't want to be slack;
But, somehow or other, she hasn't the knack!"
Oh, a very fine thing 'tis to have a great knack!

Now, I have a neighbor whose house is just right,
Whenever you enter from morning till night:
She gives a touch here and she gives a touch there,
And all is in order from cellar to stair.
Should I ask for the reason, her friends all can tell:
"Oh, she has a great knack for doing things well!"
It's not that she works any more than her neighbors,
But she knows how to get good results from her labors.
Oh, yes, it is plain, she is blessed with a knack!
That coveted gift which so sadly I lack,
So she sits at her ease while I'm breaking my back—
Oh, a very fine thing 'tis to have a great knack!

Oh, is there no merchant who traffics in knacks!
By wholesale or retail, in barrels or sacks?
Or is there no ship that sails over the sea
Will bring in its cargo a great knack for me?
There's many a peddler out tramping the road
Is there one with a half dozen knacks in his load?
O'er mountain and valley I'll follow his track,
I'll seize him by force and I'll rifle his pack,
For I am determined I'll have what I lack—
Oh, a very fine thing 'tis to have a great knack!

—J. M. T. B., in N. Y. Sun.

The Confessions of an Amati.

I came of ancient and noble lineage, from the land of song and sunshine, fair Italy; yet for half a century I rested in inglorious ease, a mute singer, unknowing my powers, in the dark cobwebby workshop of an old maker of violins, in quaint many gabled Nuremberg.

To Herr Wieland, scholar, dreamer and enthusiast, I was his most priceless possession, as day by day throughout the passing years he pored over me with the rapt devotion of the discoverer, seeking vainly to pluck the secret from my heart. Even Bettina, his grandchild, a slender madchen, with eyes like twin stars, and long braids of spun gold, could not rival me in his affections, rouse him from the one dream of his life, the vision of future greatness that haunted him sleeping or waking.

Yet I could not reveal to him the mystery that slept in my bosom, the subtle spell that clung to me as the fragrance to a rose. I knew it not in those days, and dreamed on like the princess in the fairy tale. It was not until the lovely child had flowered into a lovelier womanhood that a change came to the calm household, a stranger entered the gates of Nuremberg; a mere stripling, but a violinist of growing fame, he needed no other passport to the heart and home of the old musician.

For me, at the first touch of that magnetic hand I knew my master; my soul awoke as from long slumber to do s bidding, and music leaped from the rilling strings to stir and enchant them all. I responded to his fiery lead like the Arabian steed to the spur of his rider, leaned to his tenderness as a maiden to her lover's caress. To those who listened spellbound it was as the meeting of twin souls, reunited after a lifetime of separation; a revelation of human genius granted to few in this world.

Ruy Romero was then in the first flush of his fiery youth and dawning power; handsome, flashing-eyed, lithe of limb, with a strange gipsy fascination few could withstand. It was indeed rumored that he was closely allied to that wild wandering race, nomads on the face of the earth, and to this the mysterious spell he cast over his hearers, his roving life, gave credence.

Who could resist him in those early days? Not Bettina, in her innocent, unguarded youth, to whom this stranger from far Spain seemed as a god, rather than a mortal man, stormy and unbridled by nature, gifted with powers he scarce understood. It was the impulse of a moment to love him, to lean to him as a flower to the sun; in a month's time she would have followed him unquestioningly throughout the world. While to Ruy Romero, the homeless and friendless boy, the simple German household with its girlish guardian angel, seemed an anchorage of peace to a storm-tossed mariner.

It was a strange chapter of romance; a swift wooing that could have but one finale; a terrible awakening to Herr Wieland when roused from his dreams to a realization of the situation, and the foolish futile opposition of a guardian who learns the truth too late. For such a lover there was but one end possible to the ill-starred romance; as well oppose the rising tide, the hurricane at its height, as the will and desire of Ruy Romero in his headstrong youth and awakened love.

There came a night when Bettina overruled by her dominant lover, threw duty, conscience and affection to the winds, and allowed herself to be spirited away—away from quaint old Nuremberg, the home of her childhood, across the wild, wintry sea, whither he willed. At first I feared to be forgotten in this overmastering love of my gentle mistress, but at the last moment she caught me to her breast in a passion of tears, and carried me with her to the world beyond, the last link to the dear unforgotten past.

Then followed brilliant and changing years in that land beyond the sea, where genius meets its fullest recognition, reaches its highest fruition. "The young Paganini," as they called him, seeking to give expression to the weird spell he exercised over his listeners, stood on the threshold of a great and glorious career. He was the idol of the hour; the homage of fair women and renowned men, rose like an incense to blind, bewilder and lead him astray; the temptations and pitfalls incidental to his profession were outspread for his careless feet.

He was young, impressible, human, in a word, a genius; the warm artist temperament that made him what he was also exposed him to the perils of his position; he eagerly quaffed the intoxicating draught upheld to him, drifted with the tide of pleasure and fashion. None knew him as I did in those dazzling days of his early fame; not even the fair girl bride, who had followed him over the seas, with so touching a faith, so unwavering an allegiance.

To me alone did he confide his swift-veering moods, his every thought and emotion, his winged fancies, and loftiest aspirations. To be the confessor of such a man, strange, half-barbarous, wondrously gifted, was an experience not to be lightly forgotten. After the innocent dreams and desires of my gentle mistress, whose heart was like a cloister where one light burned, to know the strong ambitions, the restless longings, the wild imaginings of the rarest genius of his time, was change indeed. Where he led I needs must follow; and through it all, half slavery, wholly enchantment, I felt that at last I lived, and the old dreamful days in the quaint German town had passed from me forever.

But for poor Bettina, a stranger in a strange land, there seemed no place in this vivid, stirring life; and though she still clung to the shadow of a happiness which for one short year had been supreme, still exalted him in her warm imagination, made his triumphs her own, she could not fathom the nature, strong, passionate and variable, of the man who had wooed and won her, hold him to her side by the sole power she so simply wielded—her love.

He was drifting from her day by day, without will or intent, it may be; absorbed by a loved and taxing career, allured by fairer faces, siren voices that sought to charm honor and manhood to sleep. Unhappy child—she divined it all, yet knew no word of blame; but his varying moods, which now flooded her heart with happiness, now left her stranded and alone, preyed upon her health; she pined for her native land like a Swiss exile, her home, the dear old man whose love had never failed. Day by day she faded like a flower in an ungenial clime, and at last in the waning season, ere the terrible truth could be borne in upon him, she slipped from his longing arms forever.

My heart bled for him in that hour of anguish, despair and realization; when as by a lightning flash he saw it all, his own irreparable folly, and unconscious cruelty, the shattered dream of the poor child who had sacrificed all for his sake. How the man suffered; his Nemesis had awakened at last, and would hunt him down to the bitter end. He knew no pity for himself then, no pardon; had he killed the girl with his own hand he could not have endured a deeper, more undying remorse. Whatever his sin he would make bitterest atonement in the coming years.

From that moment he was a changed man; the roving gypsy strain asserted itself once again, and we led a fevered nomadic existence wandering from land to land, seeking a peace that ever evaded us. His very youth seemed to slip from him in those days; thin, haggard and restless, with black elf-locks tumbling about his pallid face, and a burning light in his great sad eyes, he was scarce recognizable to those who recalled the handsome spirited boy at the outset of his career.

He shunned all human intercourse, frowned upon friend and admirer alike, and but for his music, which kept him before the public eye, lived the life of a recluse. Like a flaming meteor he shot across the musical firmament, leaving a trail of fire behind; strange tales of the roving Romany were afloat, yet none so strange as the reality, the love that still lived in his breaking heart, the fair face that haunted him like a ghost from the past.

But his genius, destined to consume itself in early youth, quickened by sorrow and undying remorse, was hastening to a swift maturity and fulfillment; his music, once appealing as the awakening spring, was now more akin to the flaming volcano, mighty and overwhelming. When at last the end came it was even as he could have wished it. He had never played as on that night it seemed, when he stood up in their midst and improvised at the close of the concert.

All the memories of his youth rushed upon him, stormy and irresistible, in that supreme moment; weird, hurrying gypsy strains throbbed and pulsated through the heated air; all the passion, the poetry, the melancholy of his race, a subtle prescience, too, of what was to come, spoke in accents almost articulate to the thousands who listened in breathless enchantment in that vast audience. And even as they hung upon his lightest utterance, even as his "Swan Song" echoed in their hearts, he wavered and fell into the outstretched arms of the startled musicians.

No more—I cannot dwell upon that hour; but when that hot and restless heart ceased to beat, I felt that my life, too, had best have ended then and there. For I am only a poor little Amati, and my master has gone from me forever. Strange hands touch my strings now, marvel at the pathos of my liquid tones, seek to woo my secrets from me, but never again shall I sing as in the olden time, exercise the subtle witchery I then knew.—Julia M. Knight in the American Cultivator.

For the Hair.

Never use curling irons.
Vigorous brushing is bad.
Cleanliness is a necessity.
Treatment must be gentle.
Gentle massage is admirable.
Face bleaches injure the hair.
Stiff bristle brushes are bad.
Massage promotes the flow of oil.
Constant cutting tends to baldness.
Scalp circulation is of prime importance.
Gentle massage is a pleasant stimulation.
Lack of circulation means loss of hair.
To go hatless is a great benefit to the hair.
Rubbing with mere stimulants does no good.
Turkish bath scrubbing is bad for the hair.
As a rule, falling hair is due to ill health.
Diving in cold water lays the foundation for baldness.
Too much oil is as disagreeable as too little is dangerous.
General good health will do more than tonics and washes.
Choose a flexible comb with large, round, coarse teeth.
No matter how fast hair falls out, regaining is a slow process.
In using a hair brush do not press so hard that it touches the scalp.
To shake the hair out loose and give it a sun bath is most beneficial.
Overwork or overplay, as well as stimulants, causes the hair to fall out.
Fifteen minutes each evening before retiring should be devoted to the hair.
Hair will last thick and glossy to old age if properly attended to from youth.
To frequently cut the hair is to cause it to lose its gloss and become positively coarse.
Fine, soft, thick hair of moderate length is much more desired now than the long hair of old.

"Don'ts" in House Decoration.

A New Orleans woman who has gone in for house decorating—a field, by the way, which seems peculiarly adapted to women, although comparatively few women adopt it—has been offering some suggestions relative to the house beautiful. Among other things she says:

"A woman of Empire type of feature should never choose a mediæval background, or a man with a pork-packing face insist on a Louis Seize library. They will be unhappy and not show to advantage, and never realize the reason why.

"The important things to be considered in decorating a room are:

"What it is to be used for.

"Size.

"How lighted.

"Who the people are that will occupy it.

"There are 'don'ts' in house decoration as well as in everything else.

"Don't put a dark paper on the walls of a badly lighted room.

"Don't fill to overflowing with bric-

Don't fool with your face. Insist on Williams' Shaving Soap.

Sold everywhere. Free trial sample for 2-cent stamp to pay postage.
Write for booklet "How to Shave."
The J. B. Williams Co., Glastonbury, Ct.

School of Practical, Civil, Mechanical, Electrical and Mining Engineering,
Surveying, Architecture, Drawing and Assaying.
113 FULTON ST., one block west of City Hall, SAN FRANCISCO, CAL.
Open All Year. A. VAN DER NAILLEN, Pres't.
Assaying of Ores, $25; Bullion and Chlorination Assay, $25; Blowpipe Assay, $10. Full course of Assaying, $50. Established 1864. Send for Circular.

a-brac and furniture a room of small size.

"If you own your home, have your book shelves built to the walls. They are cleaner, cheaper, and last, but not least, more artistic."

Domestic Hints.

PRINCESS POTATOES.--Cut cold mashed potatoes into two-inch strips. Have ready in one saucer a tablespoonful of melted butter and in another a beaten egg. Dips the strips first in the butter, then in the egg; with a knife lay them in a buttered tin, and cook for twelve minutes in a hot oven.

TAPIOCA JELLY.—Soak a half cupful of tapioca in water for three or four hours, stirring often. Turn off the water and add a cupful of boiling water. Set on the stove to cook slowly, and when it is nearly done add the juice and part of the grated rind of a lemon. When thoroughly cooked pour into moulds. Serve with cream.

MAIDS OF HONOR.—Take one cupful of sour milk, one of sweet, a little salt, the yolks of three eggs, a half teaspoonful of vanilla and a half cupful of sugar. Put the sour and sweet milk on to boil together in a double boiler and allow it to become sufficiently heated to set the curd. Then strain off the milk, run the curd through a strainer and add butter, sugar, eggs and vanilla. Line the little pans with the richest of puff paste and fill with the mixture. Bake until firm in the center, which will be from ten to fifteen minutes

COCOANUT BONBONS.—Take two cupfuls of sugar, half a cupful of desiccated cocoanut, half a cupful of milk and boil all together for five minutes. Pour out part of this on a buttered plate to harden. Divide the remainder into two portions, leave one in the kettle and pour the other into another saucepan. Add to this a few drops of cochineal or a little strained cranberry, to turn it a pretty pink. Stir just long enough to get the coloring to take evenly, and turn out to harden. To the last portion add two tablespoonfuls of melted chocolate. Cook for two minutes and turn out to cool. If you have any difficulty in managing the recipe in this way the three different flavorings can be made separately.

CHICKEN WITH RICE.—Singe a roasting chicken of about three pounds, dry inside and out with a towel; cut in four pieces and place in a saucepan with one tablespoonful of melted butter, one of chopped white onion, and half a one of chopped green pepper. Brown slightly all around for ten minutes, then add one quart of good broth and three tablespoonfuls of canned tomatoes. Season with one teaspoonful of salt, half a one of pepper, three sprigs of parsley, one small bunch of celery, two cloves and one small bay leaf. Dilute in a little water one saltspoon of saffron and pour over the chicken. Add half a pint of uncooked rice, well washed, and finish with two tablespoonfuls of freshly grated Parmesan cheese. Cook in a covered saucepan for one hour. Turn over the pieces of chicken twice during the cooking, without disturbing the rice, so that each grain may be kept whole. Serve on a hot platter. Place the rice in the center in cone shape, the four quarters of chicken at the corners, and a few green pepper strips here and there.

BANANA ICE CREAM.—This is delicious, especially when served with an orange ice. To make a quart, take a full half pint cup of granulated sugar and the yolks of four eggs, beat the yolks thoroughly with the sugar, then add slowly a pint of boiling milk, stirring all the time to prevent the eggs from curdling. Put the mixture over a hot fire and stir it continually, until it begins to grow thick, being very careful not to let it boil. Remove this custard from the fire and add immediately a full pint of rich cream. Let the mixture cool for half an hour, and in the meantime peel four perfectly sound, ripe bananas and put them through a puree sieve. Stir the soft puree which is thus formed with the cream. Mix the bananas and cream thoroughly together and freeze immediately. An orange ice is made as follows: Stir half a pound of powdered sugar with one pint of cold water, and grate in the rind of three ripe, fine oranges, those of a bright reddish skin being the best for this purpose. Add the juice of the oranges and the juice of two lemons, and beat the whole thoroughly for fully five minutes, or until the ingredients are completely mixed together. At the end of the five minutes strain through a sieve and freeze thoroughly.

Hints to Housekeepers.

Tissue paper in which there is no sulphur is now provided for wrapping silver in. This is said to keep the silver clean and bright for any length of time.

Lemon syrup, made by baking a lemon twenty minutes and then squeezing the juice upon half a cupful of sugar, is excellent for hoarseness and to break up a cold.

Javelle water may be prepared at home as follows: One gallon of water, four pounds of ordinary washing soda and a quarter of a pound of soda. Heat the water to boiling, put in the soda, boil about five minutes, then pour it over two pounds of unslacked lime, let it bubble and foam until it settles, and then bottle it for use A tablespoonful put into suds of three gallons and a quarter of a cupful in the boiler when boiling the clothes makes them very white and clear; rinse well afterwards.

Rheumatics should eat celery. Chop up the stalks in pieces an inch and a half in length, boil them in water until soft, then drink the water. Or stew them in milk and butter, thicken with a little flour and eat warm with toast or potatoes. Rheumatism is impossible, it is said, if the vegetable be cooked and freely eaten. Besides, there is no greater delicacy than stewed celery. The value of the plant lies in the apiol, or parsley-camphor, it contains. This dilates the blood vessels and has few equals as a diaphoretic and diuretic. Anything that produces a profuse perspiration is good for the rheumatic patient. All the world knows that celery is the best absorbent a drinking man can take, and its action on the kidneys and viscera is most healthful.

How to Be Slender.

How to become slender! Let the maiden inclined to embonpoint follow this advice, and her form should become as willowy as she could wish. Rise early and take a cold bath, rubbing vigorously afterwards with a coarse towel or flesh brush. Take a cupful of water before breakfast. Take one small cup of tea at breakfast, some dry toast, boiled fish or a small cutlet, and a baked apple or a little fruit. At dinner, which should be at mid-day, take white fish or meat, dry toast or stale bread, vegetables or fruit, either fresh or stewed; for supper, toast, salad, fruit, and six ounces of water. Hot water with lemon juice in it is also good for supper. When you have followed all these rules, and find yourself fairy-like in proportion, then you may begin to contemplate smart clothes such as only the slender can wear.

Allen's Lung Balsam

The best Cough Medicine.

It is an infallible remedy for Coughs, Croup, Asthma, Bronchitis, and all troubles arising from a cold. Keep it by you for an emergency.

Large, Medium and Small Bottles.

MEN WANTED TO LEARN BARBER TRADE. FIRST-CLASS PROFESSION. Trade taught in eight weeks. Positions secured. Write for particulars. SAN FRANCISCO BARBER COLLEGE, 741 Howard St., San Francisco.

DRIED GROUND TANKAGE.

The Best and Most Economical Fertilizer.

Analysis: 10½% Ammonia, 18% Bone Phosphate.

WRITE US FOR PRICES AND PARTICULARS.

Western Meat Company,

SAN FRANCISCO.

SUGAR 2¢ a lb.

One Order to One Family

To compel the quick introduction of our unmatched QUALITY GROCERIES into every home, we will sell one order to one family of our POPULAR SPECIAL COMBINATION NO. 51 for $8.50. Freight shipments packed and delivered free to San Francisco depots.

51 lbs. best Granulated Cane Sugar, white and dry	$1.00
18 lbs. new fancy head Table Rice, very best	1.00
10 lb. pail Pure Leaf Lard, Rex	1.00
5 lbs. fancy English Breakfast Uncolored Japan, Spider Leg, Oolong or Ceylon Tea, 75c grd.	2.50
5 lbs. Mocha and Java Coffee, roast or ground, 40c grade	1.50
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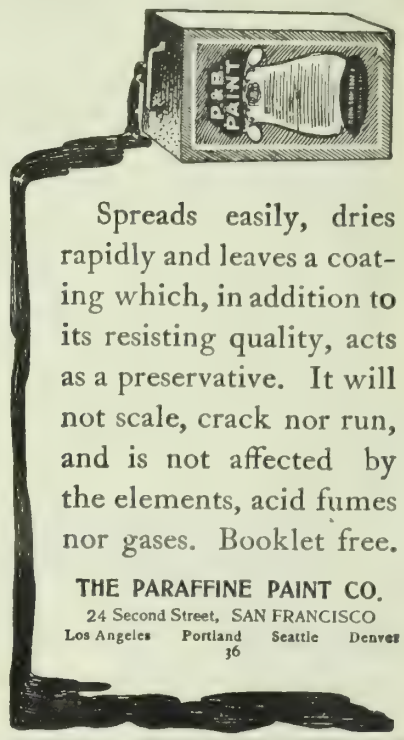
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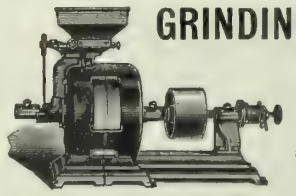
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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, January 18, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 16⅛@1 17½	99⅛@ 99⅞
Thursday	1 17½@1 16½	99⅛@ 99¼
Friday	1 15⅝@1 16½	98 @ 99
Saturday	1 17⅝@1 16⅜	99¼@ 98⅞
Monday	1 17¼@1 15½	99¼@ 98⅜
Tuesday	1 15¾@1 15	98⅝@ 98⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	44 @44⅞	45¼@45⅝
Thursday	44 @44⅜	45⅛@45⅛
Friday	44⅛@44⅞	45⅛@45⅜
Saturday	44⅜@45⅛	45⅛@45⅜
Monday	45⅛@44¾	45⅝@45⅛
Tuesday	44 @45	45⅛@45⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 46¼@1 45¾	$1 31½@——
Friday	1 45 @1 45⅝	1 30¼@1 30¼
Saturday	1 45½@1 46	1 31¼@——
Monday	1 46 @1 46⅛	1 31¾@——
Tuesday	1 46¼@1 47	1 31¾@——
Wednesday	——@——	——@——

Wheat.

The local market for wheat has been quiet, so far as spot trading is concerned, and is not likely to show much life until the coming season opens, for the very substantial reason that the grain is not here or in the interior in sufficient quantity to admit of much activity. Inquiry is largely on milling account, and desirable milling wheat is in particularly light supply. In quotable values there are no special changes to record, but a generally firm tone. Shippers are doing practically nothing, there being only three vessels on the engaged list and these about provided for, largely with cargo other than wheat. Ocean freight rates are close to the lowest figures ever known. On wheat cargoes to Europe, usual option as to ports of discharge, not over 12s. 6d. could be obtained for desirable iron ships. A year ago the freight market was fully as weak as at present, although not quite as inactive. At corresponding date last year a French vessel was chartered at 10s. for wheat to Europe, or 13s. 9d. if loaded with barley. The vessel took wheat and barley, with cargo mainly of latter cereal. Prices for wheat in this market are fully $1 per ton better than a year ago.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903–04.	1904–05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@—s	12½@—s
Local market	$1 35@1 40	$1 40@1 45

California Milling	$1 50	@1 60
Cal. No. 1 shipping, alongside	1 40	@1 42½
No. 1 Oregon Club	1 40	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.45@1.47.
December, 1905, delivery, $1 30¼@1.31¾.
Wednesday, at the forenoon session of Exchange, for May, 1905, wheat, $1.46½ was bid, $1.47 asked; December, 1905, $——@——.

Flour.

There is no very extensive movement at present in flour, either outward or on local account. Prevailing values for desirable qualities are being well maintained. Stocks are not of heavy volume, particularly of good to choice of recent makes. A large proportion of the flour now here is the product of mills outside the State.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The market for this cereal has been influenced considerably by weather conditions the current week, as is customary at this time of year. The fluctuations in the spot market were, however, more in the tone than in actual values. Buyers were not able to obtain any decided concessions when the weather was wet, and found it necessary to pay full figures with a clear sky. Offerings were not heavy, and it was the exception where any disposition was shown to crowd stock to sale. In the speculative market May option touched higher figures than preceding week, selling up to $1.17½, with $1.15⅝ the lowest figure of the week for the option named. Prices for May delivery have been lately about as high as for spot barley. A year ago this option was selling 5@7½c under the spot market.

Feed, No. 1 to choice	$1 15	@1 17½
Feed, fair to good	1 12½	@1 15
Brewing, No. 1 to choice	1 17½	@1 22½
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 12½	@1 15

Oats.

Market is lightly stocked and is firm at the quotations. Demand is fair for both feed and seed oats. Choice to select seed is in decidedly limited supply, and buyers in quest of this description find it necessary to pay comparatively stiff prices. Millers are not doing much buying, being fairly supplied through purchases made early in the season.

White oats, fancy feed	$1 50	@1 55
White, good to choice	1 45	@1 50
White, poor to fair	1 35	@1 40
Milling	1 45	@1 50
Black oats	1 30	@1 65
Red, fair to choice	1 30	@1 55

Corn.

There is a moderate movement in corn, some shipments being made to Central America, and local inquiry is fully up to the average. Values for good to choice have ruled steady at about same range quoted in last review. Corn which is seriously damp or otherwise quite faulty can not be placed at quotations.

Large White, good to choice	$1 25	@1 30
Large Yellow	1 30	@1 35
Small Yellow	1 60	@1 75
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 22½	@1 30

Rye.

Market is firm, with offerings small and fair inquiry, principally for seed.

Good to choice	$1 45	@1 50

Buckwheat.

Stocks in store here are of rather small proportions and are mostly in the hands of millers.

Good to choice	$1 75	@2 00

Beans.

Values for most varieties are ruling steady for good to choice qualities. White beans are in better supply than colored, but stocks of high grade are not large of any variety. Large and small White have been receiving considerable attention. Tendency on Limas has been to slightly lower figures than lately current, owing to improved crop prospects South, although the crop is far in the dim future.

Pea, fair to good, 100 lbs	$2 90	@3 10
Small White, good to choice	3 15	@3 40
Large White	2 35	@2 60
Pinks	3 00	@3 50
Bayos, good to choice	2 50	@3 00
Red Kidneys	4 50	@5 00
Reds	4 00	@4 50
Limas, good to choice	4 00	@4 15
Black-eye Beans	2 40	@2 50

Dried Peas.

Some inquiry for Niles and $2.25 bid with Green imported from the East. Garbanzos of prime to choice quality are so scarce as to be hardly quotable.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 75	@2 25

Hops.

Offerings are light in this center, and there is no evidence of any pressure to realize. Some recent bidding has been reported in the interior at relatively better figures than warranted as regular quotations here. The New York Producers' Price Current says: "In New York state some few sales are reported at 31c. Growers are indifferent sellers and are not forcing their goods on the market. On the local market no transactions of any consequence and brewers as yet have not shown any renewed interest in regard to purchasing. Reports from Germany indicate a quiet market with no demand for export either to England or America and a steady decline in prices. Reports from England show a continued quiet market, with growers unwilling to meet the prices offered by dealers for choice growths."

California, good to choice, 1904 crop	27	@30

Wool.

Little doing here in the way of transfers from first hands, as has been the case for many months. Most of the purchasing the past season was done in the interior. Stocks of wool now here are light, and there is practically nothing offering from growers. Much of the coming clip has been already contracted for. Values for the time being are necessarily poorly defined, but market has a strong tone, and that prices will rule higher than last season is a foregone conclusion.

SPRING.

Northern, free	23	@—
Northern, defective	17	@21
Oregon, good to choice	20	@23
Nevada	16	@21

FALL.

Northern	15	@19
San Joaquin and Southern, free	13	@16
San Joaquin and Southern, defective	9	@11
Southern lambs, as to quality	9	@14

Hay and Straw.

Market has ruled quiet and has been lacking in firmness. Buyers on local account are operating as lightly as possible, having no confidence in the market ruling firmer later on. The shipping demand is not brisk from any quarter. The last contract on Government account for shipment to the Orient was let North.

Wheat, good to choice	$13 00	@ 15 00
Wheat and Oat	10 00	@ 13 00
Tame Oat, fair to choice	8 00	@ 13 00
Wild Oat	8 00	@ 10 00
Barley	9 00	@ 11 00
Alfalfa	9 00	@ 11 50
Clover	7 00	@ 9 50
Stock hay	6 00	@ 7 00
Compressed	11 00	@ 15 00
Straw, ₱ bale	45	@ 55

Millstuffs.

Receipts of Bran and Middlings were of fairly liberal proportions from Oregon and Washington, but they had been largely engaged ahead, and prices were not materially disturbed, although the tone of the market was not strong. Current values on Rolled Barley and Milled Corn were well maintained. Oilcake Meal is out of stock.

Bran, ₱ ton	$20 50	@ 21 50
Middlings	25 00	@ 28 00
Shorts, Oregon	20 50	@ 22 50
Barley, Rolled	24 50	@ 24 50
Cornmeal	30 00	@ 31 00
Cracked Corn	30 50	@ 31 50
Oilcake Meal	——	@——

Seeds.

Not much Alfalfa in stock here, and that mostly Utah product, with demand rather light. Values for Yellow Mustard are ruling steady, offerings being by no means heavy; quotations for the Trieste variety are largely nominal, owing to the market being almost bare of this kind.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		12 @13½
Canary		6½@ 6¾
Rape		1¾@ 2¼
Hemp		3½@—
Timothy		5 @ 5½

Honey.

There are no heavy offerings, neither is there much inquiry, either from local or outside buyers. Only for Water White Extracted, free from granulation, can the market be said to show any special firmness. Comb which is candied or broken is difficult to place, even at comparatively low figures.

Extracted, White Liquid	6	@ 6¼
Extracted, Light Amber	4½	@ 5¼
Extracted, Amber	3¾	@ 4¼
Extracted, Dark Amber	3	@ 3½
White Comb, 1-frames	11½	@12½
Amber Comb	9	@11

Beeswax.

Market is steady. Stocks here are of quite moderate proportions and mostly in few hands.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Market for choice Beef presents a tolerably firm tone, there being no excessive supplies of this description. The lower grades of Beef are in ample stock, demand for same not being active. Veal of desirable size was not in very heavy receipt and in fair request at full current rates. In quotable values for Mutton and Lamb there were no changes developed, demand being fair at steady prices. Hogs were in only moderate supply, and sold to fair advantage, going mainly to consumers of fresh pork.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6½@—
Beef, 2nd quality	5½@ 6
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7½c; wethers	7 @ 8
Hogs, hard grain, 140 to 250 lbs	5½@ 5¾
Hogs, large, hard, over 250 pounds	4⅝@ 4¾
Hogs, small, fat	4¾@ 5
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	8 @ 9
Lamb, ₱ lb	8½@ 9½

Hides, Skins and Tallow.

Hides in prime condition are in good request at full current figures. Pelts are in improved demand and values tending upward. Tallow is going outward in considerable quantity at quotably unchanged prices.

Bags and Bagging.

Market is quiet throughout. Grain Bags are not being urged to sale, holders expecting a better market the coming summer than was experienced the past season.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7¼
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@—
Grain Bags, Calcutta, buyer June–July	6 @6½
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

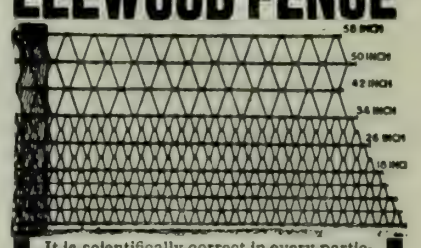
Market for most kind of poultry has favored the selling interest the past week. Large and fat Hens, spurless young Roosters and choice Fryers were in particularly good request. Broilers were in rather heavy supply as compared with the demand. Turkeys were not plentiful, but inquiry for them was limited. Ducks and Geese were in light receipt, and for such as were choice the prevailing values were well maintained. Inquiry for Old Pigeons was slow; choice Young met with ready sale.

Turkeys, Dressed, choice, ₱ lb	$ 23	@ 25
Turkeys, live gobblers, ₱ lb	20	@ 22
Turkeys, live hens ₱ lb	20	@ 22
Hens, California, ₱ dozen	4 50	@ 5 50
Hens, large	5 50	@ 6 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	5 50	@ 6 50
Fryers	4 50	@ 5 50
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ₱ dozen	4 50	@ 5 50
Ducks, large young, ₱ dozen	6 00	@ 7 00
Geese, ₱ pair	2 00	@ 2 50
Goslings, ₱ pair	2 00	@ 2 50
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	2 00	@ 2 50

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Butter.

Market has been ruling firmer for fresh, in consequence of some shipping demand, mostly from coastwise points. The improvement was more in separator and dairy butter, much of which is now showing good quality, and on outside account is given the preference over creamery product held at higher figures.

Creamery, extras, ₱ lb	24	@25
Creamery, firsts	23	@23
Creamery, seconds	21	@22
Dairy, select	22	@23
Dairy, firsts	20	@21
Dairy, seconds	18	@19
Mixed Store	12	@14

Cheese.

Stocks of flats are not heavy, nor are many required to satisfy the demand at full figures. Young Americas are in fair supply and are moving slowly at quotably unchanged values. Eastern markets are quoted firm at 11½@12½c for good to choice stock.

California, fancy flat, new	12	@—
California, good to choice	10½	@11½
California, fair to good	10	@10¾
California, "Young Americas"	10	@12¾
Eastern	12	@15

Eggs.

Market has shown demoralized condition, receivers endeavoring to avoid accumulations and buyers not caring to stock up ahead, as is invariably the case when prices are on the down grade. At the lower figures established larger quantities will be consumed, and this will tend to check in the immediate future any further pronounced breaks in values.

California, select, large, white and fresh	30	@—
California, select, irregular color & size	27	@29
California, good to choice store	26	@28
Eastern firsts	23	@24
Eastern seconds	—	@—

Vegetables.

There were tolerably heavy receipts of Green Peas for this time of year and prices declined. Tomatoes were in fair supply, but values for desirable qualities were maintained close to figures of previous week. Mushrooms were in liberal stock. Onions ruled higher, with supplies mostly in second hands. Garlic was scarce and stiffly held.

Beans, Lima, ₱ lb	—	@—
Beans, String, ₱ lb	8	@ 10
Beans, Wax, ₱ lb	8	@ 10
Cabbage, choice garden, ₱ 100 lbs	50	@ 60
Egg Plant, Los Angeles, ₱ lb	7	@ 8
Garlic, ₱ lb	7	@ 9
Mushrooms, ₱ lb	8	@ 15
Onions, Yellow Danver, ₱ ctl	2 40	@ 2 65
Peas, Green, Los Angeles, ₱ lb	3	@ 6
Peppers, Green, ₱ lb	6	@ 8
Rhubarb, ₱ box	—	@—
Summer Squash, Los Ang., small b'x	75	@ 85
Tomatoes, ₱ box	75	@ 1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Arrivals of Burbanks were of quite fair proportions, both from the river districts and the north, but they represented in the main previous purchases by dealers. Desirable qualities were very steadily held, in some instances an advance being asked. There was considerable inquiry for seed potatoes. Sweets were in good supply

and for other than choicest the market was weak.

Early Rose, ℔ cental	1 20	@ 1 35
Salinas Burbanks, ℔ cental	1 00	@ 1 50
River Burbanks, ℔ cental	65	@ 90
River Reds, ℔ cental	65	@ 75
Oregon Burbanks, ℔ cental	1 00	@ 1 30
Sweet Potatoes, ℔ cental	75	@ 1 00

Fresh Fruits.

Apples were in better supply, there being fairly liberal receipts from the North. While the market presented an easier tone, there was no quotable decline in values. Choice to select were in good request, and for some very fancy, such as high grade Spitzenberg and Newtown Pippins, occasional sales were made in a limited way at slightly higher figures than warranted as regular quotations. Common qualities had to depend for custom mainly on a class of buyers who look more to price than to quality, necessitating the acceptance of rather low prices. Strawberries were in too light receipt to be quotable and were mostly off quality.

Apples, fancy, ℔ 50-box	1 50	@ 1 75
Apples, good to choice, 50-lb. bx	1 00	@ 1 25
Apples, fair to good, ℔ box	75	@ 1 00
Apples, Lady, ℔ box	—	@ —
Persimmons, ℔ regular box	—	@ —
Strawberries, large, ℔ chest	—	@ —

Dried Fruits.

Stocks are showing steady reduction, and market in the main is in healthy condition. Peaches are particularly strong, being in light stock for this date, and holders have further advanced asking prices. Pears of high grade are inclining against buyers. Apricots are held with confidence, there being every prospect that remaining supplies will be absorbed during the Spring and early Summer at present prices or better values. Apples appear to have touched bedrock, owing to improved conditions East for this fruit. Prunes of medium sizes are in fair supply, but they are being steadily held, as there are few of any other kind. The steamer Sierra, sailing Saturday last, carried 63,300 lbs. dried fruit, exclusive of Raisins, for Australasia, largely for New Zealand, and including 20,600 lbs. Prunes, 15,000 lbs. Apricots, 12,400 lbs. Apples.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4 @ 4½
Apples, extra choice to fancy, 50-lb boxes	5¼@ 6
Apricots, Moorpark	9 @11½
Apricots, Royal, good to choice, ℔ lb	7½@ 8½
Apricots, Royal, fancy	9 @10
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	7½@ 8
Peaches, unpeeled, fancy to extra fancy	8½@10
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Movement is of fair proportions. Values are without quotable change, but for high-grade raisins the market is firm. Stocks of 4-crown Muscatel are light and are likely to rule higher before the season closes. The steamer Sierra, sailing the 14th inst., carried 57,200 pounds raisins for Australia and New Zealand.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@—
London Layers, 3-crown, 20-lb box	90	@ 95
Fancy Clusters, 4-crown, 20-lb box	—	@1 30
Dehesas, 20-lb box	—	@1 85
Imperials, 20-lb box	2 25	@2 35
2-Crown Standard loose Muscatel		3¼@3½c
3-Crown Standard		3¾@4 c
4-Crown Standard		4¾@ —c
Seedless Thompsons		—@4½c
Seedless Sultanas		—@3 c
Fancy, 16-oz. Seeded		6 c
Choice, 16-oz. Seeded		5 c
Fancy, 12-oz. Seeded		4⅞c
Choice, 12-oz. Seeded		4½c
Bleached Sultanas, Woodland Dist., 50s		4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s		5½@8 c

Citrus Fruits.

Demand for Oranges has not been very active, although prospects are good for increased inquiry soon. Navels were in fairly liberal supply, mainly of the higher grades, the proportion of standards continuing light. Some very choice Tangerines were on the market from Butte county and were held at top figures. Lemons were in sufficient supply for the demand, and only for choice to select were current values well sustained. Limes were in reduced stock and were more firmly held.

Oranges, Navels, ℔ box	1 25	@2 00
Oranges, Seedlings, ℔ box	75	@1 00
Oranges, Cal. Tangerines, half box	75	@1 00
Oranges, Japanese Mandarins, ℔ box	75	@1 00
Lemons, California, select, ℔ box	2 50	@2 75
Lemons, California, good to choice	1 75	@2 25
Lemons, California, fair to good	1 25	@1 75
Grape Fruit, ℔ box	1 25	@2 00
Limes, Mexican, ℔ box	4 50	@5 00

Nuts.

Business in Almonds is mostly of a light jobbing character and at generally unchanged rates. Market is about bare of straight carloads, but there are numerous small lots offering. Some Walnuts are offering at 11c at Southern primary points for No. 1 soft shell, being a decline from recent asking figures.

Chestnuts, Italian, ℔ lb	7 @ 9
Nonpareil Almonds	14 @17
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	6 @ 7
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

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Wine.

Market for dry wines continues firm, with last vintage quotable at 14@17c. per gallon for fairly good to choice, and selections held higher. Some 1904 wine which was recently offered at 17c., city delivery, is not now obtainable for less than 17½c. interior delivery. Sweet wine market is quiet and easy at 25c. per gallon delivered at wineries. The steamer Acapulco, sailing 14th inst., carried 82,764 gallons and 29 cases, including 81,386 gallons for New York. Receipts of wine at San Francisco last week were 403,000 gallons, and for preceding week were 260,400 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	66,169	2,740 381	3,293,703
Wheat, ctls	18,377	1,930,504	1,465,591
Barley, ctls	43,547	2,376,089	4,435,839
Oats, ctls	20,863	645,417	673,402
Corn, ctls	2,214	120,373	91,617
Rye, ctls	1,533	38,002	34,613
Beans, sks	7,416	433,735	534,946
Potatoes, sks	36,074	749,893	774,722
Onions, sks	1,200	85,197	101,928
Hay, tons	3,302	110,252	110,346
Wool, bales	162	39,598	34,536
Hops, bales	1,829	33,689	27,234

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	56,252	2,001,872	2,249,444
Wheat, ctls	457	661,042	704,096
Barley, ctls	15,553	1,494,692	3,535,990
Oats, ctls	84	47,772	15,000
Corn, ctls	4,192	63,793	11,293
Beans, sks	425	38,226	22,399
Hay, bales	5,461	125,845	100,702
Wool, lbs	....	830,690	1,767,359
Hops, lbs	150	272,076	460,589
Honey, cases	2	1,445	3,704
Potatoes, pkgs	2,679	59,444	60,094

Shipment of Jerseys to the Coast.

The cattle breeding operations of the estate of W. S. Ladd form an important chapter in the live stock improvement of the Pacific coast. Of the Jerseys in the dairy demonstration at St. Louis, three of the five cows which won the first prize for the best performance of a group of five belonged to the Ladd estate. These three cows were last week shipped to Oregon, along with the two that stood in their company in the group of five. In the order of their relative standing, they are Loretta D, Diploma's Brown Lassie, Eurybia, Dorinda Darling and Prize May's Duchess 2nd. Years ago Messrs. Richardson selected for the Ladd estate quite a number of Jerseys of combination blood, which proved so satisfactory that Mr. Ladd requested them to secure for him several more representatives of this potent strain, to be shipped West with the cows from the St. Louis test. Nine choice cows, chiefly of this line of breeding, were bought and all were assembled at Orfordville, Wis., and shipped by express from that place last week. They were selected by J. J. Richardson, who was chairman of the committee of the American Jersey Cattle Club, which carried the Columbian and Louisiana Purchase Exposition tests to a triumphant conclusion for the Jerseys.

KILLED A BIG HAWK.—New Era: A hawk measuring 4 feet 6 inches from tip to tip was killed one day this week on the Booker ranch, Blanket creek, by Clinton Rablen, who is only fourteen years of age. For many years the hawk had carried on his work of destruction in that neighborhood, and, though many efforts were made to kill him, it remained for young Mr. Rablen to succeed in doing this.

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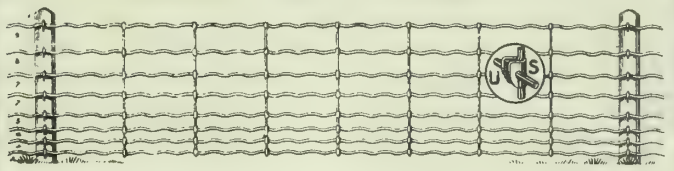
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TESTS on foreign and Nevada sulphur for agricultural and horticultural use made by the Agricultural Experiment Station of the University of California July 28, 1904, show that the Crown Sublime brand had the highest percentage of any of the five brands so tested—99.89%. The Nevada Sulphur Co. received first prize at the St. Louis Exposition.

GOOD PRICES FOR NUTS.—Anaheim Gazette: The Santa Ana Valley Walnut Growers' Association has shipped from its packing house a total of 1,275,129 pounds of English walnuts, amounting to sixty-eight standard cars. Of this amount 1,098,567 pounds have been first grade soft-shells, 105,999 pounds second grade soft-shells, 59,650 pounds first grade hard-shells, and 11,922 pounds second grade hard-shells. There yet remains unshipped a quantity of culls, which will be sent out later in the season. For the nuts thus far shipped there has been returned to the growers as net proceeds $130,689.88, after deducting all packing house expenses. Last year the output of the association was about 420 tons, giving an increase for this year of approximately 260 tons, due to the increased acreage brought into bearing and the larger crop of the former acreage. The association output represents about 50% of the crop of the Santa Ana district, so that the total crop in this end of the county is nearly 1400 tons. An almost equal quantity is grown in the Fullerton district in the northern part of the county, and several carloads at Capistrano, so that the whole crop of walnuts for the county approaches 6,000,000 pounds, and brings an approximate net return to the growers of $600,000.

THE FRESNO SCRAPER.

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THE VETERINARIAN.

Dehorning Methods.

TO THE EDITOR:—I was about to ask you some time ago for information on dehorning cattle, when some one got ahead of me and you told him all had been said that could be, and all there was to it was to take them off short up. Now, I had for years, whenever I had an extra bad cow about hooking the other cattle, etc., sawn her horns off about an inch from the head. And, like pulling a tooth, it never seemed to pain them for a second after removal. But, now, I had a band of cows and got an expert and he took them off with about an eighth of an inch of hide. This is the way everybody says to do it, but I think it's a case where "everybody" is mistaken, and not all has been said that can be said, for the hide seemed to draw back until bad sores resulted. For weeks the cows were frights and their heads were so sore that if they got the least jar they stood all of a quiver in the most intense pain. They were very careful not to run against each other so as to get a jar, and after about six weeks one died, I think from the constant pain.

When cut off so close, the horns are hollow and sometimes one can see clear through and out at the other horn. This space soon fills with water and runs for weeks. And when cows are throwing their heads on account of flies, it gives them intense pain, and standing near them one is liable to get spattered with the awful running from the horns. While if they are sawed off just outside the hair, the horn is solid clear through and does not bleed so much, there is little or no running and, I guess, no danger from flies. At present I have some more to dehorn, and want it done the best way possible. I do not like to set up my very limited experience against everybody's, and so write to learn if any different conclusions have been reached. It seems to me they should be taken off just far enough from the head not to open into the hollow.—H. E. DYE, Visalia.

You are right, and nearly everyone we know operates as you prefer. The horn should be sawn off close down to the skin, not below or into the skin. It is not desirable to leave a stub of the horn, because the animal is still armed for trouble and it looks bad also. Cut close to the skin, but not into nor under.

THE VINEYARD.

Suggestions on the California Vine Disease.

TO THE EDITOR:—Thinking that perhaps the California disease enters the vine through the wounds resulting from pruning, would it not be advisable to paint such wounds with some disinfectant, such as a thick whitewash, with perhaps some carbolic acid and bluestone, put on with a brush? This would be something cheap, easily applied and well worth trying. I have induced a number of growers in this county to try the experiment and report to me next winter, and hope that some of your readers will try it and report through your paper.

I think that most growers prune too early—in fact, they have to do so in order to plow. I have noticed that all of those who prune early have the disease, and those who prune late have not, including myself. It seems to me that the bleeding of the vine prepares for the entrance of the germ. Let any grower select a few rows and try the experiment—prune early and disinfect right after the pruning. Try this on vines that are fairly healthy, or, better still, on young vines in an infected district. J. G. GRUNDEL.

Alma, Santa Clara county.

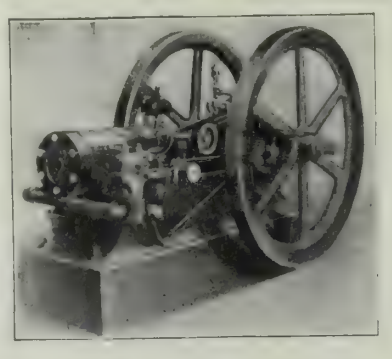
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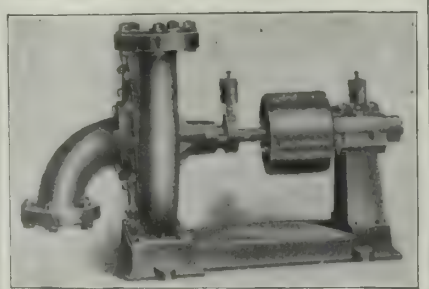
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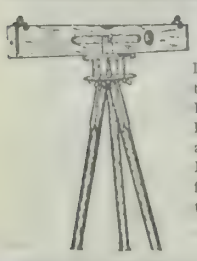
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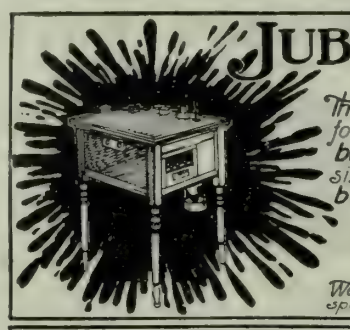
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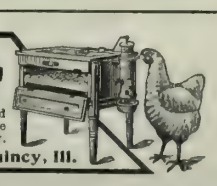
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THE GARDEN.

Ducks and Snails.

TO THE EDITOR:—As each succeeding season brings on a crop of inquirers as to methods of combating the slug or snail nuisance, and as I never yet saw in print a method that seemed to me both practical and reliable, I will give my experience in dealing with these unwelcome pests.

While living near Ferndale about eighteen years ago we bought a trio of mallard ducks. It was early observed that these ducks had an unlimited capacity for snails or slugs. Eighty-seven ducks were reared early in the summer and they all inherited that peculiar taste for slugs, and before autumn they must have eaten close onto a million slugs, for they almost lived on them.

My experience with the duck is that as long as they can find a slug they will not molest anything else. One or two pet ducks for slug hunters are as handy, expert and useful in dealing with the slug nuisance in the garden as is a cat in keeping the premises free of mice. I prefer the mallard to the clumsy Pekin for this purpose, for they can get around much better. In using them among the flowers or other growing garden a quarter of an hour early in the morning is quite sufficient, just so that they can make the round of the garden. With a little patience and training for use in a family garden, it is surprising to see how expert they become at finding slugs.

A person may hunt slugs with a lantern or stick them in the back with a sharp stick. He may also be his own cat and catch his own mice, but it is uphill work. Give me ducks and cats; they are both specialists and onto their job. ALBERT F. ETTER.

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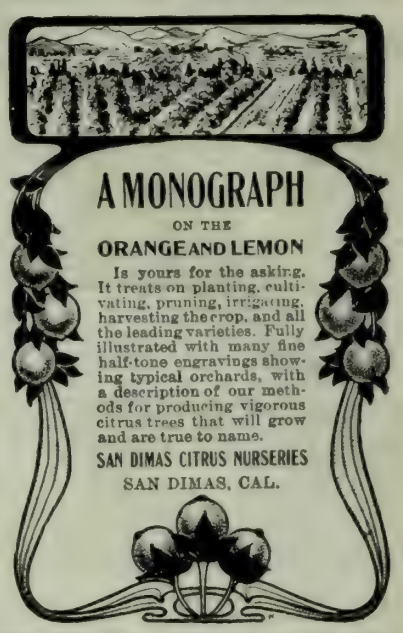
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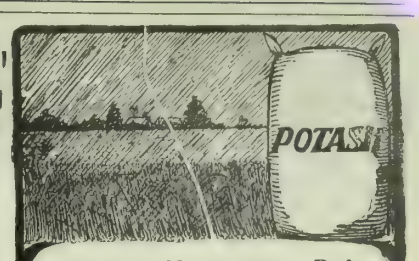
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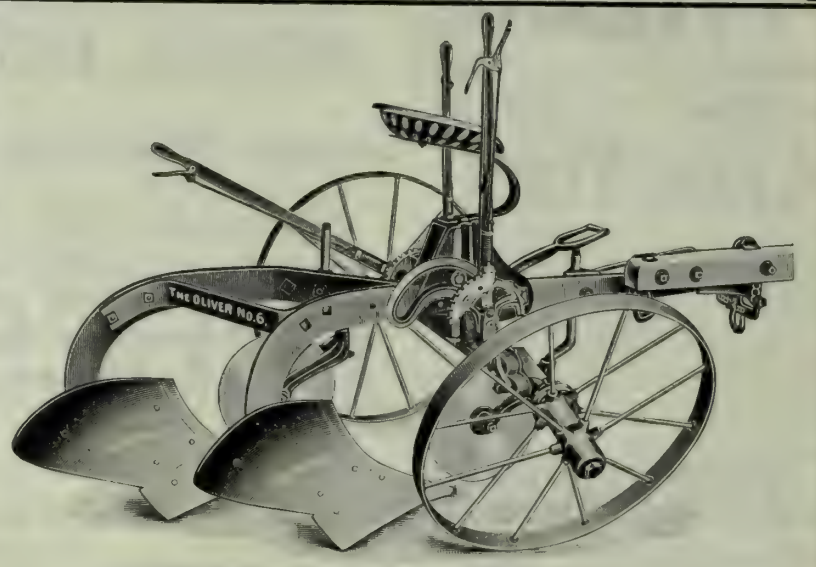
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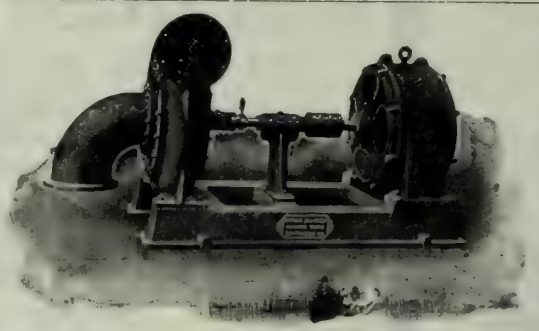
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

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Red Polled Cattle.

It is some time since we have had a portrait of a Red Poll and we are glad to show a typical animal of the breed—the bull, Corbett 3174—furnished us by Mr. C. A. Stowe of Stockton, Cal., who breeds this class of cattle. While his weight of about one ton would entitle him to consideration as a beef animal, still his ancestry having been selected for use upon high-priced farms in eastern Iowa, and in old England, to produce the "granger cow," so that although this bull has been the sire of many show animals of great scale, still his success as a sire in this direction has been more because of his having been mated with cows of large frame and great weight, than to the quality of blood inherited by him from his ancestors. The Red Polled cattle in their native home in England, in both Norfolk and Suffolk counties, have held their own against the invasion of all the other improved breeds for over 150 years.

No other breed has found lodgment in the districts which as early as 1792 Arthur Young characterized in his survey of Suffolk as being the "home of the Red Polls." With the introduction of these red, hornless animals to the United States in 1873 came steadily an increasing demand for them, so that they have spread from Duchess county, New York, all over the Middle West, only shortly preceding their introduction to California, and they are now bred in different counties of our State, and from the reports obtainable and from their exhibition at our fairs, grow rapidly in popular favor whenever introduced.



Scene in a Redwood Clearing in Northern Sonoma County.

An early introduction to this State was made in 1887, when they were brought to Petaluma from the same herd in Iowa, in which the animal shown on this page is owned. An occasional good milker can be found in most breeds of cattle, but in this breed, bred carefully for many generations for the combined purposes of beef and milk, a sure guarantee is given by this hereditary tendency of the usefulness of the produce from the herd. The gentle, quiet disposition of the Red Polls, with their good rustling qualities, fits them to thrive on scanty pasture. Their hornlessness makes them especially adapted to use on small farms and in dairies where they must be much handled. Their uniformity, not only because they make a fine appearance, but in a case of a bunch of steers for sale, adds materially to their price.



Red Polled Bull Corbett 3174—A Good Representative of His Breed.

A Farm in the Redwoods.

Last week, in connection with a grand picture in a redwood grove, we remarked the difficulty of eradicating the tree. The clearers of redwood farms have to work long and patiently. One who lives among these beautiful scenes is trying to utilize the ground for browsing and is thus cleaning it with the assistance of Angora goats. Mr. Alex Ragle, near Forestville, has a flock of about a hundred fine Angoras and finds them profitable producers as well as assistants in cleaning the ground. Mr. Ragle states that the suckers springing from the newly cut redwood trees are good browsing for the goats and that during the time that he is thus destroying the forest his herd is a profit for him for mohair and mutton. When the undergrowth has thus been destroyed, the land makes the best of pasturage for other stock.

The picture on this page shows stumpage ground with a small orchard to the right closely observed and will give one a fair idea of what the difficulties are that face the farmer in the redwood forest districts, yet the redwood district has a great advantage perhaps in soil and a moist climate where no irrigation is required.

At one time people used to say of this locality that when the trees were all cut and sawed that the ground would be deserted by the owners, yet time has proved the value of the property for agricultural purposes as well as for lumbering and the region is developing rapidly.

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The Week.

Every interest seems to be dulled this week by the startling condition of things in Russia, and even the war on the eastern end of the empire seems as nought to the trouble at its heart which lies near the western extremity. Affairs have certainly taken on a revolutionary aspect and all the destructive agencies, which have been successfully repressed for a generation past, seem on the point of overturning the present order of things. Whatever may be the opinion of the merit in the uprising or of confidence in the influence of those in charge it is beyond doubt but that the world feels a deep sympathy with a people which is denied all approach to its ruler and all right to right of petition concerning its grievances. Such a governmental attitude is out of all harmony with the twentieth century, and when instead of respectful hearing those who come without arms and with declaration of peaceful intent are murdered as they come, the world's horror and resentment are beyond expression. Anglo-Saxon people secured for themselves a thousand years ago what the Slavs are now denied and killed for asking. Certainly a regime which proceeds upon such a policy of darkness and cruelty must pass away, and until the great Russian people secure a fair chance for development and progress under a just, fearless and humane administration, whatever its name may be, the world will not be content.

Unless the Russian situation speedily clears, the world's markets for the coming crop year are likely to be considerably affected. Perhaps one of the first manifestations of this is the local hardening of wheat futures, although we have a crop outlook which would of itself produce quite a different effect. In San Francisco wheat has been quiet during the early part of the week, but it closes firmer with May wheat 2½ cents and December 1¼ cent better than a week ago. Chicago is also improved, but not so greatly. Spot wheat is firm and higher. One cargo of wheat has gone out, but there are no new charters—in fact, the chartered fleet has been worked down to two ships. Barley is higher and oats strong, particularly fancy oats. All beans except Limas are steady to firm. Bran and middlings are well held in few hands, but trade is light. Hay is weak, though 3800 tons have been used on a Government contract, and other hay is going to Asia; hay stocks are, however, heavy and the local demand light, with lower quotations. Beef and mutton are weak and grass-fed meats are coming in; hogs are firm at former prices. Butter is higher and active outside demand exists, but possibly the holding back of supplies by bad weather has some influence; cold storage butter is being pushed strongly. Cheese is barely steady, the supply fair and demand light. Eggs are lower, but going better at the decline, some being shipped to Nevada. Medium to large fat chickens are particularly firm. Potatoes are in good supply, being largely bought by dealers and firmly held. Some Colorado potatoes are here, costing, however, more than local stock and no better. Onions are higher; 600 crates are in from Australia and more said to be coming. Apples are unchanged. Oranges are in larger supply and better demand, selling readily at former prices. Lemons are quiet and slow, while limes are light both in supply and demand. Dried fruits are quiet and steadily held—fancy peaches, apricots and pears are high. Nuts are in small supply and unchanged. Hawaiian honey to the amount of 600 cases, light amber grade, has arrived. Hop holding is firm and little doing. Wool is strong; 2000 bales arrive from Australia under bond to go East. One bale of spring clip has come from Kings county. California and territory wool is largely bought ahead.

The effort to reorganize the raisin interest is apparently proceeding very satisfactorily. At a meeting last week in Fresno action was had in harmony with the outline published in the PACIFIC RURAL PRESS of January 14. Local authorities in the raisin district pronounce the plan proposed is the best ever submitted to the growers. Briefly it proposes two separate companies, one to handle the raisins, the other to own the packing houses. The first is the commercial company, to transact all the business; the second is to have but one function, and that is to own the packing houses and keep them inalienable for the growers. Outside of this one point the organization is to be on exactly the same lines as the one proposed in the report to which we have alluded. It now remains to be seen how rapidly the growers will sign contracts. If this is done sufficiently the outlook in raisin production will have new features of security. If the raisin growers can do this it will have a very good effect on organization in all other fruit lines.

Speaking about raisins suggests the fact that table grape growers in the Sacramento valley are assuming the confidence which the growth of their interest should justify and are calling upon the Government for consideration. At a meeting of the Sacramento Development Association last week, action was taken in view of the fact that the table grape industry of the Sacramento valley is among the most important and valuable. The United States Department of Agriculture is devoting much attention to viticultural work, principally with wine varieties. The Department is asked to establish in the Sacramento valley or foothills adjacent a viticultural station, to be devoted to work with table varieties of grapes. There are certainly many things of particular interest to table grape growers which should be done.

Congress is going to take a share in California river improvement. In the new river and harbor bill there will be a provision directing the Secretary of War to appoint three army engineers to work in co-operation with persons appointed by the State of California to investigate conditions pertaining to the Sacramento river and report a feasible project for the control of the river and the improvement of the channel. The committee is convinced that it is the duty of the Federal Government to unite with the State authorities in controlling the river. All of which suits California.

What organization will do for people who get together effectively is shown by experience in Alameda county. The success of the past two years in handling the rhubarb crop of the county has led to the perpetuation of the Alameda Rhubarb Association, which was originally something in the way of an experiment. These growers have secured more pie than some other groups of co-operators.

QUERIES AND REPLIES.

California Wheat Growing.

TO THE EDITOR:—Referring to the article in the PACIFIC RURAL PRESS, headed "Conditions Affecting Growth of Wheat," do you consider the statement "we (in California) have no temperatures which interfere with the growth of wheat" well founded? I am much mistaken if serious injury by frost has not resulted to crops in the past twenty years.

In your opinion, is the crop of green manure obtained by fallowing not quite as beneficial as the moisture conserved; and does the humus, resulting from said crops of green vegetation, not assist materially in retaining the moisture? The foregoing leads to the suggestion that the criticism so frequently heard, that "our farmers do nothing to fertilize their wheat lands," is unjust, inasmuch as the use of these lands is sacrificed each alternate year by fallowing, and this method seems to me the only practical means of fertilizing for wheat.—E. J. D., San Francisco.

We were speaking in general terms and endeavoring to show that wheat is being sown somewhere in the State all through the rainy season, and it is also growing all through that period. The occurrence of frost is local and sometimes too sharp to suit the growing crop, as you say, but on the other hand there are vast areas where injury to frost by wheat has never been seen. When we made the remark we had particularly in mind the winter-killing of wheat by ground freezing and heaving—and that we have never seen in California.

Summer fallowing is more valuable, as it turns in green crops and there is certainly a fertilizing contribution to the soil thereby, and as you increase humus you also increase the retentiveness of the soil for moisture. But in spite of this contribution, which is large in some places and small in others, the chief efficiency in the bare fallow which we practice in this State is the splicing of part of the moisture of one season to the whole of the following season. You are right in resenting the charge that our farmers are doing nothing to fertilize their wheat land. But, in fact, in the way summer fallowing is done and in the exceedingly little green stuff which is turned under in many districts on the plains, they are doing hardly anything.

Soils for Asparagus.

TO THE EDITOR:—Will you kindly describe the soil which is best for asparagus, and how to proceed on land which has to be irrigated?—READER, Inglewood, Los Angeles county.

It is, of course, possible to grow asparagus on any good garden soil, made particularly light and rich by the very free use of stable manure, as is customary in the preparation of asparagus beds in gardens, but commercial asparagus growing in California is chiefly undertaken on those soils which are naturally rendered especially suitable by the presence of a vast amount of decayed vegetation, and these soils are chiefly found near the ocean, being a combination of river sediment and peat formed by the decay of rushes, etc. The same condition prevails on the reclaimed lands of the Sacramento and San Joaquin rivers, in the central part of the State. We doubt if it would be at all profitable to undertake asparagus growing upon upland soils, where a great amount of manure would be required and probably considerable irrigation. The asparagus grown on the naturally rich and moist soils of the low lands would be larger and much more cheaply produced. As to methods pursued with asparagus and other commercial vegetables in California, you will find full details given in our book on "California Vegetables."

Pyrethrum Will Not Work That Way.

TO THE EDITOR:—Can you inform me about pyrethrum, as I am told it is grown in your State quite extensively. Does it grow from the seed and is it a large plant? I am told that no insect will stay near it. I raise melons and am bothered with striped bugs very much and was thinking if it was not a large plant I could plant a seed in each hill and keep the insects off the plants.—ENQUIRER, Dundee, Mich.

In reference to the use of pyrethrum your plan will not work because the plant does not blossom until the second year; consequently you would effect nothing by planting in the hill with melons. Pyrethrum is really the plant from the blossoms of which insect powder is made. But in order to be quite effective it has to be ground exceedingly fine—finer than it is practicable to do it with any farm appliances. The presence of the growing plant does not seem to drive

the insects away from other plants which are near it. We have observed that frequently so it is not likely that pyrethrum would in any case be useful in the way you mention.

Various Tree Troubles.

TO THE EDITOR:—I send a Rhode Island Greening apple tree three or four years old. It was 6½ feet high, apparently healthy, and with well-developed branches. The soil is near creek bottom, deep, well drained, light to rather dry during summer. What is the matter with the roots? I send the tree to you just as it came from the ground, without removing anything. Is it the fault of the soil or is the root stock itself to blame?

I have other apples and also various kinds of fruit trees in various kinds of soil that seem to work loose whenever the wind blows. Some of them, especially apricots and Japanese plums, have made a particularly thrifty growth above ground. Is there any remedy in planting, cultivating, or tying of trees?

I also enclose tip of apple branch. What is the cause of and what is the remedy for the terminal swellings.

Also, will pruning young, thrifty trees, just after buds have opened, tend to make them die from "sour sap?" Last year I had several trees that were pruned late die after the very heavy spring rains from what I supposed was so-called "sour sap" caused by too much water. However, the soil was pretty well drained and many of the trees are now sprouting from the roots, even where the top is entirely dead.—HAMILTON OTIS, Cazadero.

The tree first mentioned failed because of total loss of lateral roots—nothing but a club remaining. It was apparently destroyed by a gopher or some other subterranean rodent.

Trees in windy places should be staked until they get rigid enough to stand the wind. The ground around wobbly trees should be dug as soon as dry enough to work well, and the movement checked by the filling in around the stem.

The tip enlargement is due to powdery mildew, which struck the new growth early last summer. Whenever young shoots show this fungus they should be sulphured.

Your young trees probably had "sour sap in the top." This is caused by frosts after the growth has started. There are cases in which trees which die back to the ground through sour sap in the root may have shoots from below, because the root has in part re-established itself by the growth of new fibers, etc. The probability is, however, in your case, that the root was sound and the top injured, as first stated.

Lupins for Green Manure.

TO THE EDITOR:—I send you a few clover and lupin plants that I thought might interest you. The soil where the plants were growing was very poor and sandy. You will notice that the lupin roots are covered with bacteria much more so than the clover's. The plants that I send you were growing on less than a square foot of land. What is wrong with the lupin as a cover crop? As late as twenty years ago our grain fields used to be one blaze of color from the white, blue and yellow lupins. The Germans use it for a fodder plant.—CHARLES BLOM, Orangevale.

The lupins have a splendid show of tubercles and their value as a cover crop when making such a growth is beyond question. The trouble with the lupin generally is that it grows too late in the season for plowing under while moisture remains to secure its decay, without using moisture which should go to the main crop. In some places it is otherwise, and when so the wild lupins leave little to be desired in the way of winter-growing nitrogen gatherers.

Killing Scales on Clematis.

TO THE EDITOR:—I have a clematis infested with black scale and it has been suggested that I apply to you for a remedy. I shall be very much obliged if you will give one.—AMATEUR, Oakland.

The best way to treat a clematis infested, as you describe, is to cut it back very thoroughly. If it is a plant making only small shoots it can be cut back to the ground. If it has large branches, retain them and cut back all the side growth, then clean all the stubs which remain thoroughly with a stiff brush and soap suds made from ordinary laundry soap, in which a little kerosene has been vigorously stirred. By burning the rejected seed growth and thus cleaning what remains, it is probable that you can hold the insect in check. The clematis is improved by cutting back; in fact, in cold climates it is common practice to cut back the plant to the ground each year.

Will It Do for Peaches?

TO THE EDITOR: — Would you plant peaches on black alluvial soil which before reclamation by levees was overflowed by Kings river? It is now sub-irrigated by the same river and in ordinary or normal conditions the water line will be about 6 feet below the surface and during high water less than that. Part of the tract has much sand mixed in the soil and it is on that that I thought of planting trees.—ENQUIRER, Laton.

The soil which you describe would seem to be excellently suited for peach growing, but the danger of too frequent or too protracted rise of the water level is rather great and might seriously injure the trees. One cannot always tell that beforehand. It seems to depend very much upon local conditions of soil and water. If the rise is only for a short period and the soil is of such character that it passes away readily, the trees will do very well. The best sort of evidence is the occurrence and behavior of trees on just such a condition of soil and water as you have reason to expect. Can you not find such a situation near the land which you expect to plant? If so, be governed very much by what you can see of the thrift and satisfactory behavior of the trees. Undoubtedly they will be safer on the land which has plenty of sand because the water will move more freely and will not assume that stagnant condition which seems to be most destructive to roots. We cannot give you more definite answer. It depends very much on the condition of things.

Pruning Loganberries.

TO THE EDITOR:—Shall I prune loganberries to the straight canes springing from the ground or back to new wood—shoots from the canes?—GROWER, Delmar.

Ordinarily at this time of the year or earlier, everything except the new growth of last summer coming from the ground or very near to it should be removed. It sometimes happens that a second or lateral growth is made on these shoots, and as that is coming bearing wood it should be retained also, or shortened in if there is too much of it. It also sometimes happens in practically frostless places that new laterals may come on old wood and bear a little rather early fruit, and it may be worth consideration. Generally, however, only the strong new growth coming from below is all that should be retained.

To Improve Overirrigated Land.

TO THE EDITOR:—What would you advise me to use as fertilizer to renew land that has been damaged by excessive irrigation? Could I use gypsum to advantage or should I use a fertilizer containing a greater variety of plant food?—SUBSCRIBER, Kingsburg.

This cannot be intelligently answered without knowing in what way the land has been injured. If it has simply been made swampy and is now freed from excess of water, the use of lime or gypsum and plenty of cultivation will help it. If it is alkalied and is now drained it needs a good washing out with fresh water. If it has been leached of plant food by too free movement of water use stable manure or a complete fertilizer.

Plants for Waste Water.

TO THE EDITOR: — What would you consider the best plant to take up moisture in sink holes, that is, where the water is drained off on the surface of the ground?—READER, Dixon.

We are not sure whether you wish to dispose of waste water from house drains or to grow something on low places which receive water from adjacent higher lands. If you wish to dispose of house drainage plant eucalyptus trees around the sink hole. If you wish to make feed on places liable to submergence put them down to Australian rye grass.

Not an Edible Banana.

TO THE EDITOR:—A neighbor of mine has bought an Abyssinian banana (Musa ensete) which he has planted in a hillside several hundred feet above the valley and hopes to harvest much fruit in future years. The nursery catalogues classify this variety as an ornamental plant only in California. Would you kindly inform me whether it produces edible fruit in its native home?—SUBSCRIBER, Santa Clara county.

This plant does not bear edible fruit anywhere. It is simply an ornamental species at home and elsewhere.

Census Reports.

TO THE EDITOR:—Can you furnish the reports of the census of 1890 and 1900 of California as a State?—READER, Kingsburg.

We cannot. The figures are included in the general publications of the Census Office at Washington A separate preliminary publication on California Agriculture was made, however, and possibly copies of that can still be had by addressing Mr. S. N. D. North, Director of the Census, Washington, D. C.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 23, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

The continued warm weather and frequent rains are causing some apprehension among farmers as to grain prospects. The soil is completely saturated and farm work is temporarily suspended. At Wheatland the precipitation for the season is over 12 inches; last season at same date 7.73 inches. The rainfall has been heavier north of Wheatland and heavy snow has fallen in the mountains. Grain is reported in excellent condition and making fair growth, but would be benefited by sunshine. A large acreage has been sown to wheat, oats and barley, and will be increased if conditions are favorable. Pasturage is abundant and of good quality. Stock are in prime condition. Pruning is progressing in orchards and vineyards.

Coast and Bay Sections.

Warm and cloudy weather prevailed most of the week, with frequent heavy rains in all sections. The soil is thoroughly saturated and in some places is too wet for cultivation. At Healdsburg the rainfall for the week was 2.25 inches. The precipitation for the season is greatly in excess of last season's in all sections, and in some of the southern districts it is fully four times as great as at this time last year. Prospects for good crops of all kinds were never better. Grain is in good condition and making fair growth. The acreage in grain is large and will be materially increased. Green feed of excellent quality is abundant and stock are doing well. Pruning is in progress in orchards and vineyards.

San Joaquin Valley.

Generally cloudy and warmer weather with frequent showers prevailed during the past week. The rainfall averaged over an inch throughout the valley, with heavy snows in the high Sierra. Seeding is about completed in the northern portion of the valley, but continues in the central and southern portions. Grain is coming up well, a good stand and color; early sown is making rapid growth. A large acreage will be sown to grain. Green feed is plentiful and stock are healthy and in good condition. Vineyard and orchard pruning is progressing rapidly. Almond buds are beginning to swell in the Lodi district.

Southern California.

The weather was warm and partly cloudy, with generous rains at the beginning and close of the week. The recent heavy rains have been of great benefit to grain, grass and orchards. At Los Angeles the total for the season is 6.10 inches; last season 0.57 inch. Nearly equal amounts have fallen in other districts. The soil in some sections is too wet for cultivation, but, in other places, plowing and seeding are progressing rapidly. The acreage in grain is reported larger than for several years. Early sown grain is in excellent condition and making good growth. Green feed is abundant and growing rapidly, and stock are steadily improving. Oranges and lemons continue in good condition; picking and shipping are progressing.

LOS ANGELES SUMMARY.—Warm and good growing weather following the rains caused vegetation to spring up on every hand. Young grain and pasturage are making good growth. Plowing and seeding continue, with soil in fine condition. Pruning and cultivating orchards progressing rapidly.

EUREKA SUMMARY.—Farmers are plowing and putting in spring crops. Oats continue making rapid growth. Grain sowing in some localities is practically finished. Snowfall in mountains light and not far down.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, January 25, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	3 20	21 55	23 35	24 52	66	42
Red Bluff	4 16	21 74	13 62	14 21	60	46
Sacramento	1 30	11 82	5 13	10 68	60	44
San Francisco	2 69	14 10	7 10	13 38	60	46
Fresno	0 56	6 97	1 47	4 63	66	40
Independence	0 32	0 97	0 42	2 50	60	30
San Luis Obispo	1 50	8 69	1 90	11 52	68	40
Los Angeles	1 04	6 10	0 57	8 82	78	46
San Diego	0 06	4 73	0 46	3 85	70	52
Yuma	0 00	1 87	0 66	1 98	76	46

THE DAIRY.

Extending Educational Influences Among Dairymen.

By Dr. Leroy Anderson, Director California Polytechnic School, San Luis Obispo, at the Creamery Operators' Convention at Fresno.

If I am to interpret the word dairyman in its broadest sense, I will be justified in including therein all persons who are in any way interested in the dairy industry. There exists in the minds of many a definte distinction between those who are engaged in the operation of creameries and cheese factories and those whose business in life is to care for the cattle and produce the milk which operators work upon. What I shall have to say is so general in nature that it does not seem best to make this common distinction between creamery operators and milk producers. I am not prepared to bring to you any new or sensational methods of extending educational advantages to dairymen. What I am prepared to do is simply to mention the various methods by which education is to day disseminated, with a brief discussion of the various methods. In addition to this, I may add a word to what is already in the minds of many thinking people of our State who are looking to a more universal extension of that education which relates to agricultural pursuits. The lines of education naturally divide themselves thus into two main classes: One which we may call "Home Study" and the other "Schools and Colleges."

HOME STUDY.

Periodicals.—The press of our country is looked upon as one of the most potent factors, not only in shaping public opinion and influencing the policies of Government, but also in disseminating a vast amount of valuable information. Every industry has its periodicals, and more and more importance is being placed upon the contents of those periodicals. Of course, there are large and small, weak and strong in the line of periodicals as well as in other things. A periodical is strong and of importance in proportion to the strength and position of its contributors. The dairy industry is to be congratulated on having a large number of well edited and well written periodicals ranging in scope from the care of the calf to the marketing of the finest dairy product.

We would not be far wrong if we should look upon periodicals as the means which has been longest in use as an educational feature. You will be interested in a quotation from the Utica (New York) Herald of March 30, 1875, from the pen of our own Prof. E. J. Wickson. He was at that time agricultural editor of the New York paper and wrote as follows concerning the herd of Holderness cattle owned by Mr. T. A. Cole of Solsville:

> Now, let us look at the result of the season's operations. The nineteen cows turned out 5860 pounds of butter, or an average of a little over 308 pounds to a cow, for the season. This butter sold for 30 cents and 36 cents a pound. Supposing the average to be 33 cents a pound, we have an income of a fraction over $101.64 from each cow, or $1931.16 from the herd. In addition, Mr. Cole raised nineteen calves, fourteen of which he sold at $50 apiece. He says he thinks he could have brought his yield up to 350 pounds per cow if he had not raised the calves. This, then, adds $700 to the receipts, making them $2631.16 for the herd, or an average of $137.50 for each cow. There is profit in such a herd. As showing the confidence of former buyers of his dairy stock, Mr. Cole remarked that nine of the fourteen calves were sold to former buyers who had stock from his herd now in milk.

This is an interesting bit of dairy history, and while it is not so old but that we might find still older, yet it is old enough to illustrate our point.

One of the chief advantages of periodicals, as I look upon them, is that they keep us up to date. New things are continually coming, new machinery is being invented, new methods introduced and the weekly or the monthly dairy paper which comes to our desk tells us of these improvements, of their efficiency or their uselessness, more quickly than can be told by books. I look upon the periodicals as of so much value as an educational feature that I trust every dairyman has at least two or three of the best in his house or in his creamery.

Books.—If we attempt to carry on some consecutive logical study of the business we are engaged in, we can not depend upon periodicals, but must look to books for guidance and assistance. Many a man has lifted himself to a higher grade of efficiency by consistent study of valuable books. In our business it can no longer be said, as it was ten years ago, that there are few or no books that are up-to-date in agricultural or dairy lines. Since our experiment stations have gotten upon a sound footing, and since the agricultural colleges have taken a more vigorous life as was begun in the last decade, many of our best men have devoted their time and talent to tabulating the results of experiments and explaining in clear and concise language the things that every progressive dairyman must now know. These they have published in book form

More reliable than periodicals, because they are not apt to contain information which has not been proven correct, books are more important for giving the student a thorough foundation in his business. Moreover, many of them treat to some extent of the elementary sciences underlying the dairy processes, and thus put the dairyman upon a true foundation before giving him the instruction as to scientific practice. If I were asked what books would be the best to obtain, I would hardly know where to begin or where to end. The dairyman can not go far astray in selecting from the lists that are issued by our best publishers.

Correspondence Courses.—Many of our agricultural colleges are to-day extending the benefits of their courses of study to the people at large in so far as such can be accomplished without the student's actual residence at the school. Correspondence courses have gotten beyond the experimental stage. They have proven their worth and are growing in popularity and usefulness in every State, so far as I know, where they have been permanently established. They have an advantage over books and periodicals in that the student comes more directly in contact with the instructor and receives more of his personality, and has some one to whom he may always submit knotty questions. The better correspondence courses are those which carry on a logical, consecutive study on the subject. From my acquaintance with such courses I am inclined to favor the Pennsylvania plan, which requires a satisfactory examination upon one lesson before another is mailed. While the correspondence courses may be taken by any person, still, so far as our business as dairymen is concerned, I believe that such a course will be found of most advantage to one who is in actual dairy practice. Many things which do not seem clear to the reader are made perfectly clear if the reader can carry the idea to the dairy, or to the creamery, and there find actually in operation what has been called to his attention.

Institutes and Conventions.—What the instructor sends to the student through the mail in the correspondence courses he brings to him personally in the institute or convention. Here then we get that important educational feature, namely, the personality of the teacher. I would not consider the institute more important than the reading course. I would rather consider it an accessory thereto intended to supplement and make more real the information of the reading course. From my brief experience I am led to look upon the value of institutes and conventions as lying, not in the actual instruction given, but in the new ideas awakened and the enthusiasm instilled for more study and a yearning for more knowledge on the part of the hearer. I say this even with the words of some farmers ringing in my ears that they consider the instructive feature of the institute of greatest importance. There are very few institutes or conventions which do not mark the beginning of new life and new vigor in some one who has been in attendance. The enthusiasm of the meeting is dependent to quite an extent upon the attendance. Therefore, for the best good we should do our best to increase the attendance upon such meetings, as well as demand wise and enthusiastic speakers.

SCHOOLS AND COLLEGES.

This may well be called a day of schools. All the children of our land are expected to spend a portion, at least, of their life in school. Our country cannot depend upon periodicals or books or reading courses to properly educate the young. However efficient these latter agencies may be in some respects, they can never replace the school. There the student is away from home and is surrounded by an environment of study and is filled with the school spirit and school enthusiasm, and everything tends in the direction of the development of the intellectual faculties. Moreover, the student is close to the living teacher. I want to discuss schools under three heads:

Agricultural Colleges.—At the present time in many States in the public school the boy may learn to read and write; he may learn his arithmetic and his Greek and Latin, but if he wishes to learn anything about dairying or agriculture he must go to college. Agricultural education began at the top, but we may congratulate ourselves that it is working downward. The pedagogy of agriculture has been worked out in our colleges and universities, and it has been worked out most successfully. It is a source of gratification that a person need not take the four-year course in college in order to receive some instruction in dairying. Special courses and the short courses which admit students without examination are doing a vast amount of good work in advancing the dairy interests. The agricultural college that is well supported by the State has an up-to-date equipment of all machinery and apparatus. If the dairyman can spend only one, two or three months away from his business he can take dairy instructions in large doses. He can swallow it in large mouthfuls and digest it at his leisure on his return to his usual labor.

I should possibly have mentioned the agricultural experiment station as one of the means of extending educational influence under the head of home study, but I will mention it here as the most important addition to the agricultural college. In fact the agricultural college would not be what it is to-day were it not for the experiment station. We would not know what we know to-day about dairying without experiment stations. The two should therefore go together, one to supplement the other. I believe that too much value cannot be placed upon instruction of the agricultural college nor can our State spend too much money in giving our agricultural college the best farm that can be found in the State, and the best equipment that money can buy, and the best instructors that the nation can furnish.

Secondary Agricultural Schools.—There has grown up in the last few years, following the example of the State of Minnesota, a kind of agricultural school which is commonly called an agricultural high school. I believe that there are at the present time, in connection with the agricultural colleges, such schools established in Nebraska, Rhode Island, Maine, Washington and Oklahoma. These schools invariably receive students who have completed the grammar schools and give a course of instruction two or three years in length, each year varying from six to nine months. The success of these schools is most marked. Where the four years' course of the college may have its students in tens the school of agriculture under the same management will number its students by hundreds.

There is another class of these schools which should be mentioned—those which are not connected with a university or college. The State of Wisconsin has the honor of establishing the first county agricultural schools, which I believe are also of high school grade, the course of study extending over two years. Other secondary schools devote much attention to agricultural and dairy subjects, as, for instance, the Winona Agricultural and Mechanical Institute in Indiana and the California Polytechnic school at San Luis Obispo which devotes its attention to instruction in agriculture, mechanics and domestic science. You will be interested to know that of the fifty-three students enrolled at the latter institution, of whom forty-one are boys, twenty are taking the course in agriculture. From my experience in the East and the knowledge of institutions which have been established on similar lines of agriculture and mechanics, I feel that this school is to be congratulated upon having one-half of its male students taking agriculture. Usually in such institutions the students in mechanics far outnumber those in agriculture.

The success of the secondary schools of agriculture and those which give much attention to agriculture shows to be true the oft repeated statement that the large majority of men who expect to spend their lives in agriculture or dairy pursuits cannot afford to spend four years in college, which presupposes a high school course. The secondary school is, therefore, what is needed and needed badly. It takes the boy from the grammar school and puts him through a course which will fit him to manage a farm, orchard or dairy for himself or others. It does not need so much land nor so large an equipment as the agricultural college with its attendant experiment station, because it does not undertake experimental work on an expensive scale. It does need a good-sized farm, good laboratories, live stock, tools and machinery that may be looked upon as types of their kind. Such schools are yet in their infancy, but their success is assured and I am confident that we will see more and more of them as the years roll by.

High Schools in Rural Communities.—I am very glad to note the interest which is being aroused looking forward to giving agricultural instruction in our high schools. I would not include the high schools of the cities, but still I see no reason why some instruction in agriculture should not be given there. The cities are the natural home of the manufacturing industries. To fit students for these industries our cities are establishing large polytechnic high schools, for instance, Los Angeles is now spending $250,000 on such an institution. If the cities are thus planning to fit and educate their sons and daughters in the industries which they find on every hand, why should not the high schools in small cities and towns give instruction on those subjects which pertain to agricultural pursuits? Why should you and I never be taught to use the Babcock tester until somehow we can go to college? What more useful and instructive bit of apparatus can be added to the chemical laboratory of the high school than the Babcock tester? These are simple questions and their answer is equally as simple. The high school that is to give instruction in agriculture does not need an equipment like that of the secondary school especially established for that purpose. An acre of land is sufficient to demonstrate botany and plant propagation of all kinds. The chemical laboratory which every well-organized high school contains can easily be provided with apparatus for milk testing, pasturizing milk and other laboratory work with milk, also for study of soils, fertilizers, insects and the various other subjects which would make the high school of more interest and more value to the boy or girl living on the farm. That community is a rare one whose environment will not furnish illustrative material in horticulture, agriculture or stock raising or even creamery work. I believe that I have the honor of having given the first instruction in California in scoring and judging cattle. That was done at Berkeley and the animals used for this purpose were the family cows found in the vacant lots about the city. This was not an ideal method, but it was better than no cows.

What is lacking to introduce agriculture into high

schools? In many localities the proper public sentiment is an obstacle, in others the necessary increase in funds may be wanting, but these are minor hindrances in comparison to the great lack in teachers. Without teachers possessing the right spirit and love for their work and having an efficient training, the instruction would be a farce and a hindrance to a noble cause. There is only one place where the needed teachers can be trained and that place is the agricultural college. They may be students of a secondary school of agriculture, but they are not fitted to teach without the higher training at the college.

You may think that I am wandering from my subject. I am only leading you to conclusions. Home study is for the dairyman who is so deep in business and so tied down that he cannot go to school or college. The influences and benefits of education which were not his to enjoy in more leisure days must now come to him through the press, through books or reading courses. But give the boy his training in the schools. Let him absorb the intellectual atmosphere of the schoolroom, of the laboratory and the field even as his lungs take in the morning air. There is no educational influence equal to that of the active living teacher in the midst of well-equipped libraries, laboratories, shops, stables and barns. The school, at the best, can only start the boy aright in his chosen vocation. But let us have the schools to give him the start. There are so many boys to be taught and so much to teach that there is ample room for every grade school that I have herein mentioned.

THE GARDEN.

Propagation of Flowers and Ornamental Trees.

By MR. J. LUTHER BOWERS of Monticello, Napa county, in the San Jose Mercury.

How often has the remark been made, "I cannot get rose cuttings or slips to root?" Having followed this branch of floriculture for some years, I will give my mode of doing the work. I would first state that I followed the directions to the letter and seldom ever had a failure, especially with such roses as Perles des Jardin, Marechal Neil, Lamarque and the La France.

I well remember some fifteen years ago, when gathering rose cuttings, I got a lot of Marechal Neil cuttings from a giant bush on the grounds of the late General John Bidwell at Chico. His florist and greenhouse man, a gentleman of lifetime experience, said: "You are welcome to all the cuttings that you want of the Marechal Neil, but you will never get one of them to grow. I have tried many times and always failed." I got the cuttings and every cutting grew—not one failure. In this lot of cuttings, comprising some forty varieties, and over ten thousand in number, I did not have 2% of failures.

HANDLING CUTTINGS.—I gathered the cuttings during the Christmas holidays. I got only the last season's growth, and, if possible, the growth next to the top end. These cuttings were made as near 6 inches long as possible. The base or lower end was cut off just below a bud and as close to the bud as possible without injuring the same, and the top I cut off just above the bud, so as to have the cutting as near 6 inches long as possible. I then tied the cuttings up in bundles of twenty-five or fifty each, according to the quantity I had of each, using fine copper wire or wire or willow—something that would not rot. Iron or galvanized wire will not do, as it will ruin the cuttings wherever it touches them. I take great care to have the base of the cuttings in the bundles perfectly even and the bundles not too tight, but just tight enough so that none of the cuttings will slip out. When I had my cuttings of each variety ready I put on a label made of a piece of sheet zinc and the name written with a common lead pencil (this kind of label will last for years under ground) and attached the same to each bundle. My next move was to get my heeling in bed ready. I dug out a place, where I knew no water would stand after a heavy rain, to a depth of 8 inches and made the bottom perfectly level, and I then put in a 12-inch board on each side and had a box 12 inches deep without top or bottom, 10 feet long and 4 feet wide. In the bottom of this box I put 3 inches of sand—very fine. I then put in my cuttings, standing them up in the sand so that they were at least 3 inches from either side or end, and just 3 inches from the top. This 3 inches from the top is the most essential part of the whole operation, as here is where the whole success lies. These cuttings were all put in bottom side up, or, in other words, upside down. The bundles should not touch one another. The same kind of very fine sand was then filled in and around and all over the cuttings. This bed of cuttings I never let get dry, neither did I keep it too wet. A very good way to keep this bed always in good condition would be to cover the whole with one thickness of burlap. This will prevent evaporation and hold the moisture. This bed I protected by putting wire netting around, as I did not want anything to tread on it—not even a chicken or a cat. I left this bed in this shape until some time in May, or just as the rose bushes on the outside were in full bloom.

THE HOTBEDS.—At this time I make hotbeds. These are made in the following manner: A frame 100 feet long by 6 feet wide, using two 12-inch and one 6-inch board on the back and one 12-inch and one 6-inch board on the front, using 16 feet of boards. This gave the box a fall of 1 foot in 6, or just enough fall to drain off the rainfall. At every 3 feet a crossbar of 1½x3 inches was securely nailed for a sash rest, and to hold the bed in shape. This box or bed was made in a perfectly level piece of ground and the sash was made of 1x3-inch material, halved at each end and nailed together, and was 3x6 feet, and was covered with house lining. Of late years I do not use the sash, but sew the cotton together and make my beds 16 feet long, cut the cotton 6 feet 8 inches, sew it the short way, tack one side to back of bed and the other side to a 1x3-inch strip 16 feet long. This can be rolled up and the strip will hold the canvas in place against the wind. Now, in this box I place loosely 15 inches of well-heated horse manure, made level or smooth, and on this 3 inches of sand, the same as in cutting bed. I cover up tight with the cloth or the sashes and leave for one week, or after the first heat from the manure is spent. The bed is now ready for the cuttings. At this point I have to take great care. The top, being 9 inches under the ground, is perfectly dormant, and the bottom, being only 3 inches from the surface, have received the heat from the sun and are a perfect mass of roots, and great care has to be taken to pull the bundles apart to keep from breaking the white, tender roots. This work has to be done with care, and each bundle should be kept in a pan of water until ready to place in the hotbed. To begin putting in the bed, a wall of sand should be placed at one end; the sand should be moist enough to stand. Place the cuttings in natural position 3 inches apart; again wall up the sand, then another row of cuttings where room was scarce. I have placed the cuttings as close as 1½ inch and the rows only 2 inches apart. When I have a section planted I give a good soaking and put the cover on. After the cuttings have made 2 or 3 inches growth they can be hardened by leaving the cover off at night, but never during the middle of the day, as evaporation will be fatal. When the plants are four or five weeks old, if for sale they can be potted, or, if for border, can be at this stage set out, if shaded.

GROWING IN A SMALL WAY.—The above plan has been given to show how roses are grown in a commercial way. The same plan can be followed in a small way, and if plans are taken the hotbed can be dispensed with and the cuttings can be taken from the healing bed and planted in rows in the open ground. In this case when placed in the heeling bed they should be set in rows singly and not over 2 inches of sand should cover them, and they can be left a little longer. The soil where they are planted should be very rich with cow manure, well prepared, and several times worked at least one month before wanted, and the soil kept very fine. Or, if one should want to use a hotbed, take the cotton lining of a sugar sack and make a hotbed just 5 inches narrower each way than the cloth is when opened. Tack one side to top and tack the other side to a strip or old curtain pole or broomstick to roll on. A bed of this size will hold 100 plants. If directions are followed not 5% will fail to grow.

TEXAS UMBRELLA TREE.—This is one of the handsomest avenue trees that now adorns our California avenues, and there is not a tree sold to-day by the average nurseryman of this State that is so untrue to name as the Texas umbrella tree. Nothing is so provoking to any one, especially a newcomer to our State, to see one of these beautiful trees, with their systematic shape and dense foliage, then go to some nurseryman and order a lot of these trees for some avenue, then some four or five years afterwards find he has a China umbrella tree, something he did not want—a tree that has no beauty or shape. And why nurserymen will charge 40 or 50 cents and even $1 for them, I cannot see.

The proper way and only way to know that you are getting the pure stuff is to go to some tree that is entirely isolated and get the seed, and be sure that no tree of the China variety is closer than ¼ to ½ mile. Gather the green berries just as they are and mix them four parts fine sand, one part berries, and bury them somewhere where they will not be disturbed and where they will not become dry; also where they will not become too wet. If in danger of moles or gophers, wrap up in piece of wire netting such as is used on screen doors. In the spring, when all danger of frost is passed, plant in rows 3 feet apart and 3 or 4 inches apart in the row. Never use any water unless the plants seem to stop growing, and if water should be used make a V-shaped trench as close to the plant as possible and cover up with dry dirt as soon as absorbed by soil. I have grown trees this way 6 to 8 feet the first year from the seed.

Cotton Ripening.

TO THE EDITOR:—I have raised cotton in the South and have seen those crops on the Merced river spoken of in your paper. I would call the attention of your readers to the fact that only one of several crops raised there really matured. It was raised by Mrs. Strong. A light frost in October checked its growth so that it matured its bolls. The other crops planted there and that I have known elsewhere—also a test of my own—just grew and kept green until the rains caught them—fine, thrifty plants, beautiful bolls of all sizes and stages, but little ripe cotton. I am convinced that no cotton will grow in this climate which does not have six months growth and which does not have that growth checked in time to ripen before the rains. I would like to hear from others on this point. S. E. SMYER.

Le Grand.

THE IRRIGATOR.

Water Rights in California.

NUMBER IV.

Written for the PACIFIC RURAL PRESS by SAMUEL C. WIEL.

HOW AN APPROPRIATION IS MADE (CONTINUED).—The mere diversion itself without the intent to apply the water to a beneficial use will not, of course, be enough; as where water is diverted merely to drain the bed of a stream so that it can be mined. (7 Cal. 261.) But when all requisites are present the right to the water dates back by relation, as we have seen, to the posting of the notice. (C. C. 1418). The actual application and use of the water may then follow, but need not do so immediately; the right is already complete, and the failure to make use of it within a reasonable time (130 Cal. 290 at 296) is only evidence of abandonment, to be considered hereafter. (115 Cal. 496, 60 Am. St. Rep. 806, note). There must, however, be apparent ability to apply and use it as intended; otherwise, though the construction work will be completed, there will be no bona fide intent to use it for a beneficial purpose, which, as we have seen, is also an essential. The absence of an apparent ability to use the water at completion is evidence against the bona fides of the intent (which must have a reasonable foundation), as in the case of gathering water in a reservoir for mere speculation. (15 Cal. 271.)

There having been a proper notice, a bona fide intention to apply the water to a beneficial use, diligence in the construction work, and an actual completion of it, the right is complete, and dates from the posting of the notice. (C. C. 1418).

EXERCISE OF THE RIGHT.—We now leave the questions arising out of the obtaining of water rights and take it as granted that a valid water right has been obtained by appropriation, as previously set forth. The inquiry now is as to the limits within which the water can be then used. The limitations to be considered are (1) those arising out of the nature of the right; (2) those concerning the manner of use; (3) concerning the amount used; (4) concerning the purpose for which used and the place of use.

1. The right is in the nature of a grant of favor or franchise from the Government to use the water (6 Cal. 548 at 558; 75 Cal. 464 at 483); that is, it is usufructuary solely. There is no property in the channel itself, nor in the water itself, nor in the natural flow. As there is no property in the channel itself obtained by appropriation, the same channel may be used by several appropriators, as where one man had appropriated water and a later comer above stream poured water into the channel and then diverted it again before it reached the former appropriator, thus using the channel as a link in a long ditch line (7 Cal. 46; 11 Cal. 143). The ownership of the channel remains with the Government. As, in the next place, there is no property in the water itself, the appropriator cannot sue for the value of water diverted by another, but only for the damage to his own use of it (57 Cal. 44). Nor can he set up any claim to water after it has left his ditch (3 Cal. 249), the water itself not being his, but only the use of it, which is what is expressed by saying that the right is usufructuary solely. As, finally, there is no property in the natural flow, it is held that, so long as one's ditch is filled, a later comer may change the amount of the natural flow by taking the surplus (13 Cal. 220), or an artificial flow is enough if one's ditch remains, nevertheless, filled as usual (113 Cal. 182 at 196)—without causing uncertainty, it should probably be added.

Though usufructuary solely, the right is in the nature of real estate. In 5 Cal. 445 the court says: "From the policy of our laws it has been held in this State to exist without private ownership of the soil, upon the ground of prior location upon the land, or prior appropriation and use of the water. The right to water must be treated in this State, as it has always been treated, as a right running with the and, and as a corporeal privilege bestowed upon the occupier or appurtenant to the soil; and, as such, has none of the characteristics of mere personalty." They held that a justice of the peace had no jurisdiction over an action for diversion of water, because it was an action concerning real estate.

It may become appurtenant to the land for which it is used, if any, and in such case passes with it as an appurtenance, if appurtenances are mentioned in a sale (47 Cal. 453; 93 Cal. 365; 75 Cal. 464), for "it can be

transferred like other property" (13 Cal. 220 at 233). A sale of it requires a writing, because, being an interest in realty, it is within the statute of frauds (Griseza vs. Terwilliger, 28 Cal. Dec. 313). The statute of limitations concerning land applies to it (25 Cal. 504).

But the water right is not held like land, absolute, in the full sense; it is held subject to conditions owed to the Government, from whom it is at the start obtained, the chief of which conditions is that it must be continually used for a beneficial purpose. An illustration of this condition of beneficial use, under which a water right is held, occurred in the very recent case of Griseza vs. Terwilliger, 28 Cal. Dec. 113. It was there held that a verbal sale would not pass a water right, as it is an interest in land requiring a writing; but it was held, at the same time, that it would be taken as evidence of an abandonment, signifying an intention to discontinue applying it to a beneficial purpose oneself, as the Government requires. It was even hinted that it was an abandonment ipso facto, which harsh result is not one of the usual consequences of a parol sale of real estate, nor, for example, of a parol sale of an unpatented mining location (51 Cal. 258). If the head note, in the "Decisions," to the Griseza case correctly represents the decision of the court to this effect, then the statement in 13 Cal. 233, that it can be transferred like other property, must be taken with limitations, and the owners of water rights would be in danger of losing them entirely by a parol sale or a faulty deed. At all events, it shows again that there is no title to the water itself; but the right is usufructuary solely.

2. Manner of use: It has been said that the appropriator may use the water in any manner necessary to carry out the use for which it was appropriated (46 Cal. 218). It is a rule applying to all branches of the law of waters that whether the use is by water wheels, taking it by pumps, using it in steam boilers, etc., makes no difference (111 Cal. 473). Under Sec. 1415 civil code, the means by which water is diverted may be changed later, so long as others are not injured by the change. The only important limitation upon the manner of use is that the water must not be used wastefully, for then it is not all used, for a beneficial purpose, as is necessary (C.C. 1411; 132 Cal. 312; 112 Cal. 230). This is the same under the doctrine of riparian ownership, also; e. g., in one case a riparian owner built a dam, spreading out the water over a flat for cattle to wallow in, so that much was lost by evaporation. He was stopped by a writ of injunction (28 Cal. 340).

The use by means of ditches and flumes is, of course, the most usual, and using it in this way does not, by any means, make the appropriator an insurer of others against accident from breaking ditches or overflows. There is a famous English case (Fletcher vs. Rylands, L. R. 3 House of Lords, 330) declaring that a man builds a reservoir, etc., at his peril. But such is not the law in California (10 Cal. 413; 35 Cal. 679). Nor does such a break or overflow in itself prove that the ditch owner was negligent; or, as it is said, it is not a case of "res ipsa loquitur," and negligence is not presumed (7 Cal. 335). The owner is liable only if the break or overflow occurred through his negligence, a failure to use the care which an ordinary prudent man would have taken with that ditch (10 Cal. 541).

3. Amount of Water: Before the code the appropriator could take to the full capacity of his ditch, having a reasonable time, after its completion, to remove obstructions, rocks, etc., and to remove other things causing an irregularity of flow. (8 Cal. 443). He was limited to that, however, and could not take more later, unless by a new appropriation. (13 Cal. 33; 21 Cal. 374). Under the code he must state in his notice how many inches of water he appropriates, and will be limited to that (C. C. 1415), or, if he uses less than that, to the amount actually used. (112 Cal. 230; 120 Cal. 86).

The surplus over what he has appropriated may itself be appropriated by later comers. (13 Cal. 33; 120 Cal. 86).

4. Place and purpose of use: Under the code, the place and purpose of use must be stated in the notice (C. C. 1415). What constitutes a proper purpose has already been considered under the question of intention, and it need only be inquired here what changes can be made in place or in purpose of use, without a new appropriation.

As to change of place of use: It was early decided that the place of use may be changed without loss of priority. It was absolutely necessary in the early mining days, when new ground was being continually opened up. In 7 Cal. 261 it was held that branches could be run to new mining claims without loss of priority, and that the main ditch itself could be extended to new localities. In 15 Cal. 161 it was held that the point of diversion or taking of the water could likewise be changed. The only limitation recognized on change of place by these cases and the cases following them was that others must not be injured in making the change. These rules are now incorporated in the civil code, Sections 1412, 1415.

As to change of purpose: This was at the start treated as a distinct question from change of place (e. g. 7 Cal. 261). It was urged in several cases that the right was limited to the purpose for which first appropriated and that a use for a new purpose could be obtained only by a new appropriation. This view obtained some footing in the early decisions (e. g. 13 Cal. 33, 21 Cal. 374). But it never took a firm hold. In 13 Cal. 220 it was held that use for a saw mill could be changed to use for a grist mill, and in 32 Cal. 26 it was said (obiter) that use for placer mining could be changed to use for quartz mining without loss of priority. The more recent cases are in this line, though they do not go into the question closely. They disregard any distinction between change of place of use and change of purpose of use. It seems established that the rule now is that there is no limitation on either change of place of use or change of purpose of use, so long as others are not injured by the change (96 Cal. 214, 101 Cal. 242, 108 Cal. 72), though it should be noted that only change of place of use is specifically covered by the civil code.

That the place of use may be upon distant lands is one of the characteristic features of the law of appropriation.

(TO BE CONTINUED.)

New Patents.

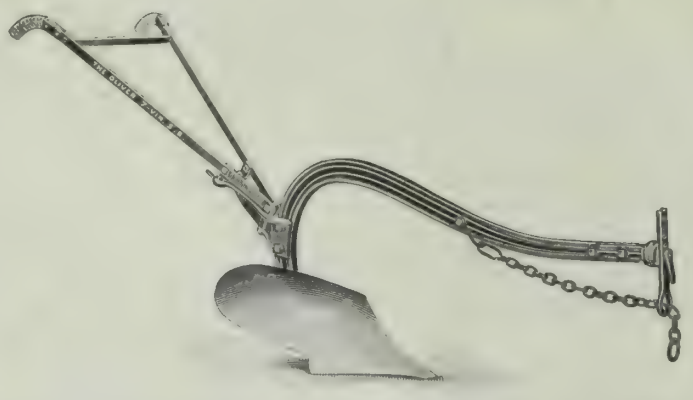
DEWEY, STRONG & CO.'S SCIENTIFIC PRESS PATENT AGENCY, 330 Market street, S. F., has official reports of the following U. S. patents issued to Pacific Coast inventors:

FOR WEEK ENDING JAN. 10, 1905.

779,403.—JOURNAL BOX—D. Allen, Los Angeles, Cal.
779,829.—STEP LADDER—W. M Anderson, Santa Paula, Cal.
779,682.—VEHICLE—J. E. Armstrong, Santa Cruz, Cal.
779,755.—CAR VENTILATOR—J. E. Armstrong, Santa Cruz, Cal.
779,831.—HAT FRAME MACHINE—D. D. Beatty, Grass Valley, Cal.
779,521.—STAMP MILL MORTAR—M. P. Boss, S. F.
779,998.—HAND TRUCK—E. J. Bryan, Riverside, Cal.
779,764.—DRAPERY CORDS—C. A. Burns, S. F.
779,526.—SOLDERING MACHINE—A. Cerruti, S. F.
779,643.—SCALE—J. C. Dixon, Hanford, Cal.
779,915.—RIBBON HOLDER—S. P. Doane, Sacramento, Cal.
779,773.—FLOOR SWEEPER—Dunaway & Melander, Tacoma, Wash.
779,917.—DOOR CHECK—C Ellingen, Santa Barbara, Cal.
779,693.—PROCESS—F. Ephraim, S F.
779,700.—PISTON ROD PACKING—C. P. Fogh, Wadsworth, Nev.
779,812.—GAS GENERATOR—F. J. Foveaux, Alameda, Cal.
779,927.—NECK STALL—A. J. Griffith, St. Helena, Cal.
779,648.—SCRAPER—I. B. Hammond, Portland, Or.
779,782.—DREDGER—Henderson & Peake, Oroville, Cal.
779,600.—BILGE BLOCK—J. Hickler, Pasadena, Cal.
779,783.—CHEESE CUTTER—M. B. Irvine, Longbeach, Cal.
779,545.—HARNESS HOOK—I. E. Johnson, Fresno, Cal.
779 719.—CAN TESTING MACHINE—P. Kruse, Astoria, Or.
779,720.—VOLTAGE REGULATOR—O. M. Lacey, Hanford, Cal.
779,721.—HAMMER—A. E. Leech, Fulton, Cal.
779,615.—SAND WASHING MACHINE—W. B. Martin, Seattle, Wash.
779,955.—MORTISING MACHINE—A. W. Miller, Riverside, Cal.
779,437.—SNATCH BLOCK—G. Nettle, Leaburg, Or.
779,732.—SCALE GEAR—J. P. Newell, Portland, Or.
779,556.—MECHANICAL MOVEMENT—E. C. Northrup, San Jose, Cal.
779,622.—BEDSTEAD—L. Pieper, Seattle, Wash.
779,964.—RAILWAY TRACK—J. W. Porter, Los Angeles, Cal.
779,809.—GARMENT—L. C. Sherick, Lemon Grove, Cal.
779,883.—TILING—J. Singer Los Angeles, Cal.
779,886.—SOLDERING—G. H. Stewart, Los Angeles, Cal.
779,887.—METAL PLATE—G. H. Stewart, Los Angeles, Cal.
779,889.—CONDENSER—J. Todd, Seattle, Wash.
779,892.—TELEPHONE—W. D. Watkins, San Jose, Cal.
779,893.—SIGNALING—W. D. Watkins, San Jose, Cal.
779,981.—DRAPER—J. C. White, Marysville, Cal.
779,679.—BLOTTER—E. M. Wilson, Adin, Cal.
779,680.—STAPLE SETTER—F. Wiseman, John Day, Or.

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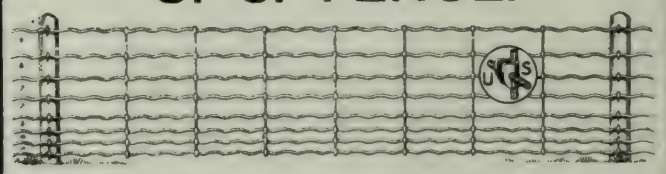
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Agricultural Review.

Kings.

NEW GRAIN.—Hanford Sentinel: P. Van Valer recently received a small quantity of a grain called speltz. While on his return from his Eastern trip on the Northern Pacific R. R. a few months ago he met a man who was on his way to North Dakota to plant a large tract of land to speltz. He told how it would grow and beat barley, which it resembles, in a crop. This man sent to Mr. Van Valer a small quantity of this seed. In the hull speltz looks like barley, excepting that the hull is a twin. The kernel resembles rye more than barley. It is said that the grain exceles barley for feed. J. W. McCord and Geo. Magee will try it on lake land.

Mendocino.

SHEEP DEPREDATORS. — Ukiah Dispatch-Democrat: Within the past few months, so Messrs. J. B. Milton, Marvin and Dolph Ford and Joe Weselsky, who have sheep pastures at the head of Gibson Creek, this county, informed us, they lost a number of sheep by thievery. The topography of the country is such that it is an easy matter to steal a few sheep from the respective flocks without suspicion, but of late the owners have taken pains to count the sheep every little while and find too many missing ones, and hereafter precautions will be resorted to and the extreme penalty of the law will be invoked on all sheep stealers. The coyote dogs now in service will be substituted by bloodhounds, and depredators had better let the sheep alone hereafter if they want to steer clear of the penitentiary.

Placer

A NEW INDUSTRY.—Rocklin Representative: A meeting was held in the Grange Hall at Roseville, Monday night, by the grape raisers to consider the proposition of Mr. Charles Paff of San Francisco to build a winery here. The proposition he made met with the approval of all concerned. Mr. Paff said his company would erect a winery and agreed to contract the wine grapes at $15 per ton for a period of fifteen years. Mr. Paff agreed to erect the winery providing the growers would subscribe 1400 tons of grapes. That much was subscribed that night. There will be over 2000 tons subscribed by the end of thirty days, the time when he agrees to commence building the winery. The parties expect to put up about a $35,000 plant and equip it with all modern machinery.

Plumas.

BEEF IN SIERRA VALLEY—Independent: From Supervisor Webster, who came down from the eastern part of the county Sunday, we learn that recently Lile Moffit sold 100 head of two-year-old steers at 7 cents per pound. The beeves averaged 615 pounds net. Prime heifer beef is selling at 6 cents and "cow" beef at 5 cents.

Sacramento.

AFTER BLUE JAYS.—The Sacramento Fish and Game Association will do some active service in pushing through the Legislature at its present session measures for the destruction of feathered pests, which, it is maintained, are largely responsible for the destruction of game birds. L S. Upson of the Legislative Committee of the organization states that blue jays, crows and hawks are the cause of much destruction of game birds and their eggs. He says that shooting clubs down the river have declared war upon the blue jays, particularly since it has been discovered that they destroy thousands of quail eggs annually. In case the Legislature will not pass a statute placing a bounty on the heads of blue jays, crows and hawks, the Association proposes to get up a fund for that purpose and start every available small boy out with his slingshot and 22-caliber rifle in quest of these predatory denizens of the air.

San Joaquin.

INCREASING DEMAND FOR OATS.—Stockton Mail: Are the people of this State being benefited by the accession of the Philippine Islands? Up to this year but few oats were grown in this State, as there was not a good market for the cereal. The demand from the Philippine Islands, however, has been so great that the country has been unable to fill it, with the result that prices have advanced wonderfully. Bert Melone, of the firm of Melone & Perry, says about the oat market: "Oats have made a serious inroad upon barley this year. The acreage is fully ten times as great as last year. This was not on account of the failure of the barley crop last year for brewing purposes, but was brought about by the demand for the cereal. The market has rapidly developed. A few experimenters made money and now it is simply a case of follow the leader. It is similar to the condition of affairs in early days, when nothing but wheat was grown. After a few years some one decided to sow barley for a change, with the result that he found it a paying proposition. In a short time hundreds of acres were sown to barley."

GRAPES IN JANUARY.—Stockton Mail: Mrs. Smith brought to the office Saturday a quantity of Flaming Tokay grapes plucked from vines on the Root ranch, near El Pinal vineyard, on the 6th of the present month.

San Mateo.

COWS KILLED.—Coast Advocate: Nine cows owned by McLellan Bros., at Beresford, were killed by one of the evening trains Tuesday. The drove of animals were inside of the company's right of way and when discovered by the engineer it was too late to stop the train. The only alternative was to crowd on steam and save the train from being derailed. Nine of the cows were struck and killed. The passengers were considerably shaken up.

Santa Cruz.

CHERRIES IN JANUARY. — Watsonville Register: An orchardist at Glenhaven asserts that on January 5th he picked from his trees quite a number of ripe Tartarian cherries. The fruit was of good size and flavor. This unusual event was due to the warm spell in September last.

Shasta.

BURBANK POTATOES IN IRELAND.—Redding dispatch to Sacramento Bee: W. J. B. Martin, a Pacheco district farmer, is in receipt of a letter from R. H. Hayes, Justice of the Peace for the County of Cork, Ireland, announcing that a small lot of Burbank potatoes sent to Mr. Hayes by Mr. Martin this time a year ago have done famously, every eye in the lot escaping the potato blight. Mr. Hayes, who is also secretary of the County Cork Agricultural Society, writes that he is so much encouraged with the prospect of getting a blight-proof tuber from the Pacheco district stock that he has already decided on a name for the importation—"Mogalore"—a Celtic word, meaning "good enough." The Irish farmers have paid thousands of pounds sterling for alleged blight-proof potatoes, but so far without avail.

Solano.

A $4000 BULL.—Republican: A carload of nine head of fine cattle arrived from Iowa Saturday, consigned to the Humboldt herd, Suisun, owned by Senator Rush and William Pierce. Among the number was a pure bred Scotch Shorthorn bull, for which $4000 was paid. He is registered as Nonpareil King, 192,871, and weighs about 2100 pounds. He will be placed at the head of the Humboldt herd. The animal was taken to the Humboldt ranch on Will Chrisler's truck. R. M. Dunlap, who went East with Senator Rush several weeks ago, brought the cattle from Iowa.

RIPE CHERRIES IN JANUARY.—Special to Sacramento Bee: F. S. Jones of Green valley shipped on January 13th a box of assorted cherries to the East. This breaks all previous records for early shipments and is an extraordinary happening even for this State. The probable cause of such early fruit was due to the fact that the warm weather last fall after the heavy rains caused the trees to bloom, and being in a particularly sheltered spot the fruit matured.

Sonoma.

LARGE SALE OF WINE.—Santa Rosa Republican: Seventeen and one-half cents per gallon has been paid for 47,000 gallons of wine made in Sonoma county, the wine to be placed on board cars at Vineyard Station on the Southern Pacific tracks. This is considered the top price thus far this season. The Guudlach, Bundschu Wine Co. is the purchaser, and it secured the beverage from the estate of the late Theodore Skelton Glaister.

Sutter.

EXPERIMENTING WITH NEW VARIETIES OF WHEAT.—Yuba City special to Sacramento Bee: Prof. Leslie A. Fitz, who is in charge of the Government Experiment Station recently established in this county, reports the work of seeding the 20-acre tract to new wheats to be progressing rapidly and satisfactorily. The ground is laid out in acre, third of an acre, tenth of an acre and acre plats. On seven of the 1-acre plats have been planted five varieties of Russian wheat, one of Hungarian and one native wheat, known as the Gem. On the ½-acre plats are wheats sent out from Washington raised in Eastern soils. On sixteen of the ⅒-acre plats are planted Russian, Hungarian and Indian wheats. Three varieties of rye and one variety of winter barley have also been sown, and several hand lots of department and Kansas grains have been sown. Later he expects to plant small lots of spring barley and oats.

Tehama.

SHEEP MEN HAVE BRIGHT PROSPECTS.—Red Bluff News, Jan. 20: Sheep Inspector W. H. Cox returned Thursday from an extended trip into the Manton and Payne's creek country and inspected several large bands of sheep, all of which were found to be in prime condition and comparatively free from scab. Sheep growers generally see the benefit of a rigid examination of their flocks and are willing to aid the inspector every way in their power. He says that the outlook for the coming season is excellent, with prospects of good prices and a plentiful crop of wool.

Tuolumne.

BEAN VINES YIELD HEAVY CROPS.—Lodi Sentinel: Beans have become a very important and profitable crop in the reclaimed delta of the San Joaquin. Potato profits have tempted some farmers to change, but beans still occupy thousands of acres. The varieties raised are principally the blackeye, pink and large white. The yield for the last year is estimated at 25,000 tons, which at the lowest average price brings $50 per ton. A liberal estimate is that a revenue of $1,500,000 is derived from the bean crop every year. As the average yield is a ton to the acre, the lowest revenue is, therefore, $55 per acre, while some acres have produced half as much more. Estimated at the highest price quoted—$90 per ton—and the maximum yield of a ton and a half to the acre, the possibility is for a revenue of $135 per acre from this product.



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The Home Circle.

A Settin' Hen.

When a hen is bound to set,
Seems as though 'taint etiket
Dowsin' her in water till
She's connected with a chill.
Seems as though 'twas hardly right,
Givin' her a dreadful fright,
Tyin' rags around her tail,
Poundin' on an old tin pail,
Chasin' her around the yard.
Seems as though 'twas kind o' hard,
Bein' kicked and slammed and shooed
'Cause she wants to raise a brood.
I sh'd say it's gettin' gay—
Jest 'cause natur' wants its way.
'While ago my neighbor, Penn,
Started bustin' up a hen;
Went to yank her off the nest—
Hen, though, made a peck and jest
Grabbed his thumb nail good and stout—
Like to yank the darned thing out.
Penn he twitched away, and then
tried again to grab that hen.
But, by ginger, she had spunk,
'Cause she took and nipped a chunk
Big's a bean right out his palm,
Swallowed it, and cool and calm,
Histed up and yelled, "Cah-dahr!"
Sounded like she said, "Hurrah."
Wal, sir, when that hen done that,
Penn he bowed, took off his hat—
Spunk jest suits him, you can bet,
"Set," says he, "gol darn ye, set!"

—Anonymous.

The New Year.

A miracle touched me at twelve, for behold I saw
The New Year rise as a young god rises in might.
No child was he with hesitant, timid feet,
But a grown joy, wrapped in the raiment of pure delight.

And his eyes, most gracious and tender, were bent on mine;
In his hands he caught my hands, while clarion clear
His golden, rapturous, confident tones rang forth:
"Comrade, hail! For I am the New, New Year.

"Comrade, hail! The pulse of the world's astir
Under the snow, and the ancient doubts are dead
Freedom, achievement, wait for us. Come, be glad!"
I listened, I looked, and faith to my hope was wed.

His kingly courage told me the beautiful truth;
He is mine, and his strength infuses my rescued will.
Up, faint heart! We will conquer together, my Year;
Life and love shall their old sweet promise fulfill.

—Clinton Dangerfield in Century.

The Broken Shaft.

The big homeward-bound liner plowed her way through the Tyrrhenian sea, heading for Bonifaco. Far away in the starboard the red flare of Stromboli in eruption served as a convenient lighthouse. Overhead in the blue, illimitable vault gleamed countless stars, their pale reflections seemingly caught up again in the long eddies of phosphorescent water that raced past on either bow.

A man and a woman came up the first saloon compartment, and, walking to the taffrail, looked over the side for some moments without speaking. Presently the man turned to his companion.

"We're bound to make Marseilles on Tuesday at this pace," he declared, with unmistakable dissatisfaction in his tone.

"I'm sorry," replied the girl, frankly.

"So am I."

"Why?"

"Dear, you know," he protested.

The girl smiled with content.

"Yes, but tell me," she persisted.

"Because, if by any unlooked-for piece of luck we don't touch Marseilles until Wednesday it will mean another six days of heaven for me."

"Don't be silly," she answered, reprovingly, "but—well, it will be nice all the same. Just think what hangs on it—either forty-eight more hours together for us like this and then goodby, or else nearly a whole week of being together."

"There's no alternative?"

"None, if we get to Marseilles on Tuesday. I'm to meet my people there and go home with them overland. If we don't get in until the day after I'm to stop where I am and go to sea. That's the arrangement. Dearest, can't anything be done to make us late? Couldn't you bribe the captain?"

"He's too unsympathetic, I'm afraid. The only thing that could do us any good would be for the engine to break down."

"We'll hope it will, then. I think I'd almost give the chief engineer—ugly as he is—a kiss for himself if he does."

The man looked at the thick smoke belching from the funnels and felt the quick throb of the screw.

"No such luck, sweetheart," he answered, moodily.

* * * * * *

Aft, and down below the main deck, where the heat and motion are intensified, the second class passengers endeavored to make themselves as comfortable as their stuffy, ill-ventilated cabins permitted. The majority of these were so near the water line that the portholes could not be opened. In the cheerful assurance, however, that the voyage would soon be over, this matter seemed a small one.

A man of little more than thirty, but with hair prematurely gray from prolonged residence in the East, and a skin like weak coffee, paced restlessly up and down the narrow passageway between the row of cabins. His face was careworn and his fingers itched restlessly as he walked. Judging from his clothes and general appearance one would have been inclined to put him down as a storekeeper, or at any rate as a person engaged in some subordinate occupation.

At the threshold of the second saloon the ship's doctor met him, descending the companionway. He was almost the only individual on board to whom the shy, unsociable stranger had spoken. Nearly every one held aloof or sneered covertly at his awkward ways and rough speech.

"Well," he said, pleasantly, "you won't be sorry to get to Marseilles, I expect?"

"I pray to the A'mighty, sir, that we're there by Tuesday at latest," was the earnest reply.

"Is it so important as all that?" laughed the other.

"I believe a life hangs on it, sir. My wife is at home dying. It's eleven long years since I left her and the child—the little lass that won't know her father when she sees him. Two months ago my poor Mary met with a bad accident. The matron at the hospital she was taken to wrote to me in Bombay, and said as how I must come at once if I wanted to see her alive, for paralysis had set in. Well, I got leave and raised the passage money somehow. It was a hard pull, but I did it. At Port Said there was a telegram saying she might last till Thursday morning. Oh, sir, do you think I shall be able to catch the night train on Tuesday?"

The doctor glanced at the daily record of the ship's run hanging under the clock.

"I should certainly say so," he returned, encouragingly.

"Thank God!" replied the other, fervently, as he watched his retreating figure. The doctor's confidence inspired him with fresh hope. He went on deck to enjoy it.

As he passed the first alleyway he had a strange feeling that the ship was slowing down a little. He told himself that it was imagination, and went toward the rail to look at the waves. Through the soft darkness he could just see a man with a girl by his side a few yards in front of him. He had no intention of listening, but in the still air he could hear plainly what they were saying.

"Isn't it glorious, sweetheart?" exclaimed the man. "I've just had it straight from the chief engineer—the propeller shaft has snapped, and we can't possibly get to Marseilles before Friday afternoon."—The Gazette.

How the Body is Kept Warm.

A man's lungs will hold about 330 cubic inches of air. That is a little more than 1½ gallons. When he fills his lungs full he can then breathe out 230 cubic inches of air, which is almost exactly one gallon. Some air always remains in the lungs. Blowing soap-bubbles is a good practice in breathing. If you can blow a bubble five or six inches across, with one breath, you are doing well. It is good for the health to take fresh air deep down into the lungs every once in a while.

We should learn to sit and walk with the chest forward and the shoulders back. This gives the lungs room, and then it is easy to fill them with air.

Some girls have a very bad fashion of fastening the dress very tight about the waist. This cramps the lungs. Such a girl cannot tske a full breath. She tries to make up for it by breathing faster, but she will be sure to have poor blood and poor health. The lungs must get enough air so that each red corpuscle can get its load of oxygen, and also the poison in the bad blood must get out into the air. This can never be done well when the lungs are squeezed out of shape.

It is very good for any one to go to an open window or out onto the porch and take five or six deep breaths every day, winter and summer. Fill the lungs full and hold it there for a while. Then breathe out and fill them again.

If you will practice this and make sure that you always get plenty of good air to the lungs, it is quite likely you will never catch a cold.

When coal is burning in a stove you known that, if it can get a good draught of air, it will make the stove very hot. If you want the coal to quit burning, you close the damper so that the air cannot get in.

The oxygen of the air which you breathe is carried by the red corpuscles out even to the tips of the fingers and toes. When it unites with the food, it make heat just as it did with the coal in the stove. There is no blaze of fire in the body like the one in the stove, but the food is slowly burned, and that keeps our bodies warm.

Our bodies must not get too warm nor too cold. Look at the thermometer in your house or schoolroom. It ought to show a temperature of 70°. Your body on the inside is twenty-eight degrees warmer than that. That would make your temperature 98°.

It will be almost exactly 98° as long as you are not sick. If you get a fever, your temperature may go up to 103° or 104°. Then the doctor says you are very sick.

No part of our body can do its best work unless its temperature is 98°, or very close to it.

In winter time we wear heavy clothes to keep the heat in our bodies from getting away, and we live in warm rooms for the same reason.

Another good way to keep warm is by exercise. When we make our muscles work, the food is burned up faster, and that makes us warmer. Good exercise in the cool fresh air is a much better way to get warm than to sit all day by a warm stove.

We can nearly always manage to keep our bodies from getting too cold, but there is often danger that they may get too hot. The body has a very nice way of keeping itself from getting too warm, and we will study that next.

When the body get too warm, the sweat begins to pour out all over the surface of the skin. As soon as sweat gets to the air, it begins to dry up, and that takes heat from the body. This is a way nature has to keep us from getting too hot.

Put a drop of gasoline on the back of your hand, and it will feel very cool because it dries up so quickly.

Dip one of your hands into warm water, and then hold both hands up where the wind is blowing. The wet hand will feel much cooler than the dry one, even if the water is very warm.

In some warm countries they make their water-jugs out of clay that is much like our flower-pots. The water will soak through the sides of the jug and keep it wet on the outside. Then they hang the jug up where the wind is blowing, and after a while the water is nice and cool. Sweat cools our bodies in just the same way.—Dr. Culler's First Book in Physiology.

The Answer.

"There's naught but toil," I said, and turned once more
To wrestle on with Fate;
And then I heard a little voice implore,
"Do not despond, but wait."

"There is no joy in life or love or art,"
I said in my despair;
And then I heard your laughter in my heart,
And smiled to hear it there.

"There is no peace," I sighed in hopelessness—
Held fast in gloom's embrace;
And then I felt your tender hand's caress,
Your lips upon my face.

"There is no promise. How can I rejoice?
To-morrow's lips are dumb!"
And still I hear your tender, hopeful voice;
"The summer days will come!"

—J. S. M., in Chamber's Journal.

Making a Scriptural Cake.

"Search the Scriptures," a lady was heard to observe in a Catonsville car, coming into town. "I have searched the Scriptures this morning from cover to cover, and until I was blue in the face, and what do you think I did it for? To find the recipe for a cake!

"A year ago I paid 5 cents at a church fair for an envelope said to contain a card upon which was printed the recipe for a Scriptural cake. It sounded interesting—it certainly ought to have been good; but when I opened the envelope this is what I read: (Here she fished out a card from her portemonnaie, adjusted her glasses, and read the following):

SCRIPTURAL CAKE RECIPE.

4½ cups of I Kings, iv, 22.
1 cup of Judges, v, 25, last clause.
2 cups of Jeremiah, vi, 20.
2 cups of I Samuel, xxx, 12.
2 cups of Nahum, iii, 12.
2 cups of Numbers, xvii, 8.
3 tablespoonfuls of I Samuel, xiv, 25.
A pinch of Leviticus, ii, 13.
6 Jeremiah, xvii, 11.
½ cup of Judges, iv, 19, last clause.
2 teaspoonfuls of Amos, iv, 5.
Season to taste of II Chronicles, ix, 9.

"Now," she resumed, "I have had that thing in my possession until I have grown to hate the very sight of it. First I thought it would be fun to look it up, and put it on my dressing table. Then I got tired seeing it there and it drifted to the sewing basket. Next I kept it in the machine drawer to measure the hem for curtains. Finally, I threw it in the waste paper basket, but the maid spied it and returned it to me as something of value. In desperation I decided to be haunted no more, but look up the exasperating thing and have done with it. This morning I have looked it up; here is the recipe, and I mean to lose the original card before I return home this day." And she laid it maliciously down on the seat opposite her and deliberately got out of the car, leaving it to haunt some one else, but she also left the key to the puzzle, which, being interpreted, readeth as follows:

Four and one-half cups of fine flour, 1 cup of butter, 2 cups of sugar, 2 cups of raisins, 2 cups of figs, 2 cups of almonds, 3 tablespoonfuls of honey, a pinch of salt, 6 eggs, ½ cup of milk, 2 teaspoonfuls of yeast powder, season to taste with spices.—Baltimore Sun.

Knitting as a Nerve Cure.

It is told of Robert Louis Stevenson that one of the many things he learned to do to keep him amused when he was restless or ill was to knit. There are many men of a generation much older than ours who improve odd moments by working with yarn and needles. But women to be women simply must knit after their hair is grey, and it is good for them.

"My prescription, madam, is that

you knit two hours daily," said the physician.

"Knit," exclaimed the nervous patient. "Why on earth should I knit?"

The doctor replied: "Because nothing is more soothing to the nerves; because nothing conduces to such a calm and cheerful frame of mind. I could prescribe velerian for you, but knitting will be better. It will do you much more good. I believe that a month of it will cure you."

He went on to explain that his attention had been called to an article in a medical journal on the beneficent effects of knitting, and he had prescribed the treatment, with excellent success, to a dozen women.

"The shining needles," he said, "playing swiftly among soft-colored silks or wools, engage the eyes pleasantly, and fill the mind with cheery and sane thoughts. At the same time they may produce admirable things—golf waistcoats, golf stockings of wool, delicate evening stockings of silk, shawls, or a hundred articles."

The woman smiled, and said she did not know how to knit, but she would learn at once.

Domestic Hints.

BAKED EGGS.—Drop six eggs into a shallow cake pan, taking care not to break them. Give each a thick sprinkling of grated cheese and cover the entire dish, including the eggs, with bread and cracker crumbs. The pan should be well buttered before the eggs are placed in it. Bake ten minutes in a very hot oven.

SWEET POTATO PATES.—Boil the desired number of potatoes, then drain, season and mash. Make a sauce of one-half cupful of milk, two tablespoonfuls of butter, one-half teaspoonful of salt and a dash of pepper. Cook until perfectly smooth; then mix with the sweet potato. Fill shells with the mixture and serve.

CHEESE SOUFLE.—Melt three tablespoonfuls of butter and mix with it two heaping tablespoonfuls of flour; when hot add slowly half a cup of milk. Season highly with salt, pepper and paprika and just a dash of mustard. Have ready a cupful of grated cheese; stir this in with the other mixture, let it boil up for a minute, then add the beaten yolks of four eggs. Take from the fire and stir in the stiffly-beaten whites; then turn into a baking dish and bake for half an hour, or until nicely browned.

CREAM OF WALNUTS.—Blanch one pint of walnuts' meats and cook until tender in boiling salted water; drain and press through a sieve into a cooking pot. Simmer three pints of clear brown stock for half an hour, with the addition of a pinch of paprika, six cloves, a saltspoonful of grated nutmeg and a tiny piece of vanilla bean. Strain into the pot containing the nut pulp, season with a teaspoonful and a half of salt, reheat and serve in shallow plates with a tablespoonful of whipped cream on top and accompained by crisp wafers and pimolas.

CHOCOLATE CREAM CAKE.—Two eggs, a cup of granulated sugar and two tablespoonfuls of butter must be thoroughly creamed; then add a cup of milk in which has been dissolved a spoonful of soda and a cup and a half of flour into which has been sifted two teaspoonfuls of cream of tartar. The soda and cream of tartar are here preferable to baking powder. Stir the mixture until as light as possible, add a teaspoonful of vanilla and bake in a long cake pan. When done, spread a layer of white icing of boiled frosting about a quarter of an inch thick, and when cold cover this with a thick coating of dissolved chocolate. Cut in squares.

Hints to Housekeepers.

Moist hands may be made more comfortable by washing and brushing them in tepid water in which a few grains of alum or a few drops of aromatic sulphuric acid have been dissolved. Dry them with a rough towel and dust the palms with talcum powder.

Glycerine is always used in combination with rose water or elder flower water, but few women know why this is done. It is because glycerine has such an affinity for water that, when applied pure, it absorbs all the moisture from any surface that it touches. Plain water will do just as well as rose water, apart from anæsthetic considerations.

The fasting cure is to be the cure, the chiefest means of cure, of the time to come. A complete cure of a case of paralysis that for two years had disabled its victim from manual labor is said to have been effected by a fast of fifty days.



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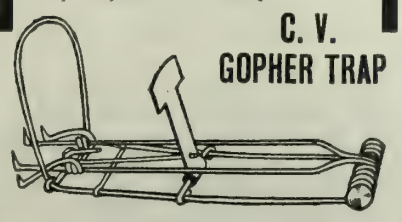
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This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular rips

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For further particulars and for maps, showing the subdiv'sions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California

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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, January 25, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 15 @1 16	98 @ 98
Thursday	1 15 @1 15¾	98 @ 98
Friday	1 15 @1 15	97 @ 98
Saturday	1 13 @1 13	96 @ 97
Monday	1 13 @1 15	97 @ 98½
Tuesday	1 15⅜@1 14⅝	98⅝@ 98¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	45 @ 45	45½@45⅝
Thursday	45 @ 44¾	45 @45⅛
Friday	44⅝@45	45⅛@45⅜
Saturday	45 @ 44¾	45 @ 45
Monday	44 @ 45	45 @ 45¼
Tuesday	45 @ 44¾	45⅜ @ 45¼

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 46½@1 46	$———@———
Friday	1 46⅝@———	1 30½ @ ———
Saturday	1 47 @1 46½	1 30¼@1 30⅝
Monday	1 46¾@1 47⅛	1 30⅛ @1 31¼
Tuesday	1 46⅝@1 47	1 30¾ @ ———
Wednesday	1 47¼@1 48¾	1 31½@1 31¾

Wheat.

There is not much wheat arriving from any quarter and spot stocks are of small volume. There is practically nothing doing on export account. Millers are running lightly, owing to the difficulty in obtaining wheat in large quantity. Especially is it difficult to secure choice to select milling wheat in noteworthy amount. Market remains firm in tone, with some appreciable changes in quotable values. The grain charter market is lifeless and quotable nominally at 12s 6d for first-class iron ships to Europe, usual option as to ports. The slow movement in wheat in consequence of limited supplies is not confined to this port or to this coast alone. The total value of exports of all breadstuffs from the United States in December, 1904, was $9,686,344, against $16,328,204 for December, 1903. For the year 1904 the total value was $92,292,927, against $192,920,616 for previous year. The wheat exports from the United States last month were 796,221 bushels, as against 5,355,542 bushels for December, 1903. Of the 477,732 centals shipped last month, all but 5406 centals went from Pacific coast ports.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.46@1.48¾.
December, 1905, delivery, $1 30¾@1.31¾.

Wednesday, at the forenoon session of Exchange. May, 1905, wheat sold at $1.47¼@1.48¾; December, 1905, $1.31½@1.31¾.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12s@—s	12s@—s
Local market	$1 35@1 40	$1 42½@1 47½

Flour.

Market has ruled quiet, with only moderate quantities offering, especially of high grade flour, and for this sort full current figures are being realized. Flour which has been on the market considerable time, of brands not well or favorably known, is dragging, although being offered at comparatively low prices.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Buyers in quest of this cereal find it necessary to pay tolerably stiff figures, offerings being light and firmly held. Some purchases are reported in the interior at relatively better prices than are quotable here. The speculative market developed additional strength the past week for May option on No. 1 feed, which sold up to $1.20. On the other hand, December barley sold down to 96½c. This is in striking contrast with the figures current on these two options a year ago, when $1.09½ was the best figure for May and December sold at $1.05. The spot market for No. 1 to choice feed was $1.10 @1.12½ at corresponding date last year, and $1.15@1.20 the quotable range on brewing.

Feed, No. 1 to choice	$1 17½@1 20
Feed, fair to good	1 15 @1 17½
Brewing, No. 1 to choice	1 20 @1 25
Chevalier, No. 1 to choice	1 20 @1 25
Chevalier, common to fair	1 15 @1 17½

Oats.

Offerings continue light and market unfavorable to buyers. Present stocks are mainly common feed qualities, choice to select being in such scanty supply as to hardly admit of quotations. Orders for desirable seed oats are difficult to fill at any figure.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

Market is tolerably well supplied with Large Yellow and White, both domestic and Eastern. Demand is fair, and for good to choice values are ruling steady. There is not much Small Yellow offering, and in a limited way comparatively stiff prices are realized for this variety.

Large White, good to choice	$1 25 @1 30
Large Yellow	1 27½@1 32½
Small Yellow	1 60 @1 75
Egyptian White	——— @———
Egyptian Brown	——— @———
Eastern, sacked	1 22½@1 30

Rye.

Stocks are light and in few hands. There is a fair demand and market is firm.

Good to choice	$1 45 @1 50

Buckwheat.

Nothing doing in a wholesale way, offerings being too small to admit of other than light jobbing transactions.

Good to choice	$1 75 @2 00

Beans.

There was some inquiry for white beans and market for good to choice presented a firm tone. Limas ruled quiet at much the same range of values as last quoted; some operators are trying to talk down the market on weather conditions. Not much doing in colored beans, but they are being steadily held. Bayos and Pinks are in moderate supply. Reds are in very light stock.

Pea, fair to good, 100 lbs	$2 90 @3 10
Small White, good to choice	3 15 @3 40
Large White	2 35 @2 60
Pinks	3 00 @3 50
Bayos, good to choice	2 50 @3 00
Red Kidneys	4 50 @5 00
Reds	4 00 @4 50
Limas, good to choice	4 00 @4 15
Black-eye Beans	2 40 @2 50

Dried Peas.

There is no lack of inquiry for good to choice, and such could be readily placed at tolerably good prices, but market is practically bare of desirable stock. For damp and faulty peas the market is dull and weak.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

While the local market is not quotable over 30c. per lb. for choice, free purchases could not be made at this figure. Some recent business in the interior and North has been reported at relatively stiffer prices, the purchases said to be to cover January and February shorts. Dealers who are long on the market are figuring on higher prices during the Spring and Summer, while those who are short are taking the opposite view. Eastern and foreign markets are reported quiet at generally unchanged values.

California, good to choice, 1904 crop	27 @30

Wool.

Dealers are not giving out quotations, claiming that there is nothing to quote. Stocks here are light, but at the same time there is a little wool coming forward, and when any is presented for sale it meets with prompt custom. Recent transfers have been made up to 25c., for bright Oregon of long staple and strong fibre. Quotations below noted are decidedly conservative, and under values obtainable where there is any competition among buyers. The first bale of Spring clip arrived Monday from Hanford.

SPRING.

Northern, free	24 @25
Northern, defective	18 @21
Oregon, good to choice	21 @25
Nevada	17 @22

FALL.

Northern	15 @20
San Joaquin and Southern, free	14 @17
San Joaquin and Southern, defective	10 @12
Southern lambs, as to quality	10 @16

Hay and Straw.

The Government has placed an order for 2,800 tons of hay among local dealers, the hay to be taken by the transport Dix to Manila. Local business is of light volume, and aside from the movement on Government account, not much is going outward. Quotable values are without pronounced change, but for other than best Wheat the market lacks firmness.

Wheat, good to choice	$12 00 @ 14 50
Wheat and Oat	9 50 @ 12 00
Tame Oat, fair to choice	9 00 @ 12 00
Wild Oat	8 00 @ 10 00
Barley	7 00 @ 10 00
Alfalfa	9 00 @ 11 50
Clover	7 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 14 50
Straw, ₱ bale	35 @ 55

Millstuffs.

Bran was in tolerably heavy receipt from the North, but represented in the main prior arrival purchases, and asking prices continued much as last noted. Middlings were in rather light stock and were steadily held. Market for Rolled Barley was firm at current rates. Prices for Milled Corn were without quotable change.

Bran, ₱ ton	$20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	24 50 @ 25 50
Cornmeal	30 00 @ 31 00
Cracked Corn	30 50 @ 31 50
Oilcake Meal	——— @ ———

Seeds.

Utah Alfalfa is in moderate stock and more is to be had at primary points if wanted; spot supplies of the California product are light. Not much doing in Yellow Mustard; Trieste or Brown Mustard is practically out of stock.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13½
Canary	6½@ 6¾
Rape	1¾@ 2½
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Market is quiet and for other than choice Water White is lacking in firmness. High-grade honey is in light supply, but there is no scarcity of Amber stock. Three lots of Hawaiian Island honey, aggregating 523 cases, arrived the current week.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3½@ 4½
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11½@12½
Amber Comb	9 @11

Beeswax.

Values are ruling steady, demand being fair and offerings by no means heavy.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Market for Beef is without pronounced change, but grass-fed stock is beginning to arrive freely, causing an easier tone; only a few sales are made over 6½c. Veal is not in heavy receipt, but supplies are about sufficient for the demand at full current figures. Mutton is in ample stock for immediate needs, prices ruling weak. Hogs continue in light receipt and are meeting with a firm market.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6 @ 6½
Beef, 2nd quality	5½@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 140 to 250 lbs	5½@ 5¾
Hogs, large, hard, over 250 pounds	4½@ 4¾
Hogs, small, fat	4¾@ 5
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	8 @ 9
Lamb, ₱ lb	8½ @ 9

Hides, Skins and Tallow.

Demand is good for Hides in No. 1 condition and market is firm at the quotations. Sound Pelts are meeting with ready sale and prevailing values are being well maintained. Tallow is not lacking for custom; prices are steady.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@10	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@10	—@ 9
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@ 12½	—@11½
Dry Hides	17½@18	16½@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@1 75	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 50@—	
Horse Hides, salted, small	2 00@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Calcutta Grain Bags of this year's importation cannot at present be laid down for less than 5¼c. State Prison Bags are offering for a limited time at 5¼c. Immediate business in bags and bagging of all descriptions is of a very light order.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@6
Grain Bags, Calcutta, buyer June-July	6 @6¼
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

Arrivals were of rather moderate proportions, both of California and Eastern poultry. Market for most kinds showed firmness. Chickens were most in favor, large and fat young selling to best advantage. Turkeys were not much sought after, nor were there many on the market. Ducks in prime condition were in fair request. Geese which were large and fat were readily placed at full figures. Inquiry for Pigeons was mainly for choice young, which were in light receipt.

Turkeys, Dressed, choice, ₱ lb	$ 20 @ 24
Turkeys, live gobblers, ₱ lb	19 @ 21
Turkeys, live hens ₱ lb	19 @ 21
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 7 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	6 00 @ 7 00
Fryers	5 00 @ 5 50
Broilers, large	3 50 @ 4 00
Broilers, small to medium	2 50 @ 3 00
Ducks, old, ₱ dozen	4 50 @ 5 50
Ducks, large young, ₱ dozen	6 00 @ 7 00
Geese, ₱ pair	2 00 @ 2 50
Goslings, ₱ pair	2 00 @ 2 50
Pigeons, old, ₱ dozen	1 00 @ 1 25
Pigeons, young	2 00 @ 2 50

Butter.

More firmness has been developed in the butter market, in consequence of a fairly active shipping demand and only moderate receipts. The outside shortage is proving a boon temporarily to the local dairy interest. It is also enabling holders of cold storage supplies to unload to better advantage than was thought possible sixty days ago.

Creamery, extras, ₱ lb	27 @28
Creamery, firsts	25 @26
Creamery, seconds	23 @25
Dairy, select	25 @26
Dairy, firsts	23 @24
Dairy, seconds	20 @21
Mixed Store	13 @15

Cheese.

Market is quiet, and for the general run of offerings is not showing any special firmness. A few favorite marks of fancy mild new are selling in a limited way to special custom at a slight advance on quotations.

California, fancy flat, new	12 @—
California, good to choice	10½@11½
California, fair to good	10 @10½
California, "Young Americas"	10 @12½
Eastern	13 @15

Eggs.

With receipts on the increase, and neither jobbers nor retailers caring to carry much stock, the market has inclined against sellers, especially for offering direct from hennery or ranch. Storegathered eggs are now showing good quality, and there is consequently a narrow range in prices.

California, select, large, white and fresh	26 @—
California, select, irregular color & size	24 @25
California, good to choice store	24 @25
Eastern firsts	23 @24
Eastern seconds	— @—

Vegetables.

Fresh vegetables were in fair receipt, mainly from the Southern section, but desirable qualities met with a good demand and a tolerably firm market, the quotable range of values showing no radical fluctuations from the figures last quoted. Rhubarb from San Leandro was held at 7c. per lb. Onions of choice to select quality were in few hands and very firmly held; importations from Australia are coming forward, the last steamer bringing 600 cases.

Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	7 @ 10
Beans, Wax, ₱ lb	6 @ 8
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ₱ lb	8 @ 10
Garlic, ₱ lb	8 @ 9
Mushrooms, ₱ lb	7 @ 12½
Onions, Yellow Danver, ₱ ctl	2 50 @ 2 75
Peas, Green, ₱ lb	3 @ 6
Peppers, Green, ₱ lb	7 @ 9
Rhubarb, ₱ box	— @ —
Summer Squash, Los Ang., small b'x	75 @ 1 00
Tomatoes, ₱ box	1 00 @ 1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

There were fairly liberal receipts of River potatoes, mostly representing purchases made by dealers in the interior. Stocks were not crowded to sale, but for other than choice to fancy the market could not be termed firm. Several carloads were imported from Colorado at a cost of about $1.25 per cental, and it is said the potatoes are hardly as good as domestic selling at 90c.@$1. Sweets were in lighter supply and higher.

Early Rose, ₱ cental	1 35 @ 1 50
Salinas Burbanks, ₱ cental	1 00 @ 1 50
River Burbanks, ₱ cental	65 @ 90
River Reds, ₱ cental	65 @ 75
Oregon Burbanks, ₱ cental	1 00 @ 1 30
Sweet Potatoes, ₱ cental	90 @ 1 10

Fresh Fruits.

Receipts of Apples have not been especially heavy the current week, but, in connection with previous stocks, proved ample for the demand. Inquiry was not particularly active, and was mainly for high grade stock. Quotable values continued about the same as preceding week, but only for strictly choice to select, such as fine Spitzenberg and fancy Newtown Pippins, could the market be termed strong at ruling rates. A few Raspberries arrived from San Leandro, in fair condition for this time of year, and sold at $2 per drawer.

Apples, fancy, ₱ 50-box	1 50 @ 1 75
Apples, good to choice, 50-lb. bx	1 00 @ 1 25
Apples, fair to good, ₱ box	75 @ 1 00
Apples, Lady, ₱ box	—— @ ——
Persimmons, ₱ regular box	—— @ ——
Strawberries, large, ₱ chest	—— @ ——

Dried Fruits.

Business in dried fruits is not very brisk, but considering the limited stocks of most descriptions now in either first or jobbing hands, trade is of fair volume. Peaches are mostly held by a few firms.

and are likely to rule higher rather than easier before the season closes. Market for high grade Apricots and choice to fancy Pears tends against buyers, but for common qualities of both varieties there is scarcely any inquiry. Apples are ruling steady for good to choice evaporated, with moderate inquiry for stock of this description. Prunes now offering are almost wholly of the medium sizes, and these are meeting with some attention at quotably unchanged values. The steamer Santa Rosa, sailing for British Columbia on the 20th, carried 10,772 pounds Prunes and only 857 lbs. other dried fruits.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4 @ 4½
Apples, extra choice to fancy, 50-lb boxes	5½@ 6
Apricots, Moorpark	9 @11½
Apricots, Royal, good to choice, ℔ lb	7½@ 8½
Apricots, Royal, fancy	9 @10
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1¼@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Market is quiet and values are without quotable change. Stocks of common qualities are of fairly liberal proportions. Supplies of 4-crown are not large and a clean-up of the same during the spring and early summer, at full figures now current or better prices, is very probable.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4-crown, 20-lb box	— @1 30
Dehesas, 20-lb box	— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¼@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Oranges have been in better request, but there was an increase of offerings, and the market showed no appreciable improvement in quotable values. For choice to fancy Navels, however, the market was moderately firm. Tangerines of fine quality sold to fair advantage. Lemons were not in active request, and only for most select were prevailing values well sustained. Not many Limes on market, nor was the demand for them brisk at the prices asked.

Oranges, Navels, ℔ box	1 25 @2 00
Oranges, Seedlings, ℔ box	75 @1 00
Oranges, Cal. Tangerines, half box	75 @1 15
Oranges, Japanese Mandarins, ℔ box	75 @1 00
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 25 @2 00
Limes, Mexican, ℔ box	4 50 @5 00

Nuts.

Not much doing in nuts of any sort. Offerings of Almonds are mostly small lots, and these are expected to clean up on local account during the spring and summer. Walnuts of common quality are in fair supply, but choice are in light stock.

Chestnuts, Italian, ℔ lb	7 @ 9
Nonpareil Almonds	14 @17
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	6 @ 7
Cal. Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

Not much dry wine of last vintage now remaining in first hands. Market for fairly good to choice 1904 product is firm at 14@17c. per gallon. A recent transfer of a very desirable lot in Sonoma county is reported at 17½c. The Wine Dealers' Association quotes 1904 sweet wines at 25c. per gallon delivered at wineries. It has been reported that the price was reduced from last year's figure for the purpose of crushing out competition. It is asserted, however, on good authority, that last vintage is not of high average quality and is hardly as good value at 25c. as was vintage of 1903 at 30c. a year ago. The steamer City of Panama, sailing on 21st inst., carried 32,881 gallons and 10 cases, mainly for New York. Receipts of wine at San Francisco last week were 358,525 gallons, and for preceding week were 403,000 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904	Same time last year.
Flour, ¼ sks	52,305	2,792,686	3,388,401
Wheat, ctls	84,760	2,015,264	1,499 291
Barley, ctls	95,866	2,471,955	4,496,010
Oats, ctls	1,898	647,315	681,632
Corn, ctls	5,537	125,910	93,257
Rye, ctls	450	38,452	35,663
Beans, sks	10,874	444,609	544,971
Potatoes, sks	46,973	796,866	808,847
Onions, sks	2,101	87,298	105,177
Hay, tons	3,852	114,104	113,321
Wool, bales	269	39,867	34,747
Hops, bales	457	34,146	27,658

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	21,248	2,023,120	2,323,936
Wheat, ctls	75,072	736,114	704,101
Barley, ctls	74,773	1,569,465	3,541,904
Oats, ctls	476	48,248	15,088
Corn, ctls	1,946	65,739	11,564
Beans, sks	1,388	39,614	23,?66
Hay, bales	1,728	127,573	101,924
Wool, lbs	....	830,690	1,848,923
Hops, lbs	1,636	273,712	499,126
Honey, cases	....	1,445	3,971
Potatoes, pkgs	2,509	61,953	66,283

Patrons of Husbandry.

Grange Notes.

Penn Grove Grange was organized at the town of Penn Grove, Sonoma county, by D. M. Winans, Deputy Master of Petaluma Grange, with the following officers:

Master, C. E. Parkinson; Overseer, D. Batchelor; Lecturer, R. H. Waite, Steward, E. Evart; Assistant Steward, C. M. Snyder; Chaplain, Mrs. H. C. Elphick; Treasurer, F. G. Newbegin; Secretary, F. S. Farquar; Gate Keeper, J. H. Middleton; Pomona, Miss May Evart; Flora, Miss Maud Lake; Ceres, Mrs. A. Anderson; Lady Assistant Steward, Mrs. F. S. Farquar; Organist, Miss Myrtle Middleton; Treasurer, one year, R. C. Wessel; Treasurer, two years, C. J. McCarty; Treasurer, three years, H. F. Bengstaff.

Deputy Winans has presented Petaluma Grange forty-five applications since he has received his commission as Deputy Master. They will receive instructions in first and second degrees January 28.

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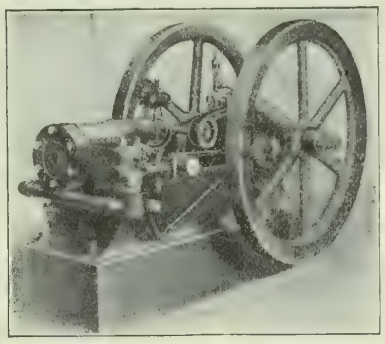
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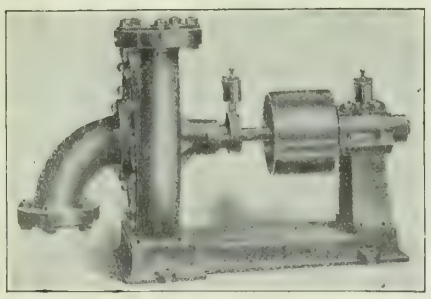
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THE DAIRY.

What a Veteran Alfalfa Grower Thinks.

Mrs. C. B. Mills of Merced, Cal., writes to the Successful Farmer: As there is much interest manifested at this time in the growing of alfalfa in various places, I thought a little information from a part of the Pacific coast would be of interest. "It was in 1850," says H. J. Ostrander, a pioneer of '49, "that I was induced to begin the cultivation of alfalfa, then known as Chile clover, on my ranch in Merced county, Cal. It was an account of the productiveness of the clover in Chile, written by the United States minister to Chile, that first attracted my attention, and after some hesitation on my part concluded to try the experiment. As my ranch was well adapted to its growth, it naturally grew profusely, but it was several years before my neighbors would raise it, believing that stock would do as well on brush as on that 'stuff.' A brother pioneer, living at no great distance from me, ordered the weeds cut out of his yard, where he had a small patch of alfalfa. When the man asked him what he should do with that 'clover,' he was told to burn it up with the rest of the weeds. And he was only one of the many who were prejudiced against alfalfa."

From such a small and unsatisfactory beginning the cultivation of alfalfa has developed until now the experimental stage is passed, and millions of acres are growing, with many new tracts seeded annually. The first and most essential thing to consider in the successful growing of alfalfa is a deep soil, free from alkali, with an abundant supply of water. The rainless summers make irrigation necessary and flooding is the method in general practice. The preparation of the land depends very much on the slope and the character of the soil.

Surveying is advisable to ascertain how much leveling will be necessary, and where the checks are to be made. This will enable an even distribution of the water to a proper depth without waste, and will economize time and labor. The checks modify the movement of the water and restrict it to definite areas. Ditches are made which carry water on the land from the canal and waste ditches that drain it. All this must be done in a systematic way, or the result will be disastrous. An experienced grower can generally secure better results by employing a contractor who understands laying out all the fields, so that the irrigation water is satisfactorily apportioned. The ground should be given a deep plowing and prepared in the early part of the rainy season, which will allow the banks, checks and ditches to become solid, so that they will hold the water. In February it is best to give the land another plowing to kill the grass and weeds, and then seed in that month while the ground is moist. This will enable the alfalfa to get started by rainfall moisture, which will secure growth enough to shade the ground somewhat before the first irrigation is applied.

It is not found advisable to sow barley or any other seed with the alfalfa, but to give the seed the full advantage of the moisture. Twenty pounds of seed will be sufficient under ordinary circumstances to insure a good stand on one acre. Two crops may be cut first season, after which three or four are harvested, averaging about six tons to the acre. There is no danger of rainfall during the harvest season, and the crop can be secured in fine condition. When alfalfa hay is made in large quantities it is frequently stacked in the field, but quite often put in large piles and allowed to cure and then baled. The price of baled alfalfa hay in California runs from $8 to $10 per ton. When the water supply is not exhausted an abundance of good pasture can easily be grown after the last cutting, but pasturing land in alfalfa is a positive detriment. Stock tramp the ground very hard, eat the alfalfa out by the roots, break the boxes and injure the ditches and checks.

Alfalfa comes to full maturity the third season, and thereafter the first crop is greatly damaged by a growth of foxtail. At various times the grasshoppers are a troublesome pest, migrating from one field to another, destroying much of the crop. The gophers are a continual annoyance and can only be exterminated by the use of poison. It is often found necessary to make the checks too high to conveniently run machinery over them, and it has a tendency to mar the beauty of the fields. Good land with water ranges from $50 to $90 per acre, and the average cost of preparing it for seeding it to alfalfa is $10 per acre. This does not include flumes, boxes, bridges, and an annual water tax, which is from 50 cents to $2 an acre. It requires energy, patience and money in abundance to begin the growing of alfalfa successfully in California.

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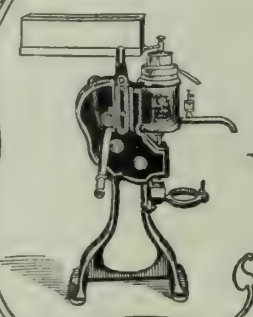
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The characteristics that make the profitable feeder are naturally more difficult to detect in animals in stock condition than when fattened, but notwithstanding it there are a number of indications that are fairly reliable.

Though the young steer may be comparatively thin in flesh and temporarily lacking the thick, even covering of the back and ribs so essential in the finished carcass, he must nevertheless present that blocky frame and stoutness of build, accompanied by short, straight legs, wide back and loin, well-sprung ribs, fullness back of shoulders and in flanks, prominent brisket, full neck vein, wide chest and well-rounded barrel together with a good soft, mellow handling skin and fine, silky hair, giving what is termed the thick, mossy coat, without coarseness and with it all a good strong, vigorous head, clear, full eye and quiet temperament.

The importance of an even covering of flesh and good handling quality can hardly be overestimated. The bone should be moderately fine and clean. Coarseness either in the bone or about the head and horns is particularly objectionable, as it indicates coarseness of texture throughout and a greater percentage of offal and cheap meat, as well as a tendency to sluggish circulation. The head should present a certain refinement, finish and vigor that in a measure indicate general quality and superior excellence of finished product, though this refinement must not be accompanied by delicacy.—Prof. C. F. Curtiss, in Fourteenth Annual Report of the Bureau of Animal Industry.

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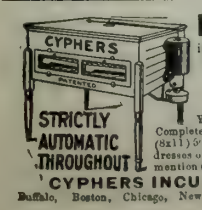
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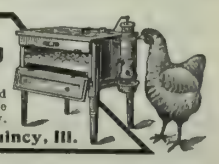
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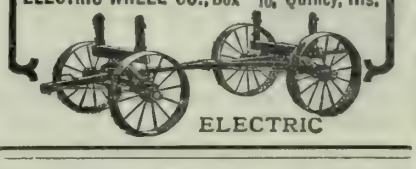
At the meeting of the National Bee Keepers' Association at St. Louis, Manager Brown of the California Bee Keepers' Association made an interesting statement concerning the protection of extracted honey and bee keepers' brands: The adulteration of extracted honey is something that is carried on largely. I have seen great quantities of it. I have seen honey that has been fixed up for the market and put in five-gallon cans, put back into the original package and marked "Pure California Honey," where there was from 40% to 60% of glucose in it. I know those things are done in our large cities in the West and Middle West; I know it is done in Kansas City, and I am pretty sure it is done in this city. Our honey that goes on the market in carload lots to-day ends up with the consumer largely adulterated. The man who consumes our article does not know what he is using. It doubles the output and destroys the flavor; it ruins the demand. I think it is time we should take steps to protect our honey.

With reference to the matter of a brand, the Central California Bee Keepers' Association, of which I am manager at present, has adopted the brand, and in the manufacture of our boxes we have the brand printed on the box. It says, "Central California Honey-Producers' Association. Pure Extracted Honey." The question is, How can we guarantee that the goods put up in our packages are pure when they reach the consumer? A man might receive a quantity of our packages and adulterate his honey just the same as they do now, and sell under our guarantee. In order to overcome that difficulty we have agreed upon this: We are going to have our honey sealed. First, however, it will be graded by an official grader, appointed by our association for that purpose, and every can of honey that is in a case will be sampled, a sample drawn from every can and placed in a small bottle. In the manufacture of the cases we have ordered that a hole be bored in the partition of the box about 3 inches deep to insert the sample. We take out the sample and place it in the little bottle and slide it down in the hole. Then, when the honey is thus graded by our official grader, each can has to be sealed with the association's seal. Our goods will be protected by a guarantee, and the guarantee will be printed and wrapped around the bottle in the hole. Now, any man buying a can or package of honey coming from Central California with the seal broken will naturally have to take his own chances of that product being pure, just the same as he would any other goods protected by seal; and any man who wants to be sure his goods have not been tampered with will find the seal intact, and buy nothing else. We will have to protect our honey unitedly through our associations, and I believe through the National something will develop before this convention closes that will bring about this line of work.

Mr. Calhoun—I think there is something practical in Mr. Brown's talk in regard to giving a guarantee of the purity of our honey. Now, with regard to another feature, the bringing before the people the advantages that are to be found in using honey from a medicinal and food standpoint. How shall we educate the people up to a knowledge of the advantages of honey in this regard? I believe we should have a concise article covering these points. I believe we can afford to have that article printed for our use, and, as Mr. Brown has suggested, with a sample going with each case of honey. I, for one, could afford to go to my local printer and have slips printed bringing forth these advantages and put one in each package of honey I sold.

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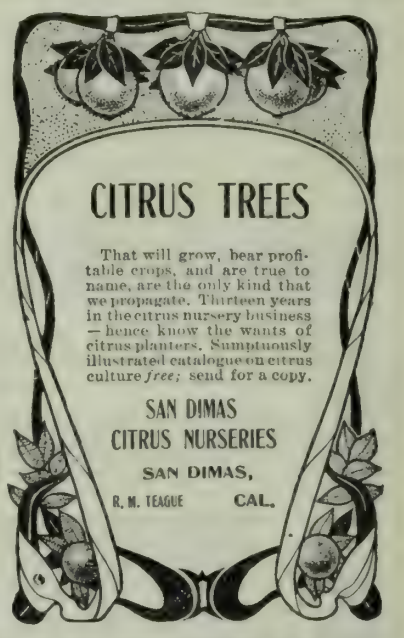
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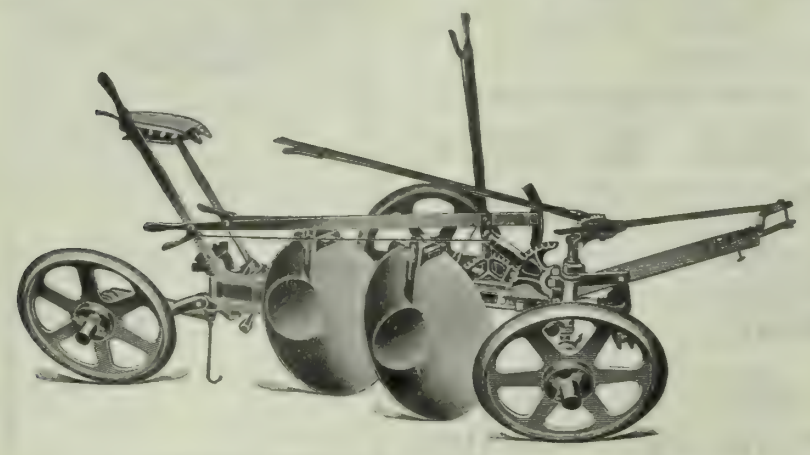
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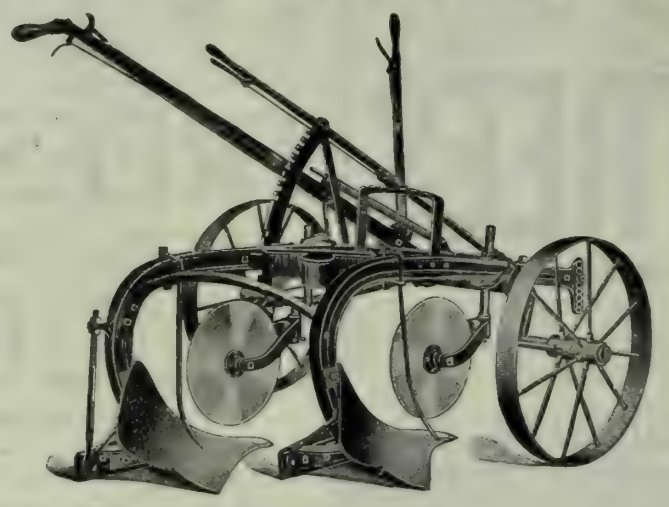
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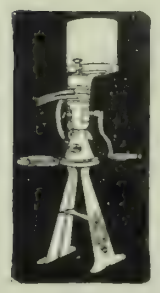
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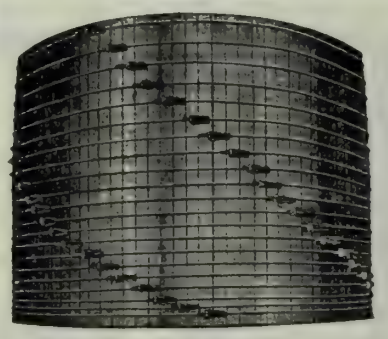
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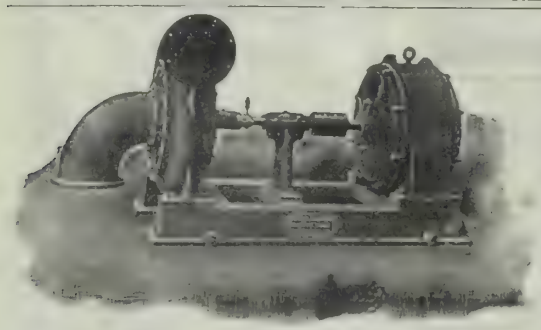
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THE PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 5. SAN FRANCISCO, SATURDAY, FEBRUARY 4, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

In the Mountains.

In our choice of pictures we have lingered on the coast for several weeks and now take to the mountains again. The development of Nevada by national irrigation enterprise, which is proceeding forthwith, makes all details of mountain crossing more interesting, and it must be remembered also that California has a couple of whole counties on the other side of the Sierra Nevada and several others which hang their sunrise ends over the same barrier. Road building is the key to the development of the whole region after the distribution of water, when needed, has been arranged.

We show two views of road building. One is a simple form of bridging, with logs and poles cut from adjacent trees. For temporary purposes such bridges answer and are cheaply renewed if swept away by floods; but, of course, such bridge building only pertains to the opening of the country. If it advances, better things are required. In contrast, there is a picture showing a permanent piece of road building, such as the State undertakes in the mountains. Beautiful pictures like this are found everywhere on our mountain grades. The last picture gives a glimpse of the rough mountains on their arid side. It is fortunate that much of such land is of mineral character, for nothing agricultural but a goat can do much with it. In California the greater part of the vein mining is carried on at altitudes between 1000 and 3000 feet, and in many instances the mines are situated in pleasant valleys, surrounded by, or near, fertile farms and meadows. To the California miner of the foothill region, the idea of mining up near the summit of the snow-clad Sierra is abhorrent, notwithstanding their inviting coolness during the hot summer days. Still, there are valuable ore deposits in the high Sierra, some of which have been developed, to a limited extent, in past years and which to-day offer inducements to capital superior to those found in many distant lands.

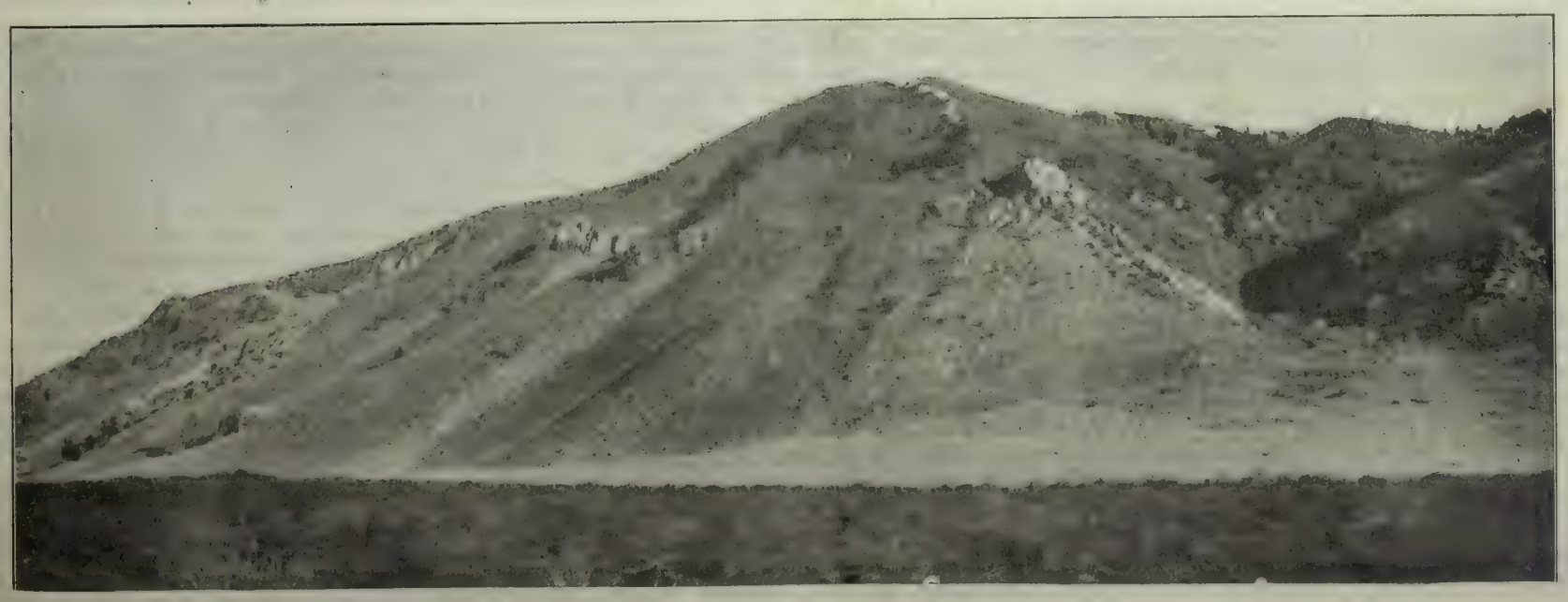
The great drawback in the development of industry in the Sierra is the lack of inexpensive transportation, but that the topographical difficulties are easily overcome is already demonstrated in many places. Good roads exist, and it only requires an effort to extend these highways or to construct new ones to reach various districts.



Heavy Retaining Wall on State Highway in the Sierra Nevada From Placerville to Lake Tahoe.



Bridge Construction in the Sierra Nevada, Near Camp Hassan, on Bishop Creek, Inyo County.



View South From Bishop Park, Inyo County, Showing Heavy Talus and Scanty Vegetation at High Altitude in the Sierra Nevada.

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DEWEY PUBLISHING CO.....Publishers

E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, FEBRUARY 4, 1905.

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The Week.

We are apparently in the midst of a far reaching and abiding rainstorm. On Wednesday, as we go to press, the figures for the season are above the average for the date at all points in central and northern California, and at some points in the south the same condition holds, though at others there is still quite a shortage. It may be said, however, that a full year's production is assured and a good wetting down to ground water will be realized nearly everywhere.

The saddest event of the week, from an agricultural point of view is the work of a blizzard in Florida, which has wrought as wide havoc with tender vegetation as did that of a decade ago. The temperature is said to have fallen even as low as then, even to 16° at Jacksonville, and to have destroyed all the oranges of the current crop, even freezing them in cars and packing houses. The effect upon the trees is still to be discerned, for it takes time to manifest itself, but, as the local telegraphers say it will be as bad an experience as that of a decade ago, there is much to fear in tree killing also. We must wait for mail advices to measure the catastrophe, but it is clear to see that knocking the main part of this year's Florida oranges out of the Eastern markets will make a sharp and early call for the California crop. Of course such events once in a decade will destroy Florida's fame as a safe semi-tropical region and will give to California the possession of all there is of that sort of country in continental United States, except the small area in southwestern Arizona, which is really a part of our own favored district.

Wheat is still very firm and, though easier to-day, is still above last week's figures on futures. Spot wheat is firm as a week ago. There have been two clearances, one of wheat and the other of wheat and barley, and this uses up the engaged tonnage list. No one wants ships; rates have dropped to a nominal 10@12s 6d, and no wonder ships are going out in ballast, as there is little chance for them until another crop is gathered. However, some wheat is going to Texas by rail, as the Texas millers are short, and this helps to lessen the chance of a ship. Barley is strong and higher for spot. Oats are firm and corn easier, with much Eastern coming. There is a fair business in beans at old prices, with white beans looking upward. Bran and middlings have a light trade at firmer rates. Hay is weak with heavy receipts and light demand. Beef and mutton are unchanged and hogs are higher, as there is a good call for fresh pork. Butter has an easier tone with heavy stocks and a light demand. Cheese is quiet and steady. Eggs are moderately firm, going fairly at the decline of two weeks ago. Poultry is firm because of Chinese New Year demand. Fancy potatoes are all that escape weakness. Onions are a little off, and Australians held above sales. The heavy supply of common apples continues, but fancy Newtowns and Spitzenbergs bring good prices. There is no change in oranges, though a better tone is talked of. The demand is mainly for cheap oranges, of which supplies are ample. Lemons are quiet. There is little doing in dried fruit, with light stocks firmly held. Nuts are also quiet, with stocks mostly of low grade. Honey is slow, with much amber honey not called for. Hops are held as before, and little doing. Wool is the same, with little here and little coming in, and all distant markets brisk and strong.

A movement to change the character of the fruit growers' conventions, or to have a set of a different character, seems to be making headway in the Sacramento district on the initiative of the Placer county growers. At least two meetings have been held demanding that during the present year "the fruit growers of the State hold a convention of their own, and that no person be allowed to take part in its deliberations except by consent of the chair, unless the person is a bona fide fruit grower, and without any side interests that are inimical to the growers; and that growers perfect a State organization for the protection of the fruit growers' interests."

The idea is a good one. No one has any right to object to the growers holding a meeting and doing what they like with it, and they might advance their interests considerably. It should, however, not be forgotten that the presence of other collateral branches of the fruit interest, viz., trade and transportation, came into the annual conventions by the urgent invitation of the growers. Years ago the growers held if they could only get leading representatives of trade and transportations into close council, much could be effected which could not be done by arm's-lenghth committee conferences and reports and we clearly remember how pleased the growers were when the first railway traffic manager came to the campfire. Now, in our opinion, if the growers have changed their minds as to the desirability of mixed meetings, all that is necessary to do is to make up the next year's convention programme without trade or transportation talks and send no urgent invitations to these branches of the fruit industries, and we shall have just as clear a lot of growers as you could get in any other way. It is not necessary to fire rocks at the other people to keep them away—simply do not urge them to come. The State Horticultural Commissioner can determine just what a convention he will have by the style of the invitation he sends out.

If a bill now before the Legislature succeeds the State Board of Agriculture will be well provided for. The bill is to appropriate $180,950 to be paid the board of directors of the California State Agricultural Society to be expended on the fair grounds. It is proposed to erect a building each for swine, sheep, mules, horses, ponies, poultry, dairying, carriages, trotting and racing horses. Racing tracks, grand stands, judges' stands, and, in short, all the manifold needs of an up-to-date racing park are provided for. The proposition seems to be short on agriculture (except in stock lines) and horticulture also, but this is possibly to be accounted for by the fact that the stock interests are more active. So long, however, as the old pavilion near the capitol is in commission, the vegetable side is provided for, but the fair should ultimately be complete at one place. It is better for all interests that this should be so.

Three bills now before the Legislature drawn by Superintendent Barr of Stockton, president of the State Teachers' Association, will introduce the study of the elements of agriculture into the public schools of the rural districts, will provide for supervision of this special instruction in each county calling for it and provide also a general bureau of information, which will be promotive of the trial and success of the new study. Both agriculturists and educators are urging the study of agriculture and the elements of the sciences involved in it as likely to be more valuable than some of the old line literary subjects which now take nearly all the time of the pupils and tend to make the pupils more interested in country life and country callings. Our farmers' societies and farmers' meetings are constantly calling for change in the curricula of the country schools to this end and Mr. Barr's bills cover it in a way which promises speedy and satisfactory results.

QUERIES AND REPLIES.

To Go into Orange Growing.

To the Editor:—I should like to have your opinion upon the advisability of an Eastern man of moderate capital entering the fruit-growing industry in southern California. I am told that the market has gone to pieces of late and that business is overdone, and that a man of moderate or limited means cannot dispose of his produce with profit. Can you substantiate or correct this information?—Reader, Montgomery, O.

As to the standing of orange growing in California, our belief is not in accordance with what some consider to be the situation. It is true that prices were low last year, and one grower told us that his profit was but 6% on his investment, when in other years he had realized as much as 15% and sometimes more. He has a very fine piece of citrus property and it is thoroughly well cared for. All his labor, however, is paid for and his percentage would have been higher if he had used his own time in the enterprise. On the other hand, there are undoubtedly many citrus properties which are not profitable. Trees have been planted in poor places and investments on good soils have not always been profitable for lack of proper management. It is true that the future product will be much larger than it is at present, owing to the young trees not yet in bearing, but our belief is that good orange property, well cared for and producing first-class fruit, will continue to be profitable. In beginning, however, without knowledge of the business and of conditions under which it is carried on, a man with small means for investment should be extra careful against making mistakes. It would be safer if you should come to California, look into the situation for yourself, examine the different localities where property is available, and make up your mind on the basis of such personal investment.

Bacteria Differ and Are Not Nematodes.

To the Editor:—Do all leguminous plants have the faculty of storing nitrogen in the soil; are they the only kind that store up nitrogen? So far I have been able to find the nitrogen nodules on two kinds of plants only, the Lupinus Chamissonis Esch., which is a leguminous plant, and the common tomato plant, which is not a leguminous plant.

I have examined closely the roots of bean and pea plants, but have found no nodules. It cannot be the case on account of the ground not being inoculated with the proper bacteria, for the little common blue lupin bears an abundance of nodules in proportion to the size of the plant. Your answer and explanation will be greatly appreciated.—C. E. D., Kingsburg.

This is interesting. In the first place bacteria are not the only things which cause swellings and nodosities on the roots of plants. You are right about the leguminous standing of the lupin and the tomato—the swellings on the roots of the latter are not caused by bacteria, but by nematodes, probably, and they have no nitrogen-gathering power; they are, in fact, minute animals and not minute vegetables as the bacteria are. The swellings on the tomato roots are injurious; those on the lupin are beneficial to the host plant. As for the beans and peas being properly supplied with bacteria because the lupins are—that does not follow. There are many kinds of bacteria and they suit their own natural host plants and not others, so you might have your soil full of lupin bacteria and still not have those which live on the roots of beans and peas. Write to Hon. James Wilson, Secretary of Agriculture, Washington, D. C., and ask him for some bean and pea bacteria, introduce then according to directions and see if it makes any difference with your plants. These plants do have plenty of nodules on their roots in this State—during certain times in their growing season at least.

Muscats on Southern California Mesas.

To the Editor:—I wish to plant twenty acres to grape vines, Muscat of Alexandria, with the object of drying for raisins, but am told this class is too delicate for California unless in favored places. However, I have conceived the idea of having it grafted

on resistant stock—Champini for example. Can you advise me if this would be a suitable root to graft on, and if not, which other would you advise? The land is situated 3 miles directly below Mount Lowe, east of Altadena. The soil is loose, gravelly and decayed granite, the situation sheltered, the climate mild and frostless. There are many vineyards surrounding, all prosperous and none irrigated. Where would be the best district to secure cuttings for non-irrigated soil?—SUBSCRIBER, Pasadena.

There has been trouble for years with the Muscat of Alexandria on the mesas of the San Gabriel valley and elsewhere at the south. It is not that the Muscat is particularly tender; it is very thrifty and productive in regions where there is plenty of frost—in fact, wide extremes of cold and heat. Possibly it is the lack of seasonal changes on the frostless mesas which throws the vine off its course. As for growing raisins without irrigation in southern California, it must be an undertaking with some risk, for a good, large raisin can only be made from a good, large grape, and to get size you must be sure of moisture enough—although, of course, it is not essential that it should be by irrigation. You may have a place where rainfall and underflow may be enough. But even with moisture assured the Muscat may be un satisfactory in the situation you describe. As for grafting on Champini, that brings you up against another proposition which you will have to demonstrate for yourself. There is not enough experience with the variety to establish its value. Your proposition does not strike us favorably, because of the several points of doubt in it, but still you might be very successful. You must take your own chances.

Fruit Tree Troubles.

TO THE EDITOR:—I have thirty acres in peach trees 2 years old, which did not make much growth last year. Every one that saw them said that red spider was the trouble. When is the best time to spray for red spider? What is the best mixture to spray with and how is it prepared? What is the best spray for the codlin moth and when to use it? Is there anything that will prevent borers from killing young apple trees?—SUBSCRIBER, Dinuba.

If the trouble last summer was the red spider you will now find the bark well sprinkled, or in bad cases almost covered, with the eggs, which are round ruby-red bodies when looked at with a magnifying glass. These eggs will hatch into minute mites when the heat is strong enough, which will be some time after the leaves have appeared. The easiest way to treat small trees is to blow or shake flour of sulphur onto the foliage and the vapor from this will kill the mites. There is also a very effective spray for the red spider, which was described in full in the PACIFIC RURAL PRESS of September 5, 1903. But before you decide whether this insect is the cause of your trouble you had better send a few twigs and pieces of branches with rougher bark, so that we can examine them for you. It is time now to get things together and prepare for spraying for the codlin moth, though the spraying is not to be done until the small fruit is set. Full information about treating this insect was given in the PACIFIC RURAL PRESS of April 16 and 23, 1904. The best way to keep borers out of your fruit trees is to whitewash or otherwise protect the bark from sunburn.

Try Something Easier.

TO THE EDITOR:—Would you please advise me through your paper as to whether it would be profitable to put out a crop of sweet anise for the juice or extract, for the market? What time of the year is the seed or plants planted? Is the seed sown broadcast or planted in rows? What is the market price of the stalks or extract? By what kind of machinery is the juice extracted? The soil here is a light, sandy loam. Does the anise need irrigation?—NEW COMER, Lodi.

The experiment would be easy enough to try, but the profit would be too doubtful to warrant trial except on a small scale. In your region, sow the seed in drills, about 2 feet apart, in February or March. Cultivate well and you will probably get a seed crop without irrigation. The salable part is the seed, and the way to begin is to grow some seed and send samples to Eastern manufacturers of essential oils, and if they can use it and, if so, how great a quantity. The oil is made in a factory, with the best machinery and processes, and there is nothing to warrant the grower in tackling that end of the proposition. There is nothing to prevent your trying such a thing as growing anise seed, but, if you are looking for something to make a living upon, you had better grow some eggs or chickens or cabbages, which people really want and will pay for.

Forage Plants for Overflowed Land.

TO THE EDITOR:—I have some river bottom land that becomes flooded by every high water. The land is gradually being washed away. I saw in the announcement of University seed distribution which you published that African tansy holds the sediment. Would you advise me to plant this on my land, or do you know of something that will serve the purpose better? Which is the most successful method of planting willow cuttings? — FARMER, Humboldt county.

We cannot tell you surely whether the African tansy is the best plant for you to establish on your sediment land. It is generally advocated as a plant for deserts. You can only tell by trial how it will succeed under your conditions. We should think that you would get a covering of red clover or rye grass, or both of them sown together, which would be much more satisfactory than this wild plant. You cannot very well miss it in planting willow cuttings. Any sticks from the size of your thumb to the size of your arm will grow readily when put in the moist soil.

Making Citric Acid.

TO THE EDITOR:—Can you give me a working formula for making citric acid?—SUBSCRIBER, Fair Oaks.

We are sorry we cannot; it is not a thing which can be settled with a recipe. It is rather an intricate operation in manufacturing chemistry and requires capital for a proper outfit and technical skill to use it. You can find the apparatus and process described in any good work or chemical technology, such, for example, as you could most conveniently find in the State Library at Sacramento.

For Fence Posts.

TO THE EDITOR:—Please tell me through the columns of your paper what is the best substance or mixture to prevent fence and other posts from rotting in the ground, and how to use it. Redwood and cedar posts do not stand very long unless one gets them from heart wood.—SUBSCRIBER, Loomis.

There are two practices quite common; one is to char the lower part of the posts over a fire producing a layer of charcoal on the outside; another is to dip the posts in boiling gas tar. You can probably hear of special preparations and their claims by addressing those advertising paints in our columns from week to week.

Wants to Grow Cocoanuts.

TO THE EDITOR:—I want more ornamental trees. I have a good many kinds, but I want all I can get. How can I get a start of cocoanuts? Will a nut grow if planted same as seed of any other trees? AMATEUR, Ramona.

You can get a certain growth of a cocoanut palm by planting the nut with the eyes up and covering only slightly, but the cocoanut palm will not grow anywhere in California excepting during the first summer. It is strictly tropical and California has no strictly tropical conditions.

Yield of Dried Peaches.

TO THE EDITOR:—Which peach will weigh the heaviest after being dried, the Muir or the Susquehanna?—READER, Fresno.

So far as we know, the Muir holds the record for largest return from a given weight of fresh fruit. If any one has other experience let him speak.

Walnut Blooming.

TO THE EDITOR:—Which is the latest bloomer, the Franquette or the Santa Rosa soft shell?—READER.

The Franquette is later in blooming, but Mr. Burbank's observation is that the Santa Rosa soft shell is more abundant in bearing in spite of earlier blooming.

A Mild Type of Limburger.

TO THE EDITOR:—I send a specimen of cheese sold in Chico stores under the name of "Oregon Cream" cheese. Please tell what it is.—CHARLES REEVES, Chico.

The cheese is made in Oregon and is of the Limburger type, although milder on account of being less mellow and less aged than the Limburger of Wisconsin and Europe.

Egg Plants and Onions.

TO THE EDITOR:—Kindly tell me at what stage of their growth egg plants are in their prime for eating. At what stage do they begin to deteriorate? What place in California is the greatest onion-producing section?—H. J., Escondido.

Egg plants are gathered whenever they reach acceptable size. There is little change in flavor for some time during their growth, though, of course, they can be allowed to go too far. The greatest amounts of onions are grown in Sacramento, San Joaquin, Santa Clara, Santa Cruz, Alameda, Los Angeles and Yolo counties, in the order named—but the first four counties named produce over three-fifths of the whole crop of the State.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending January 30, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director

Sacramento Valley.

Warm, cloudy weather and rain continued until the 24th, and cooler weather prevailed at the close of the week. The Sacramento river at Colusa on the 24th reached the highest mark ever recorded, and the high water caused several breaks in the levees north of Colusa. It is reported that thousands of acres of valuable grain lands were overflowed and that the grain was seriously damaged. No great damage was done in the vicinity of Sacramento. Grain continues in excellent condition except in the districts affected by high waters. Plowing and seeding are progressing slowly on account of the heavy soil. Green feed is plentiful and stock are doing well. Pruning is progressing.

Coast and Bay Sections.

The weather was warm and favorable for growing crops most of the week. Heavy rain fell in the central and northern sections and light rain in the south early in the week. Grain is in good condition in all sections and making satisfactory growth except in some of the northern districts where the heavy rains have retarded its progress. Plowing and seeding are progressing rapidly in the south, but the soil is too wet for working in portions of the north. A large acreage has been planted to wheat, oats and barley. Green feed is abundant and cattle are in good condition. Tree and vine pruning and planting are in progress.

San Joaquin Valley.

Cloudy weather with occasional showers prevailed during the first part of the week and cloudy and foggy weather the last part. Warmer weather prevailed than for some weeks past and grain and green feed made rapid growth. Plowing and seeding are progressing rapidly and early sown grain is a good stand. Cultivating and pruning orchards and vineyards are progressing. The soil is in excellent condition and a large acreage will be sown to grain. Green feed is plentiful and stock are healthy and in good condition.

Southern California.

Warm and generally clear weather prevailed during the week and conditions were unusually favorable for all growing crops. Plowing and seeding are progressing rapidly and the grain acreage will be larger than for several years. Early sown grain is making excellent growth and pasturage is becoming more plentiful. Barley has commenced heading out in the vicinity of Mecca. The ground is being prepared for beans, early potatoes and other crops. Stock are in good condition and the dairy interests are prospering. Heavy shipments of oranges and lemons were made during the week. Tree and vine pruning continues.

LOS ANGELES SUMMARY.—Plowing and seeding continue; a large acreage will be planted. Vegetation made fine growth under the influence of warm, good growing weather. Warmest winter for years; little frost, some places none.

EUREKA SUMMARY.—The weather during the week was warm, with considerable rain. Farmers are plowing and sowing grain when weather permits; the acreage is somewhat larger than last year. The soil on the lowlands is too wet for cultivation.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 1, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	0.57	22.12	33.35	25.92	62	46
Red Bluff	0.70	22.30	13.62	15.05	64	42
Sacramento	0.38	12.22	5.13	11.37	66	40
San Francisco	0.50	14.60	7.10	14.20	63	46
Fresno	0.14	7.12	1.47	4.94	62	40
Independence	0.08	1.05	0.42	2.65	62	28
San Luis Obispo	0.14	8.81	0.82	12.38	76	44
Los Angeles	T	6.13	0.57	9.39	80	44
San Diego	0.00	4.77	0.46	4.07	68	46
Yuma	0.00	1.87	0.66	2.07	78	48

THE FIELD.

How to Make Dry Farming Pay.

By Mr. George L. Farrell, Smithfield, Utah, at a Utah Farmers' Institute.

I commenced dry farming thirty-eight years ago on the other side of the valley. Of course, some of my neighbors and friends thought that I had gone crazy, and told me that they would not give me their ten acres on this side of the valley for my whole quarter section. I commenced, of course, not knowing much about it, and broke up some land. I got several of my neighbors to come and join me, and they took up a quarter section each. This was at the time the railroad land was made known to us, and we took it up under the railroad law. Of course, we were anxious to have our corner, so I went and got a surveyor to come and survey the land. When he had finished I asked him for his bill. Eighty dollars, he informed me, and we were to pay him in the fall. We went to work then and broke up some of the land and put it in to the best of our ability. That season the grasshoppers came and ate up our crop. Several of the company got discouraged and backed out. In the fall the surveyor came along and wanted his pay. My neighbors told him he could have the land before they would pay him anything. He came up to me and said that, as I was the man who employed him, I was the one to whom he looked for his money. I went to my neighbors and told them that if they would pay over their certificates to me I would pay for the surveying of the land. They did so. I have been at work continuously from that day to this. Many men made all kinds of fun at me because I made so many improvements before I entered the land, thinking that it would influence the railroad people to raise the land up to an enormous figure. I thought that I could make the land pay for itself while using it, and I worked away until at last the company came along and valued it at $7 per acre. My neighbors saw that I was raising good crops of grain and, of course, felt rather dumpy. I had seven years to pay for it, with interest at 7%. I had six cows and I intended to fatten and sell all the calves of the cows to pay for the land.

An Encouraging Experience.—I continued to work away until I had 500 acres broken up. The next season I had a big, stout, hardy man working for me. When he was plowing up the quarter section I told him that I would pay for the plowing, furnish the seed, drills, put the seed in, and give him one-half of all that he raised on one forty. I also told my boys that I would give them one-half of all that they raised on their forty. I took the center forty. I gave this man his choice and he chose the north forty. I engaged this man by a written agreement to plow his land 7 inches deep. He did so—did a good job. After the ground was plowed I told him that I wanted him to do just as I told him—that he could have one-half of all the grain that was raised on it by paying for the cutting and threshing. He said, "All right." I instructed him, with my two boys, to go to work and harrow one-half of it lengthwise, then take the leveler and level it off, then harrow it one after the other crosswise, making in all six times harrowed. I took the seed drill and sowed it while they were harrowing the other half. They went to work and did just as I told them. At the end of thirteen days they had one forty finished and commenced on the other. One day this man said that he would ride home with me and see how his family was getting along. On the way home he said:

"Although you have furnished me my board and horse feed, I am not satisfied. My neighbors tell me that I won't make my salt, because they have never raised over ten bushels on their dry farm."

I told him to pay no attention to them, but to do just as I told him. He said that if I would pay him two bushels of wheat per day, continue to board him and feed his horses, he would work for me until I got the whole quarter section done, with the understanding that he was to have the wheat that fall. I told him:

"All right. I will give you three bushels a day—one-third more than you asked."

So I gave him forty bushels in the mill for his thirteen and one-half days' work.

"Now, you must continue to work from this on for three bushels per day," I said.

"All right," he said.

We put the wheat in. I took the drill and sowed his forty acres while they were working on the boys' forty, and they did it just as I told them, and we got the whole thing done. Then there came a beautiful rain and the wheat come up nicely. It was early enough so that it made a nice start in the fall. Next spring it came along finely. I made up my mind to stack John's on his own forty. When we got through threshing it made 1633 bushels.

"Well, John," said I, "who is the most foolish, you or I?"

"I will do as you tell me next time," he said.

He might just as well have had 1480 bushels as 40.

Another Experience.—I must relate another incident about a man from Logan whom I had working for me. He was an Englishman. He said that he would not take anything for his work except heifers. He said that after he could get a herd of cows he would not need to work out; then he would have enough for himself. He did. He kept on until he got a small dairy herd for himself. One day I saw him carrying a pail on each arm and I asked him what he had in them.

"Pea-meal," he informed me.

"What are you going to do with that?"

"Why, I am going to feed my cows."

"All that?" I asked.

"Certainly, you can't expect to get anything out of them unless you put something into them."

That is the way with dairy farming. If you want to get anything out of it you must put something into it. You must work and work hard; commence in good season, and continue to work until you have the whole thing in good trim, and then wait for the outcome. Now, some of these neighbors of mine used to plow about 4 inches deep, sow their wheat broadcast, and harrow it over about once. After it was sowed only about one-third of it would get into the ground; and about June, when the hot weather came, it would begin to dry out. You want to work your ground well and fix it up so that it looks like old ground, and then sow about thirty-five pounds to the acre, then I promise you a good crop.

How Much Seed for Dry Land?——A year ago last fall I had a piece of ground, 110 acres, which I plowed 8 inches deep and then sub-soiled it 8 inches deeper. I sowed thirty-five pounds to the acre. There was a man from Deweyville who had a new thresher, and he agreed to come over and thresh it for me. As he walked along a dead-furrow through this land, just before threshing, he remarked:

"How much do you expect to the acre?"

"Oh! I think it will go about thirty bushels to the acre," I answered.

"I don't; why there isn't enough stubble here for that."

"I don't raise wheat for the stubble—I raise it for the heads," I answered him. "If I were sowing on land that was watered, I would sow three times as thick, but here on a dry farm I only sow thirty-five pounds to the acre." Of course, he thought I was not sowing enough. He would have sowed more.

After a while threshing started up. After they had been threshing for a few hours, this Deweyville man came around and said:

"I declare, this is running out better than any of our wheat."

"I am glad to see it," I said.

When we finished threshing those 110 acres, it made forty bushels to the acre. He was very much surprised. If you put in more than thirty-five pounds to the acre, there is nothing to support it. If you sub-soil it the moisture will not dry up so soon, and, by putting in thirty-five pounds to the acre, there will be plenty of moisture to support it. It is a pleasure to dry farm, when you know how. I like to see men raise good crops.

Another Illustration.—Another circumstance I must relate. A man by the name of Erickson moved into the neighborhood and lived close to my farm. He was a very nice man, honest and faithful. One day he inquired if I was going to sow any rye. I informed him that I was, and he asked for the job of sowing it and wished his pay in rye. I was willing and I agreed to give him three bushels of rye a day. I hauled out the rye into the field. Erickson wanted to know how much I wanted to sow to the acre.

"One-half bushel," I informed him.

"What, only one-half bushel to the acre?" he asked.

"Yes, that is all; I don't want any more than one-half bushel to the acre."

"Why! I am going to sow three bushels to the acre on mine."

"You just remember that you are not in Denmark now, and you will find that out before fall comes."

He planted three bushels to the acre and I planted one-half bushel. When mine came up it looked rather thin and unpromising as compared with his. After a while I employed a man to harrow mine, and told him to harrow it well, and then meet me in Logan and get his pay He did so, and when I paid him he remarked:

"Well, Bishop, you can stick all the rye you get off that piece in your eye."

My neighbor had a thick heavy stand of rye and he was proud of it, I tell you, especially after he looked at mine, torn all to pieces with the harrow, but bless your soul he had too heavy a stand for the soil to support. When it was up a few inches his looked just fine as compared with mine and he came over and said:

"That is the way to sow rye."

"I will show you in the fall," I told him. His made five bushels to the acre and mine made twenty-seven. The heads on his were about 1½ inch long, and the kernel—well, you could hardly see it.

"I have learned something," he said.

"I told you you would. This is not Denmark and you must remember that it does not rain here like it does in Denmark. You don't want to sow on dry farm land as you do on watered land."

Harrow your land just as well as you can do it both ways, make a brush leveler and level it off until it is just as level as the floor. Put plenty of weight on the leveler so that it will break up every lump. Don't roll your ground; but, if you do, be sure to harrow it after.

Deep Work.—Don't forget to sub-soil your dry farm land. Put your plow down 8 inches deep and sub-soil it 6 or 8 inches deeper, and then I will promise you a crop. August and September is the best time to sow wheat on dry land. Sow thirty-five pounds to the acre; no more, but, if anything, a little less. In putting in alfalfa plow the land in the fall, sub-soil it good and deep. Let it lay over winter and as soon as it is dry enough in the spring, so that the dirt will not stick to the harrow teeth, harrow and level it. Then sow about five pounds to the acre with a good drill. Don't wait to plow your ground in the spring, because if you do it will dry out and will not get a good stand. So with every thing else. If you want to sow spring wheat, be sure to have the ground plowed in the fall. Work it well and I will promise you a good crop, and you will be perfectly satisfied.

One year a friend of mine from this side of the valley came over and looked at my crop. He wanted to know if I would trade eighty acres I had over there for eighty acres over on this side. His eighty was under the canal and had a good water right.

"Why," said I, "I will take $500 to boot."

"You must consider that mine has a good water right to it that cost me $1000," he said.

"I don't care, I don't want water; I don't like to wade in it; I want to be plowing and sowing while you are watering."

Dry Land Alfalfa.—I bought a seventy-five acre farm below Smithfield. The man from whom I purchased it had been raising alfalfa on it. I asked him how many times a season he had been watering it. He informed me that he had been watering it four times. I told him that I could not fool away my time watering alfalfa, so was not going to water it at all. He said that I would not raise anything unless I watered it. Next spring I went to work, disked it both ways, leveled it with the brush harrow, and the result was that I cut one more ton to the acre than he did.

"How is it that you can get such large crops when you don't water it?" he asked.

"Why, I work mine and you don't, that is all the difference."

Now that is it. The main thing to do is to work, and the crop will come along itself.

Discussion.—Q. "How deep do you subsoil?" A. "Six inches."

Q. "How deep do you sow the alfalfa seed?" A. "About 3 inches."

Q. "Do you harrow your spring wheat when it comes up?" A. "No sir."

Q. "When do you summer-fallow your land?" A. "I summer-fallow my land just as soon as I can get on it. Some men leave the land until the weeds are about 6 inches tall, but this is bad policy. Turn it upside down and then sub-soil it. Once a professor told me about a scheme he tried. He said that he had a plow made to order that would plow 16 inches deep, thinking that in this way he would do away with sub-soiling. However, the next year he did not have any kind of crop at all. Now when you sub-soil it tears up the ground and drops it right in the bottom."

Sonoma Hop Growing.

L. D. Jacks of Santa Rosa, who has five hop yards already and intends planting another ninety acres this year, has given the Expositor of Sonoma a statement concerning the cost of production, the method of culture and the average profit in hops in Sonoma county, which in view of the fact that many land owners are this year contemplating the raising of hops who never tried it before, will make interesting reading. The following is a part of Mr. Jacks' statement:

"Good hop roots range in price from $5 to $7.50 per thousand and are planted in February and March. In the hills, which are usually placed 8 feet apart each way, two roots are planted; or if the roots should be a little faulty or dry, three are sometimes put in each hill. The best soil is black loam or alluvial.

"The regulation poles on which the vines are to be trained cost about $30 per thousand. There will be 680 poles on every acre of hops, if planted 8 feet apart. The modern trellis system of poling and wiring, in which large sawed poles and heavy wire are used, cost complete not more than $65 per acre and will last 25 years.

"According to many years experience of growers and dealers, the cost of raising, drying and baling the hops so that they are ready for the market is 8½ cents per pound; whatever figure is received above this is clear profit. An average yield per acre in Sonoma county is 1500 to 2000 pounds to the acre.

"About one-half a crop is picked from the vines the same year that they are planted and every year thereafter a full crop, without the necessity of poling and planting. There should be a 30-foot kiln for every 20 acres of hops, and a cooler, 40x60 feet. Suppose that you have 40 acres of hops, the two kilns, cooling room, press and stoves and all other

necessary apparatus complete would cost not to exceed $2500.

"Many yards in Sonoma county in a favorable year have produced 2000 pounds of hops to the acre. Hops in 1904 brought 25 cents per pound and over. At such a rate of yielding, at such a price, a person owning 20 acres would receive just $10,000 for his crop. Deduct the cost of production, 8½ cents per pound on 40,000 pounds, and you have left a neat profit of $3,400, or $170 per acre clear profit. How much more do you realize on your hay or fruit?"

THE BOTANIST.

The California Poppy.

By MR. CHARLES E. JENNY in the Fresno Republican.

One plant—our poppy—cultivation does not drive out. It rather thrives the better in plowed land. In places to-day it blooms in the same golden beds that Muir refers to, and no less brilliant than then, displaying that utmost richness of color beyond which none can pass without tending to glare and gaudiness. The poppy (Eschscholtzia Californica) is distinctly Californian, and in California nowhere more at home than in our valley. Nevada and Arizona have a small scattering along the border and north and south along the coast it decreases rapidly, though John Burroughs in his account of his trip with the Harriman Alaska expedition speaks of first seeing the poppy away up on one of the Pribyloff islands. I think, though, that he must refer to some other flower, since the Russians were familiar with those islands and Alaska many years before Eschscholtzia Californica became known to science. We have heard much in history of the attempts to discover a northwest passage. It was in a counter attempt of the Russians to find a northeast passage that the poppy was discovered, for the expedition, failing to find an opening to the north, skirted the Pacific coast as far down as San Francisco bay. This was in 1816, and with the expedition was Chamisso, the botanist, who named and first described the plant, and John Eschscholtz, his naturalist friend, for whom he named it.

It is not every year that poppies may be gathered in the fields on New Year's day, as they could this year. The plants that the late fall rains started up found enough moisture to persevere, and the warm weather that marked the week ending the year brought them into blossom—not the large and long-stemmed specimens that will come later, but still good-sized poppies. Under ordinary conditions the latter half of February or early March is the season for the flowers to display themselves in those masses that startle the eye. There is a peculiarity about the poppy. Though an annual, reproducing each year from the seed, it does not appear year after year in the same place and in the same quantity. A poppy bed will suddenly appear where there was none in previous years, and the next spring disappear completely. Dry, sandy land that has been plowed one or two years before is the most favorable locality for the poppy, and in such ground it will so spread as to present to the eye at a short distance an absolutely uninterrupted sheet of gold. The fact that the poppy is a traveler does not wholly account for the above-mentioned peculiarity. When the fluted capsule breaks from the receptacle the coiling springs traject the black seeds some distance, insuring their getting the benefit of soil not drawn upon by the parent plant. It might, therefore, be expected that each season's poppy field would be a short distance to the leeward of the previous years, but this seldom follows.

Our poppy is only related to that poppy that yields the somnolent juice that brings Nirvana to the Orientals. Ours soothes but one sense, that of sight, but it leaves an elevation of spirit, not the deadly depression De Quincey described. The light sage-green foliage, with its finely dissected segments, is in itself a noticeable plant long before the conical bud begins to hint of the gorgeous unfolding. There is a bloom on the leaves as inimitable as the sheen of the petals. Gradually the pointed cap of the calyx lengthens and the swelling petals burst it away from the disc, splitting it on one side. Then it slips upward, slowly revealing the twisted gold beneath, until at last it is tossed off with an impetuous movement, and there is the flower, which, under the midday sun, opens the chalice of gold.

Behold the Holy Grail is found,
Found in each poppy's cup of gold,
And God walks with us as of old.

The four golden petals spread in a double curve. Sometimes five, and even six, petals occur as freaks. It is the satin gleam and the wonderful shadings that give beauty to the flower. Within the cup are the numerous stamens. For a few days the poppy folds its petals at night and opens them to the sun in the morning. Then the deep orange red begins to turn to yellow along the petal margins and the petals begin to drop and another cone starts from the center—a slenderer and fluted one, which lengthens to an inch or two, turns whitish and dry, then loosens from the bottom like the first one, but, instead of uncovering another flower, the curling segments throw to the winds a lot of little black seeds, the promise of poppies to come.

On hills and plains,
Lifting, exultant, every kingly cup
Brimmed with golden vintage of the sun.

Happy was the sentiment which in 1890 selected the poppy as our State flower, honoring it as one of that triumvirate—gold, the orange and the poppy—that has made California the Golden State.

The poppy has proven easy of cultivation and for years has been a choice annual of European gardens. It breaks out into variations where continuously reproduced from its own seed, and has been practiced upon considerably by horticulturists, most of the flower catalogues listing seeds of several varieties. Luther Burbank states that it can be made to produce a flower as large as a saucer if desired, and he has produced some varieties in color, but it would seem a mockery to attempt to improve on the poppy as it grows in its native state, making our plains a "field of the cloth of gold."

SHEEP AND WOOL.

A Sheep-Shearing Champion.

The American Sheep Breeder gives a biography of Con. Pickett, the brilliant young sheep shearer, who holds the world's record as an expert in the art of shearing sheep. Mr. Pickett is a product of Illinois, having been born at Montgomery, Ill., in 1880. He took his first lessons in shearing as a young boy at Montgomery, where he demonstrated remarkable skill both in the handling of sheep and the manipulation of the shears, and at the age of 17 was accounted the foremost of expert shearers in his neighborhood. Ambitious of a broader field for the exercise of his unusual gifts, young Pickett made his way to the big flocks and shearing stations of Montana, Wyoming, Idaho, Oregon, California, Colorado and New Mexico, where in competition with veteran experts, he won honors galore for rapid, humane and perfect workmanship. On many occasions he has shorn thirty range sheep in an hour, once exceeding this pace by shearing thirty-three sheep at the Powers ranch, near Great Falls, Mont., in 60 minutes. At Upton, Wyo., he sheared seventy-five sheep in 2 hours and 50 minutes, doing the work so neatly as to attract the attention and merit the commendation of employers and onlookers. His achievement at the Powers ranch—the shearing of thirty-three sheep in an hour—was accomplished in his first year's experience as a sheep shearer.

Mr. Pickett got his first lessons in the art of sheep shearing on the power machine, and never had any use for the old-fashioned hand shears, which he looks upon as relics of the barbaric period in clipping sheep His kindly, gentle and perfectly natural method of handling sheep in the shearing process is as admirable as the mechanical neatness and perfection of his workmanship and appeals alike to the confidence of his subject and the sympathy and admiration of the observer.

In the "speed contest" at the late memorable World's Fair shearing contest, he sheared three sheep in 6 minutes and 40 seconds, winning first prize, a $125 silver cup.

In the "free for all" contest, speed and quality combined, Mr. Pickett won first again, a $125 silver cup, shearing his sheep in 2 minutes.

Again he sheared for the world championship and won, finishing his sheep in 1 minute and 30 seconds.

In the quality contest he won second prize, a $65 silver cup, shearing his sheep in 4 minutes and 16 seconds.

In the goat shearing contest he scored another record by shearing an Angora in 2 minutes.

No incident of this brilliant and exciting event elicited greater interest and applause from the thousands of admiring men and women present than Con Pickett's almost girlish modesty and the grace, swiftness and precision of his inimitable manipulation of the shearing machine.

It was a red-letter day for our gifted champion. whose fair face, lithe and graceful form and superbly rhythmic work, had won him world-wide honors at the world's greatest sheep shearing contest, and appropriately we may add a post of honor in the fluttering heart and brain of many an onlooking maid and matron.

A few weeks later Con Pickett was the center of attraction in the sheep shearing arena at the great International Show in Chicago, where he focused for a week the interest and admiration of thousands of delighted men and women, few of whom had ever before witnessed the shearing of a sheep by machinery.

Ten days later he gave an object lesson in machine sheep shearing before 500 traveling salesmen of the great hardware house of Hibbard, Spencer & Bartlett, winning round after round of rapturous applause for his excellent clipping of Shropshire sheep.

HORTICULTURE.

How the Japanese Grow Strawberries at Florin.

Mr. L. M. Landsborough of Florin, in a discussion of other matters in the Sacramento Union, incidentally introduces the following interesting notes on strawberry growing:

It is a fact that in the vicinity of Florin, and Strawberry City, too, the people did not make a success of strawberry culture until the advent of the Japanese.

In the first place, the strawberry being a shallow-rooted plant and easily susceptible of irrigation, the usual method, previous to the coming of the Japs, was to irrigate from a shallow ditch in order that the moisture might the more readily reach the plants. The conservation of moisture with relation to the strawberry had not been followed. After the picking of the first crop and the advent of hot weather, the plants were soon robbed of their moisture and the growth was checked. Result: No more berries for the rest of the season.

In addition to this, it being considered detrimental to the fruiting of the plants to allow them to mature runners, these were cut off from time to time and an acre of land, aggregating about 10,000 plants, from the causes set forth, had dwindled down the second season to perhaps half this number. By the following season the returns per acre were considered too small to warrant further cultivation, and the strawberry business was voted a failure.

The Japanese method of strawberry culture was to root the runners in the bed as soon as they were strong enough and keep this up until the 10,000 plants had increased to five times as many plants in the rows as they originally contained—and a corresponding increase in fruit yield.

Instead of a shallow ditch that would dry out the first hot day, they dug a ditch narrow, but at least 2 feet deep, on the theory that the moisture, once in the soil, could be retained there throughout the season and so, instead of a single crop of berries, the crop is made a continuous one from April 1st to December 1st. The berry business has never been a failure here. Our product has grown from a few hundred cases a day to several carloads, and the demand has increased in like proportion.

It is true that for about two weeks of the shipping season we have had more berries than we could profitably handle, and these have been sold at a loss, but as this is the fault of the system it will eventually meet with a remedy. Now the grower is the loser, and Japanese or white labor cannot control it.

In planting strawberries, the Jap soon demonstrated that the rows running east and west, being more exposed to the morning sun, produced earlier berries, and that the row on the north side of the ditch, for the same reason, ripened the first berries and so must receive the first attention in the early spring weeding. The deep ditch also produced better drainage, which was also conducive to early ripening and less weeds.

On the whole, the strawberry crop of to-day is ready for market at least fifteen days earlier than under the old method of cultivation.

Florin has progressed, and, as the Japanese have been the instrument in bringing Florin to the front, I am willing to give credit only where they merit it.

Under these conditions I have seen property values increase and much property change hands, and I have no hesitancy in saying that Florin has progressed and is still forging ahead.

The distant reader should be told that Florin has a shallow soil resting upon an impervious hardpan, which holds the water up to a point from which it can draw upwards to the roots of the plant. For this reason the deep ditch system is successful, while it would not do at all upon a deep, open soil.—ED.

Fruit Trees Along the Highway.

From United States Consul JOSEPH I. BRITTAIN, Kehl, Germany.

One of the ways for beautifying the country in the grand duchy of Baden without any ultimate expense to the taxpayer is the planting of fruit trees along the Government highways. These are cherry, apple, pear, and in some places walnut trees. The trees are planted 32 feet apart along each side of the road, and when the fruit is ready for market it is sold at public auction on the trees, the purchaser being obliged to harvest it at his own expense. The amount realized from the sale of the fruit is applied to the maintenance of the system—the propagation of young trees, their planting and cultivation, etc.

The department of the Government managing the enterprise is known as the department of "Wasser und Strassenbau." There are two large nurseries, one near Emmendingen and one near Durlach, where the trees are grown. The total realized from the fruit in 1902 was 38,046 marks, or $9055; in 1903, 24,081 marks, or $5731. These were not such good fruit years as the present one, but the amount realized this year has not been reported. The cost of maintaining the system in 1902 was $4590 and in 1903 $4980. The price realized for apples was 1⅛ cent per pound, for pears 2⅛ cents, and for cherries 2⅞ cents.

FORESTRY.

Forestry in California.

California has over 28,000,000 acres, or over one-fifth of its total area, under forest cover. Much of this land is finely timbered, and, with forest management, will be increasingly valuable for the wood which it can supply. But in California the forests have another use, which, as is well understood in that State, is even more important than the production of timber—to conserve the water supply. The wonderful agricultural development which irrigation has made possible is perhaps the largest fact in California's recent economical history. Because of the need of water and the fear of floods, public sentiment in favor of forest protection in California has always been well in advance of that in other States, as was conspicuously illustrated after President Cleveland, in 1897, proclaimed the thirteen Federal Reserves created at the close of his administration. Everywhere else in the West the opposition aroused was so strong that the proclamation was soon afterward temporarily suspended; but a special exception was made in the case of California, where public opinion was from the first strongly in favor of the reserves.

Something less than one-third of the entire wooded area of the State is now embraced in the Federal forest reserves. That the remaining 20,000,000 acres of its forests may be made to serve the public interest in the fullest possible measure, the State has solicited and secured the co-operation of the Bureau of Foresty of the U. S. Department of Agriculture in working out a proper forest policy for it. Members of the Bureau have, since July, 1903, examined over 21,000,000 acres of forest and brush lands, and by the end of the year the entire State will have been covered. The different types of land—as timber land, chaparral, pasture and agricultural land, barrens, cut-over land, and burned land—will be mapped and the stand of timber in each location will be roughly estimated. Forest reserves may be increased in number or size, if land most suitable for that purpose is found.

But the subject of paramount importance is the prevention and control of fires. A good opportunity for experiment along this line was afforded the Bureau by co-operation with the private owner of an 80,000-acre tract, who had previously introduced a crude fire-protection system. A comprehensive plan was outlined and its execution begun. There has not been time for a thorough trial, but its installation has had an excellent effect. The patrolling of the tract has been greatly improved, and the neighbors now voluntarily report all fires, whether on or off the tract. There has not been a serious fire on that tract this season. This splendid showing is an impressive object lesson. It proves the efficiency of intelligent care and of fighting fires at the start. The present fire laws of the State are incomplete and inadequate. One result of the work of the Bureau will be the recommendation of a fire law which, if adopted, will be the best ever passed by any State.

The most encouraging fact in forest management is the growing determination of large timber land owners to employ private foresters to handle their holdings. This will ensure a method of lumbering less wasteful than that at present practiced, and, more important by far, it will be the means of better protecting the forests and making them yield a continuous crop. Such expert control will be especially valuable in solving the problem of the best way to get rid of the slash, which, until burned, is a constant menace to the forests. Extensive experiments in slash burning have already been carried on by the Bureau with satisfac tory results.

The Bureau agents are also studying the habits and rate of growth of sugar and yellow pine to determine the practicability of lumbering so as to secure a second crop. The field work on these studies is now about complete. A report on what growth and returns may be expected from plantations of different species of gum is nearly ready for transmittal.

The study of chaparral has led to fruitful practical conclusions. It shows in California the same remarkable ability to encroach upon and spread over open country that it exhibits in Texas and elsewhere in the semi-arid portions of the Southwest. It makes a satisfactory watershed cover, and almost constantly replaces a forest destroyed by fire. Its composition varies with aspect and elevation and with damage by fire. Its composition varies with aspect and elevation and with damage by fire.

The natural reproduction of forest trees has been thoroughly investigated by the Bureau, together with the extent of the forest in the past, the effect ef fire upon forest reproduction, the contest between chaparral and forest on burned areas, and the rate of growth of young forest trees. Every State which has large valuable forests or a climate which demands extensive irrigation for farming purposes should, in its own interest, adopt a definite and enlightened forest policy. Work similar to that nearing completion in California should be in progress in at least a dozen other States of the Union right now, if vast timber resources are not to be further ruinously depleted and farming interests are to be properly safeguarded.



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THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

THE IRRIGATOR.

Water Rights in California.

NUMBER V.

Written for the Pacific Rural Press by Samuel C. Wiel.

Protection of the Right.—We have been considering, up to the present, what the appropriator has a right to do. Now it is proper to consider what he has a right to complain of; that is, what constitutes an infringement of his right by others. This is, of course, a wide field, of which we can here only look lightly into the most important principles. They are, that others cannot injuriously change the quantity or velocity of the water, nor its quality.

1. Others cannot change the quantity or velocity injuriously. Before the code, while others could take any surplus, they were bound to leave enough to fill the prior appropriator's ditch (8 Cal. 327). Under the code they must leave the number of inches called for in the notice, or what is actually used, if less than that (ante). Whether the later comer is himself an appropriator or a riparian proprietor, makes no difference, for as has been seen, later grants of land are all subject to the prior appropriation; even a later railway grant from the Federal Government (101 U. S. 274). The way in which the diminution is caused is not important; for example, if sawdust from a sawmill clogs up one's ditch so as to diminish the flow, it is actionable (23 Cal. 481). Or if the velocity is diminished by a dam preventing the working of a placer claim, provided plaintiff is prior in time (46 Cal. 218).

It may be that our appropriator was himself later in time than others, and so, himself, had a right only to the surplus. In that case his surplus will be protected as fully as though it were the entire flow, and prior appropriators who exceed the limitations already shown under "exercise of the right" will be acting unlawfully, as there shown; likewise prior riparian owners who are taking more than is reasonably necessary for cultivating or pasturing their land or for the other uses that are allowed under the law of riparian rights (102 Cal. 151, 69 Cal. 255). Those riparian rights, it may be merely mentioned here, include irrigation, running machinery, watering cattle, for all of which a reasonable amount. They include also domestic and household use, for which there is no limit in amount the riparian owner can take, and for this purpose the riparian owner can take all, leaving none, whatever, to come down to the later appropriator (69 Cal. 255).

At this point the question of percolating water arises again. What if appropriated water is drawn off by percolation? This is of great importance to miners, because their works are likely to drain wells and springs and even streams in the neighborhood. As an eminent authority says:

"In sinking a shaft through permeable ground it is, of course, necessary to lift continuously the ground water. The water level thus acquires an inclination towards the shaft, which may thus receive not only the flow of the immediate vicinity, but even also that of neighboring river systems." Posepny on Ore Deposits (A. I. M. E.), page 19.

Up to the present this was regarded as what the law called "dammum absque injuria," a damage the law did not think proper to look into; and such is the law in most States, and in England to-day. But the recent California decisions, already touched upon, on their face appear to establish the new rule that the owner of wells, springs or streams may maintain an action for this. A tunnel draining a spring was held unlawful in 142 Cal. 437. A tunnel draining the supply from a surface stream, even before it ever reached the stream, is unlawful (141 Cal. 275). And one draining off water after it has reached the stream is all the more so (Montecito vs. Santa Barbara: 8 Cal. Dec. 405). And likewise water cannot be taken from wells (141 Cal. 116). These cases will cover probably all that will usually arise, unless, perhaps, the following: That is the withdrawal of water by a mine may dry up the neighboring soil itself. In the Nineteenth Annual Report of the United States Geological Survey, Part II, page 274, in an elaborate investigation of the movements of ground water, it is said: "In another part of this paper it was shown, from direct observations, that the withdrawal of a comparatively small amount of water from a soil already saturated is sufficient to produce a marked change in the level of the ground water, and hence to cause marked changes in the level of waters in wells, and in the height of the ground water in sections where crops depend on water which is derived from the underflow by natural subirrigation." If an action can be maintained against a miner for draining a well by percolation, it is only a small step to holding him liable for draining the soil of the water needed for crops in "natural subirrigation." It is one of the many phases of the new doctrine that must be dealt with, and shows that, if logically pushed, the principle of Katz vs. Walkinshaw, 141 Cal. 116, may make the miner an insurer to agriculturists against damage to crops, etc., from dessication; with this proviso, it will be admitted that the miner will not be responsible for the results in extraordinarily dry seasons, or, as it is called, from a "vis major," or "Act of God."

(TO BE CONTINUED.)

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So named because 50 acres in 1902 produced so enormously that the product built a beautiful house. See Salzer's Catalog. It is the earliest, big-eared and heaviest Yellow Dent Corn on earth, yielding in Indiana, 157 bushels; in Ohio, 160 bushels; in Tenn., 198 bushels, and in Mich., 270 bushels.

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JOHN A. SALZER SEED CO.
LA CROSSE, WIS.

Agricultural Review.

Alameda.

A MONSTER PIGEON.—Oakland Enquirer: A. B. Woods of this city owns a remarkable pigeon in his California Giant, Jr. He has developed by careful breeding a bird that stands 15½ inches high, measures 23 inches from head to tail, and has a wing expansion of 32½ inches. The bird was the attraction at the pigeon show just closed in this city, and Woods expects that the process of evolution will develop in the descendants of the Giant, a pigeon much bigger.

Los Angeles.

CATTLEMEN WILL FIGHT.—A Los Angeles dispatch says: Fighting between the cattlemen and sheepmen is the hourly dread of Antelope Valley. Many sheepmen are bringing their flocks from Inyo and other counties north for pasture. The cattlemen are armed and keeping a grim lookout and a bloody clash is expected. Thousands of sheep are known to be on the way to the grassy slopes between Lancaster and Palmdale, which the southern stockmen claim. They say they will shoot down all the wool and mutton men who try to intrude. The latter declare they will have the grass. Yesterday morning word came that a large band of sheep was in the valley near Palmdale. A large company of cattlemen, armed with rifles, rode out at dawn to drive them out by force. Luckily the Basques had been warned and turned back and violence was averted. The cattlemen object to the sheepmen sharing the pasture with them for several reasons. One is the ancient superstition that cattle will not graze on land that sheep have been over. The sheepmen think that in this vast landscape there should be room enough for all.

Monterey.

MONEY IN SUGAR BEETS.—Salinas Index: S. Sotome, who farms the Garside place near town, states that he raised from irrigated land eighteen tons of beets to the acre. His expenses, all told, were $2500; he grew 1230½ tons of beets and sold them at the factory for $4.50 a ton, receiving $5546.25. He paid cash to Mr. Garside $1543.50 for the rent of the land, leaving him, after paying all expenses, $2500 to the good. Mr. Sotome says that his expenses in the future will not be as great, as the irrigating has already been done.

GORED BY AN ANGRY BULL.—Salinas Index: Augostini Pinsini was charged and killed by a vicious bull near Soledad Saturday evening. Pinsini was 65 years old and small of stature. He had been making his home with his nephew, Emile Pinsini, and wife, who run a dairy on the Doud tract of land near Soledad. Saturday the young Pinsini went to town, and Mrs. Pinsini attended to the milking in the evening. The gate of the corral was left open and while she was engaged in milking, two or three head of cattle, including the bull, strolled out and started down the lane. The old man started out in pursuit, heading them off and driving them back to the corral. He then endeavored to drive the bull out of the enclosure. Mrs. Pinsini paid little attention to what was going on, until she heard a scream and saw the old man tossed into the air. When he struck the ground the bull pawed the prostrate form with its front feet. Calling for help, a workman who was near by entered the corral and succeeded in driving the bull away. He then picked up the old man and started out of the corral when the bull made another charge striking the hired man in the back and knocking him down. It then backed off a short distance and watched, and every time he would start to arise it would lower its head in a threatening manner. Some boys near by arrived on the scene. One of them wisely admonished the hired man to lay down and "play dead" until he got a pitchfork. With this weapon the bull was put to flight, and the injured man was carried out of the corral. Mrs. Pinsini and the boys then carried the lifeless body of the old man to the house.

Orange.

FINE WELL.—Anaheim Gazette: Mr. Butterfield, who has installed a pumping plant on his ranch a mile west of A. Henry's place this week succeeded in raising 200 inches of water, which makes the well probably the largest producer in this section. The well is sunk to a depth of 520 feet and has 100 feet of water-bearing gravel. Already investors are already figuring on making Mr. Butterfield an offer for his ranch. The supply of water is sufficient to irrigate 1000 acres.

IMPORTED STALLION SOLD FOR $6000.—Redlands Facts: A syndicate of Orange county farmers has purchased Omer, the imported Belgian stallion, for $6000. Omer is the winner of the grand championship at the International Stock Exhibition in 1903, as well as two first prizes at the St. Louis fair. The horse is a 4-year-old, bred in Tavlers, Belgium, roan in color and weighs 2450 pounds. The animal is at Winship stock farm, near the Palms, where he was taken upon his arrival from the East.

Placer

WATER COVERS 1500 ACRES.—Auburn special to Sacramento Bee, Jan. 26: The private levee on the M. Girdner place, enclosing from 1200 to 1500 acres, gave way about 5 o'clock this morning and all the barley is now under water.

Riverside.

FINE COTTON.—Enterprise: Hugh A. Bain has been experimenting at the "Anchorage" with the raising of a very superior variety of long-fiber cotton, samples of which have been on exhibition at the Riverside Chamber of Commerce rooms and have been greatly admired. On November 25th Mr. Bain sent samples to the spot cotton department of Hubbard Bros. & Co., Hanover Square, New York, and the manager of that department, G. E. Morse, writes Mr. Bain as follows: "The writer has shown the samples of your cotton to four or five dealers here and they unanimously said that if the cotton were properly ginned such cotton ought to bring 3 cents a pound above the price of Middling cotton here. This would make it to-day worth about 10.60, if properly ginned and handled. While giving you this value, it might possibly be difficult for us to sell it at the price named, as there is little demand here for such cotton." This is a very high compliment to the Riverside cotton, placing it much above the Southern cotton in quality and price.

Sacramento.

ASPARAGUS LANDS IN DEMAND.—Union: The Golden State Asparagus Company, a corporation, has leased to A. Guelfi and A. Biannalana 174 acres on Andrus island for two years, to cultivate the lands and market the produce to the account of the lessor, it to have 33⅓% of the result and the lessees 66⅔%. The latter are to pay as rental per year $1913.45, or $11 per acre. It is provided that there shall be strict rotation of crops, no two crops of the same kind to be put in the same field in the same season. The lessees are not to interfere with the levees or flood gates or any reclamation work, but are to keep open the drainage and irrigation ditches. In the same manner upon much the same terms, and, as in the first instance with infinite detail as to use of the lands, payment of rental, disposal of manure, stubble, etc., the same lessors leased to L. Banducci for two years ninety-six and eighty-six hundredths acres at $12 an acre rental, on the same island, and to R. Torigiani & Co. 125.96 acres at $12 an acre for three years.

San Benito.

CONDENSED MILK FACTORY.—Watsonville Pajaronian: Hollister has a condensed milk factory which is becoming an important factor in the development of San Benito county's resources. The plant, which is owned by the Alpine Evaporated Cream Co., John B. Meyenberg, president, is equipped with the most modern machinery and employs from twelve to twenty people the year round. One thousand pounds of milk are now being used daily and in the summer season about double that quantity issued.

San Joaquin.

HARVESTER FOR KING OF SPAIN.—Stockton Record: After three years of correspondence with Senor Flores of Spain the Holt Co. sold him a big traction outfit. Pliny Holt went over with the machine. The King viewed the immense American affair by special invitation and was so pleased with it that he hinted that he would like to have a small one at his court. Many nobles have vied with each other to present the gift, but Senor Flores will do the honors. For many weeks three or four of the most finished mechanics of the great Holt works of this city have been working on the affair. It is a complete working model of the latest and greatest type of the Holt combined traction header and thresher. The labor involved in the making amounted to nearly as much as it would to construct one of the life-size machines. About the only difference is the cost of the material used. New patterns had to be made for all cast work, and in some instances the ordinary cast iron work was turned out of the solid metal. The little traction engine weighs but little over sixty pounds. Its frame work and other iron parts are painted and its brass work burnished, just like its big brother's. Its fuel is gasoline. It takes its consecutive number of 80, just as if it were to go out into the field for a season's hard work.

Shasta.

FARMERS LOSE DAMAGE SUIT.—Perry Mark and seven other Shasta county farmers and fruit growers sought $34,500 from the Mountain Copper Co. for damages alleged to have been done their trees and crops by fumes from the smelting plant of the company at Keswick. The jury decided that the fruit growers were entitled to no damages and that the company was entitled to costs of the suit, which will total somewhere about $250. That sum does not include attorney fees, which are not included in the verdict.

Siskiyou.

CATTLE VERY SCARCE.—Yreka special to Sacramento Bee: Good beef cattle are becoming very scarce in this county and there is liable to be a large shortage in the market of this section in the near future. The local meat markets here have to keep men out all the time buying up stock to supply their trade, and they claim that they are having a hard time in securing all they need. If the scarcity keeps up a few months longer, they will not be able to secure enough to supply the demand, they say. The scarcity is probably due to the fact that a great many outside buyers have secured stock in this county and shipped the same to the city markets.

Sonoma.

RAVAGES OF A COYOTE.—Petaluma Courier: A coyote near the Byron Purvine ranch at Two Rocks is credited with the destruction of thirty-seven chicks on one ranch and seventeen on another. It ate only about two and bit the others to death. One neighbor, seeing something white half buried, kicked it up and immediately one of his fowls ran to its house. He next encountered a chick buried up to the head, and the small bird was also able to run away on being liberated.

SHEDS COAT OF BLACK FOR WHITE.—Santa Rosa Press-Democrat: J. B. Reid, the well-known pioneer, who resides on the Healdsburg road about a mile north of Santa Rosa, has a most remarkable Black Minorca hen, or rather did have, for she is no longer black. Whether the hen had been reading the poultry journals and discovered that Black Minorcas were being replaced by the White Minorca, or not, Mr. Reid does not pretend to say, but regardless of that, he does say that when the hen moulted in the fall her feathers came in white and to-day the hen is a fine specimen of White Minorca. As far as known, this is an exceptional case, and has attracted much attention from poultry fanciers.

TURKEYS AND CHICKENS.—Index-Tribune: Mrs. J. K. Beglew has received from the East a mammoth bronze turkey Tom and two hens. They were sired by World's Champion, who took six of the seven prizes in the Missouri exhibit at the World's Fair at St. Louis. The birds are only seven months old, and the Tom weighs 30 pounds, one hen 16½ pounds and the other 14½ pounds. They will be entered at the annual exhibit of the Oakland Poultry Association. One of the heaviest consignments of chickens ever brought to this valley will be delivered on the 25th instant. They are all White Leghorns, and will number 5000. It will take a brooder 140x15 feet to hold them, and 200 pounds of coal every twenty-four hours to keep them warm.

Stanislaus.

PECULIAR GROWTH.—Modesto News: There is a cluster of oranges at the Board of Trade rooms which is proof of the great productiveness of Stanislaus county soil. On a branch only 6 inches long there are nine oranges, all full sized and well formed and resembling an unusually large bunch of grapes in appearance. This heavily laden branch is from the ranch of Hon. V. E. Bangs.

Tulare.

WHEAT SPROUTS IN FOUR DAYS.—Porterville Messenger, Jan. 26: John Fine, one of the most successful ranchers and wheat growers of the Poplar country, says there has not been enough rain during the past four or five years to make it possible to thoroughly cultivate the ground each year as it should be. The land can be dry plowed one season and the next season can be dry plowed again, and the second plowing will turn up dry dirt that has been turned under the year previous, the moisture during the year not being sufficient to wet the turned under soil. Nearly all the grain is up and some that was dry sown is several inches above the surface. Mr. Fine has grain that was out of the ground four days after it was planted, but the seed had been soaked in a solution of bluestone and the seed was already to sprout. The bluestone application was made to prevent smut, but Mr. Fine doubts whether the application of bluestone to the seed is much of a benefit or not, although he, as well as many others, usually make the application.

SOLD FOR TAXES.—At a tax sale held at the courthouse Saturday by County Tax Collector J. W. Fewell, 1600 acres of land in this county were sold to E. T. Cox, the highest bidder, for $1050. This is said to be the largest piece of property ever disposed of in this county at a tax sale, and also the largest price ever paid for such. The property is located near White River and the larger part is farming land. The selling price is about $900 in excess of the amount of taxes due. The place was formerly in possession of a Hanford man and is said to be worth between $5000 and $6000, and it is not unlikely that an action will be brought to recover possession.

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Allay Bronchial Irritation and effectively relieve Coughs and Throat Troubles.

Avoid Imitations. John L. Brown & Son

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Think of it! A hundred and one acres—bigger than the average farm. That's the Studebaker—the largest vehicle factory in the world. It means something to you, for the Studebaker wouldn't have grown from a humble little country blacksmith shop to the largest plant of the kind in the world, increasing in size and growing in popularity and reputation, if it hadn't deserved to grow. The truth is people buy more Studebakers because they have found that the Studebaker gives better satisfaction.

If you could go through the factory and see just how the Studebaker is made; see 65 acres piled high with air-dried lumber the pick of the world's markets—see the laboratories where experts test all materials used—see the scores of inspectors whose duty it is to see that every part is perfect before it is used—see the acres and acres of the most improved modern machinery—see the care and thoroughness taken from start to finish—you'd understand why the Studebaker is the most popular vehicle in the world.

If you're thinking of buying a farm wagon, a spring wagon, a surrey, a buggy, a family carriage, a set of harness or a vehicle of any kind for business or pleasure, look up the Studebaker agent. He'll be glad to show you—and it costs nothing to look.

Ask him for the new Studebaker almanac. If he can't supply you, send your name and address to us with a two cent stamp and a free copy will be sent you. Ask for booklet No. 5.

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Selling Agents Most Everywhere. A dealer may make more by selling you some other, but you make most by buying a Studebaker.

The Home Circle.

The Grip.

What is it fills the heart with woe,
And makes the spirits sink so low,
And causes tears to freely flow?
The grip.

What is it fills the soul with dread,
And makes the nose and eyes grow red—
And makes a man wish he were dead?
The grip.

What is it gives a man the chills,
And calls for powders and for pills,
And runs up mighty doctors' bills?
The grip.

What is it curls a person's hair,
And fills his think tank with despair,
And makes a saint desire to swear?
The grip.

What makes the people sadly moan,
And mope and mumble, grunt and groan
The worst the world has ever known?
The grip.

—Chicago Chronicle.

The Countersign.

The guarded Camps of Nod are spread
With snowy tents in stretching line.
"Halt! Who goes there?" the challenge rings,
"Advance, and give the countersign!"
And would he pass the sentry's cry,
The friend must answer, "Lullaby."

When sinks the sun beneath the West,
The Camps of Nod to fill begin;
All through the night, by twos and threes,
Small, rosy soldiers straggle in,
And each one gives, with blinking eye,
The countersign of "Lullaby!"

Ah, when inexorable years
Are heaped on us like drifted snow,
Within the poppied Camps of Nod
We weary grown-ups fain would go;
But can't remember—vain to try—
The countersign is "Lullaby."

—McL. Wilson, in New York Sun.

Her Refusal.

What the answer would have been if Charlie Sidcot had proposed in person is doubtful. It is tolerably certain that he would not have been so eloquent as he was in his letter. He would never have had the face to say what he did about Miss Dury's countenance and graces of person and mind generally.

The letter was tender yet dignified, hopeful but not self-assured, poetical almost, but free of anything like maudlin sentimentality. His course was justified to an extent by the letter that Miss Dury wrote in reply. She did not adopt a light and frivolous tone at least. Here is what she wrote:

"My Dear Mr. Sidcot—Your letter was a surprise to me, for I had no idea that the feeling you entertained for me was of the nature which it expresses. Will you forgive me if I say that I am sorry? I am not insensible to the honor you have done me, I prize your friendship highly, and trust that I may retain it in spite of the fact that I cannot become your wife. You will thank me for this some day—when you have found some girl more worthy of you, for I am by no means the perfect creature you seem to imagine me. Be assured, my dear Mr. Sidcot, that I have not made this decision without reflection, and that having made it nothing can alter it. Your true and sincere friend,

"Ernestine Dury."

Having concluded this epistle, Miss Dury read it over two or three times, pensively chewing the end of the fateful pen. Then she said: "I'll go and mail it and get it off my mind."

She put on her hat and jacket, walked briskly to the mail box at the corner of the street, dropped the letter therein and closed the slot with a resounding slam.

"There!" she said.

* * * * * * *

Why she said it in that vindictive way is just as much of a mystery as her bursting into tears when she regained her room. Her sister heard her sobbing five minutes later and threatened to kick in a panel of the door and rouse the household if she were not admitted.

"Well," asked the sister when Ernestine unlocked the door, "what's all this about?"

"Charlie wrote me a proposal and I've just written refusing him—and mailed the letter," the girl gurgled between sobs.

"What are you boo-hooing about, then, if you didn't want him?" inquired the sister. "I thought you liked him, though."

"I do-oo-oo."

"Then why did you refuse him?"

"I don't know. Oh, what shall I do?"

The sister looked at her with contempt.

"Stop the letter, silly."

Ernestine jumped from the bed, her eyes shining. "Can I?" she cried.

"Why, of course you can," replied the sister. "Here, you just bathe your eyes and I,ll sneak down to the telephone and call up the postoffice. Let me go. I don't want you weeping all over my stock."

She came back in a few minutes. "It's all right," she said, "only you'll have to go down to the postoffice yourself and sign an application. It's in Room 12."

Miss Dury made her record time dressing for a downtown trip. In Room 12 of the Postoffice building she found a nice, benevolent-looking old gentleman, who asked her why she wanted to stop the letter, and then, pitying her confusion, gave her a blank to sign and told her to make her mind easy—that the letter would be stopped. She could call him up by telephone during the evening if she pleased and he could tell her if it had been found.

Miss Dury departed, greatly comforted, and on the way home began to outline another letter of a different tenor. After dinner she called up the postoffice on the telephone and was informed that the letter was stopped.

The next morning she awaited the arrival of the postman with more than ordinary eagerness and her heart sank when she found that her letter was not returned to her. Still, it might come at noon. It did not, nor did it come on the four-o'clock delivery. She was naturally worried, but after all the great thing was that the letter was stopped. That was what she said to her sister.

"Why, they won't return it to you, you big goose," said the sister. "You have to call for it. He told me that."

So early in the morning Miss Dury made another trip to the postoffice. Her benevolent friend was not there. A young and businesslike official listened to what she had to say, then went away and returned with the information that the letter had been forwarded on to its address.

"I thought it was stopped," she cried.

"It's been stopped," said the young man, crisply; "stopped, held twenty-four hours, uncalled for, and forwarded. That's the rule. You should have called for it."

This time Miss Dury went home with dull despair in her heart. She remained in her room all day on the plea of a headache. A hundred times she said to herself, "Oh, why did I tell him that my decision was unalterable!"

* * * * * *

At about eight o'clock the maid rapped at her door. "Mr. Sidcot is downstairs, miss," she said.

Miss Dury got down somehow. Somehow it happened that without anything being said by either person, she found herself unresistingly in Mr. Sidcot's embrace.

A long time after that she said: "But, Charlie, I don't understand yet. You got that awful letter I wrote."

"Yes," answered Sidcot. "I got it and for four hours I was the most miserable man on earth. If I hadn't accidentally picked up the envelope and examined it, I should still be."

He took an envelope from his breast pocket. The back of it was decorated with large blue stamps. One read: "Stopped at the Request of Sender." The other: "Uncalled for. Forwarded Nov.—,1904."—Chicago News.

Children's Ailments.

Whooping cough develops slowly, and for several days it is no different from an ordinary cough due to a cold in the lungs. Then suddenly the cough becomes more violent and lasts longer, with that characteristic catching of the breath and redness of the face.

Diphtheria is characterized by a sore throat and a swelling of the glands of the neck, with white specks on the tonsils. It should always be treated by the best medical skill obtainable.

Scarlet fever is most contagious during the height of the disease and during the period of desquamation—that is, when the cuticle separates in small scales. The first symptoms are vomiting, a sore throat and a high fever. The eruption appears first on the neck and chest and then covers the entire body. This disease may be carried by well people in their clothing or it can be conveyed by the clothing of the patient.

Measles is a serious disease on account of frequently accompanying bronchitis or pneumonia. It is most severe in children under five years. The disease can be conveyed from the earliest stage—the catarrhal symptoms. It is less contagious after the eruption disappears.

Chicken pox appears gradually, first in the form of pimples all over the face, scalp and body. There is irritation of the skin, but little fever. This is, like measles and whooping cough, a very contagious disease.—New Idea Magazine.

How to Wash the Face.

"If more girls were taught just how to wash their faces there would not be nearly so much work for us to do," said a young woman who is studying facial massage. The masseuse explained her statement by adding that, in the first place, the face should never be washed in cold water. Always use warm water—or, better still, hot. In the second place, on no account use either a wash cloth or a sponge. Put your two hands together (as children make a cup to drink out of streams), fill with the hot water, and, holding your face near the basin, put on the hot water over and over again. Then, before you dry your face, rub it over gently with the tips of your fingers, says Harper's Bazar. Be sure always to rub up toward the forehead. Dry the face with a soft, old cloth. About twice a week wash your face at night with any good, pure soap. Rub the soap on your hands, not on a cloth or sponge, and with your fingers rub the soap well into the skin of your face. If your skin is inclined to be dry, you can (after rinsing plentifully with hot water) rub in a little plain cold cream. This same authority tells us that much better for the hair than brushing it is a nightly massage with the finger tips. This keeps the scalp well loosened and promotes a free circulation.

Improvised Shoe Polish.

One woman whose light tan shoes were so soiled as to be past wearing, and who was at the time far from any place where shoe dressings are sold, concocted a "home remedy" which worked well.

Wetting a soft muslin rag with water containing a few drops of household ammonia, she rubbed it with a little castile soap and applied it to the back of the shoe where failure would leave least plainly its marks, says the Chicago Daily News. But there was no failure; it worked admirably. The entire shoe was thoroughly clean in five minutes. She kept one hand inside the shoe to hold it in shape and was careful not to wet the rag so much as to soak through to the lining and also to rinse off well before drying.

Half an hour later they were rubbed well for a few minutes with a flannel rag, and a natural gloss obtained.

Hope.

After the darkest midnight
The dawn again will glow;
And after the bleakest winter
Will springtide flowers blow.

But we would not love the blossoms
If every month were May;
And we would not heed the sunlight
If it were forever day.

Though in gloom and sorrow walking,
Though our eyes be dim with tears,
If we look to the Over-heaven
Lo! a rainbow there appears.

And hope shines ever the brightest
For those who have known despair;
And the promise of rest seems sweetest
To those who the burden bear.

—S. A. Rutherford.

Love.

The rose is fairest when 'tis budding new,
And hope is brightest when it dawns from fears;
The rose is sweetest washed with morning dew,
And love is loveliest when embalmed in tears.

Disillusionized.

Some officers of a British ship were dining with a mandarin at Canton. One of the guests wished for a second helping of a savory stew, which he thought was some kind of duck, and,

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not knowing the word in Chinese, held his plate to the host, saying, with smiling approval:

"Quack, quack, quack!"

His countenance fell when his host, pointing to the dish, responded:

"Bow, wow, wow!"

Domestic Hints.

ORANGE TAPIOCA.—Wash thoroughly a cupful of tapioca, then cover with cold water and let soak over night. In the morning put over the fire with one pint of boiling water, and allow it to simmer slowly until the tapioca is perfectly clear. Cut into small pieces a dozen sour oranges, sugar to taste, and stir into the boiling tapioca. Turn into the serving dish and set away to cool. Serve with cream.

CHEESE SANDWICHES.—These are extremely nice and easily made. Put a yolk of a hard-boiled egg into a cup and crumble it. Then put into it a tablespoonful of pepper, half a teaspoonful of mustard, the same amount of salt and a quarter of a pound of American cheese, grated. Mix thoroughly and moisten with a tablespoonful of vinegar. Spread between slices of wheat or whole-wheat bread.

TOMATO SOUFFLE.—Melt an ounce of butter in a saucepan. Mix smoothly with it one ounce of flour, a pinch of salt and pepper and two gills of milk. Let simmer gently over the fire, stirring all the time, till it is as thick as melted butter. Stir into it a cupful of canned tomato. Turn the mixture into another dish, and add the yolks of two well-beaten eggs. Whip three whites to a froth, and just before the souffle is baked put them into it. Bake for twenty minutes in a pudding dish and serve the instant it is done.

POTATO SALAD WITH CELERY.—Six or eight cold-boiled potatoes, one-third the same bulk of celery, one egg, one teaspoonful of salt, one teaspoonful powdered sugar, one-half teaspoonful of white pepper, one scant teaspoonful dry mustard, two tablespoonfuls salad oil, four of vinegar; stir salt, sugar, pepper and mustard into the beaten yolk of the egg; add the oil a little at a time, then the vinegar, lastly the beaten white; cut the potatoes and celery into small bits, mix and pour the dressing over them. Garnish with parsley or celery tops.

CHEAP COOKIES.—Cream half a cup of butter or shortening with one cup of sugar. Stir in half a cup of sour milk in which a third of a teaspoonful of soda has been dissolved. Spice the mixture to suit the taste, and sift in enough flour to make the batter rather stiff. Roll the dough out on a floured board until it is of wafer-like thinness. Cut it out with a large biscuit cutter into cookies or wafers and bake until brown and crisp. These "eggless" sugar cookies can be flavored with lemon or nuts or chocolate instead of the spices. The school children will appreciate them in their luncheon baskets.

Hints to Housekeepers.

To soften kid boots which have been hardened by getting very wet, clean them at once and rub them with castor oil.

When it is necessary to clean windows in damp weather, use a little methylated spirit, and you will polish the windows in half the time, as the spirit evaporates, and then dries the superfluous moisture as it goes.

One of the best places to store blankets which are not being used is under a mattress which is continually slept upon, as here they are kept comparatively well aired, and need little extra exposure to the fire before being used.

Without care knives not in use soon spoil. Keep them in a box in which sifted quicklime has been placed. The blades should be covered with this, but it must not touch the handles, which should be occasionally exposed to the air to keep them from turning yellow.

A quick way of making delicious chocolate is as follows: Mix a heaping teaspoonful of cocoa with a little more than the quantity of condensed milk, allowing this proportion to each cup. When this had been well mixed, pour in boiling water and set on the stove to boil for five minutes. As the milk is sweetened the chocolate will not require sugar.

Lemons are very useful in health and sickness. Hot lemonade is one of the best remedies for an incipient cold. It is also excellent in cases of biliousness. For malaria, the "Roman cure" is prepared by cutting the rind and pulp of a lemon into a pint of water, then boiling until there is only a half pint. One teaspoonful should be taken before each meal. This has cured obstinate cases when quinine failed.

To bring out the brilliancy of cut glass, ammonia should be placed in the water in which it is to be rinsed. All glass should be dried immediately, and not drained. A cloth dipped in ammonia and rubbed thoroughly on a coat collar will remove the greasy look. When the floor cloth gets really dirty wash it with clean warm water, adding a little liquid ammonia. Change the water frequently, use a big soft cloth, wipe perfectly dry with a dry duster, as little pools of water left will rot the cloth.

Tea should never be boiled. By doing this an extract is obtained from the leaf which if constantly used will become quite harmful. The teapot should be well scoured at least once a week. When making tea, the pot should be filled with boiling water and then emptied; into the pot while still hot put the necessary quantity of tea, and at once pour on the fresh boiling water. Then let it stand for five minutes, covered with a cosy, and at the end of that time you will have a delicious and fragrant cup of tea that will be decidedly beneficial.

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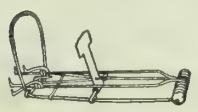
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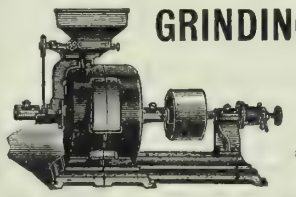
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The Markets.

San Francisco Produce Report.

San Francisco, February 1, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 15⅝@1 15¾	98⅛@ 98⅜
Thursday	1 15⅝ 1 15¾	98⅛ @ 98⅜
Friday	1 16⅜@1 15⅝	99⅛@ 98⅝
Saturday	1 15½@1 16	98⅝@ 98⅞
Monday	1 15 @1 16⅛	98⅜@ 99⅛
Tuesday	1 16⅜@1 17⅛	99⅛@ 99½

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	44⅞@45¼	45¼@45½
Thursday	45⅛@45½	45⅛@45⅜
Friday	45⅛@45¼	45⅜@45⅝
Saturday	45¼@45	45⅝@45⅝
Monday	44⅝@44⅞	45⅛@45⅜
Tuesday	44¾@45¼	45¼@45⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 48@1 48½	$1 32½@1 33
Friday	1 48⅝@1 48⅝	1 32½@——
Saturday	1 48¾@1 48⅝	——@——
Monday	1 48@1 50	1 32¾@1 32⅝
Tuesday	1 50¼@1 53	1 32 @——
Wednesday	1 52¼@1 51¾	1 31½@1 30½

Wheat.

The local wheat trade has not shown much life the current week, nor is it likely to during the balance of the season, as the market is bare of engaged tonnage for grain loading, with every prospect for so continuing until next crop puts in an appearance in sufficient quantity to admit of wholesale purchasing. Business during the next five months will be necessarily confined largely to local needs, and for this purpose some wheat will be imported from the North, although this is not unusual, as more or less wheat steadily drifts into this State from Oregon and Washington, regardless of whether local supplies are abundant or scant. Considerable wheat has been lately shipped from interior points in this State to Texas, and this has aided materially in stiffening the local market. Values are being well maintained at the current range, especially for high grade wheat. There were four clearances to Europe from this port in January, aggregregating 6,950 tons, with a valuation of $208,240, making for the season to date 39,970 tons, value $1,173,814. For corresponding period of 1903-04 the exports were 36,968 tons, value $1,035,325. A year ago there were only two ships here on the engaged list.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.48¾@1.53.
December, 1905, delivery, $1 33@1.30½.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.52¼@1.51¾; December, 1905, $1.31½@1.30½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@—s	10@12½s
Local market	$1 35@1 40	$1 42½@1 47½

Flour.

Movement is not very active, but it is of fair volume, considering the comparatively light stocks now on the market and the generally firm prices ruling for desirable qualities. Any changes in flour values during the next four or five months are more apt to be stiffer than to easier figures.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Market presents a strong tone in consequence of light stock throughout the State. Speculative operators are very wary about selling short at present and those who shorted May option early in the season and have not filled are certain to be severely pinched. Most of the shorts which have been filled on May barley for some time past have entailed a substantial loss to the seller. May delivery of No. 1 feed sold up to $1.24½ the current week, or about 40c per ton higher than was quotable for same grain in the open spot market. A year ago $1.09 was an extreme for May barley, with spot quotable at $1.12½. A cargo of 2285 tons, valued at $54,845, was cleared the past week for Europe. Clearances of barley from this port for the season to date aggregate 81,226 tons, as against 182,610 tons for corresponding period previous season, and 161,782 tons two years ago.

Feed, No. 1 to choice	$1 21½@1 23¾
Feed, fair to good	1 18¾@1 21½
Brewing, No. 1 to choice	1 25 @1 27½
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

There were fair receipts of oats the past week from Oregon and Washington, but light arrivals from the interior of this State. Spot stocks are mostly in second hands and are being quite firmly held. Especially is the market for high grade oats against buyers, supplies of choice to select of any variety being of very limited proportions.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

Spot stocks and offerings are largely Eastern product. Values remain quotably about as last noted, but for desirable qualities the market is rather firm at current figures. Eastern mixed is now held close to the prices asked for straight Yellow or White. California Small Yellow is in scanty supply and mostly in few hands

Large White, good to choice	$1 25 @1 30
Large Yellow	1 27½@1 32½
Small Yellow	1 60 @1 75
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 25 @1 30

Rye.

Little held here and not much offering to arrive.

Good to choice	$1 45 @1 50

Buckwheat.

Local holdings, aside from stocks in the hands of millers, are of quite small volume.

Good to choice	$1 75 @2 00

Beans.

For most kinds showing good to choice quality the market is firm. There has been fair inquiry for shipment, mainly for whites, and tendency of values on same has been upward. Stocks of colored beans are mostly Bayos and Pinks and are not heavy of these varieties. Market for Limas is slow at ruling rates.

Pea, fair to good, 100 lbs	$2 90 @3 10
Small White, good to choice	3 15 @3 40
Large White	2 35 @2 60
Pinks	3 00 @3 50
Bayos, good to choice	2 50 @3 00
Red Kidneys	4 50 @5 00
Reds	4 00 @4 50
Limas, good to choice	3 90 @4 00
Black-eye Beans	2 40 @2 50

Dried Peas.

Offerings are principally damaged Green and Niles from Humboldt section, and for these the market is dull and weak.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

The local market is very quiet and quotable values remain nominally as for some weeks past. Latest advices from the East and Europe report much the same quiet condition existing elsewhere as here. To purchase freely an advance on quotations would likely have to be paid, while if selling pressure was exerted the acceptance of less than full quotations would likely be necessary.

California, good to choice, 1904 crop	27 @30

Wool.

Most of the coming clip of Nevada, Idaho and Montana has been contracted for by dealers at stiff prices, as compared with values of recent years. Some of the clip of this State has been engaged ahead at comparatively good figures, but that buyers will lose money on the goods is not probable. All the markets of the world are decidedly strong in tone. The coming clip of this State promises to be of unusually good quality, owing to recent very favorable weather conditions. In the absence of any noteworthy offerings here, quotations for the time being are necessarily largely nominal.

SPRING.

Northern, free	24 @25
Northern, defective	19 @22
Northern	15 @20
Middle County, free	21 @23
Middle County, defective	18 @20
San Joaquin and Southern, free	16 @18
San Joaquin and Southern, defective	14 @16
Southern lambs, as to quality	18 @17
Oregon, good to choice	21 @25
Nevada	17 @22

Hay and Straw.

Market for hay is slow and weak on the general run of offerings, with stocks liberal. A very decided decline in receipts or pronounced improvement in the demand would be necessary to cause any appreciable change for the better in tone or values.

Wheat, good to choice	$11 00 @ 14 00
Wheat and Oat	9 50 @ 12 00
Tame Oat, fair to choice	9 00 @ 11 50
Wild Oat	8 00 @ 10 00
Barley	7 00 @ 10 00
Alfalfa	8 00 @ 10 50
Clover	7 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 14 00
Straw, ₱ bale	35 @ 55

Millstuffs.

Bran and Middlings are in fair supply, but are mostly in few hands and are not being crowded to sale. Market for Rolled Barley is firm at the advance. Current values for Miled Corn products are being fairly well maintained.

Bran, ₱ ton	$20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 00 @ 26 00
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	——@——

Seeds.

Alfalfa is in moderate stock and not very active request. Mustard Seed offering is almost wholly of the Yellow variety. Bird seeds are being steadily held. Quotable values throughout the list remain as previously noted.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13½
Canary	6½@ 6¾
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Business is mostly of a light jobbing order on local account. Stocks of choice Water White are small, but Amber grades are in fairly liberal supply. Market for ordinary qualities is lacking in firmness.

Extracted, White Liquid	6 @ 6¼
Extracted, Light Amber	4½@ 5¼
Extracted, Amber	3½@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11½@12½
Amber Comb	9 @11

Beeswax.

Supplies are of very moderate volume and current values are being well maintained.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

While there is a fair demand for Beef, offerings are liberal and market is easy in tone. Veal is not in heavy receipt, but there is enough to satisfy the immediate inquiry at full figures. Mutton is coming forward in ample amount for current needs and values are barely steady. Hogs are in light receipt and market is firm for desirable stock, offerings being taken mainly for fresh pork.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6 @ 6½
Beef, 2nd quality	5½@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5¾@ 5¼
Hogs, large, hard, over 200 pounds	5 @ 5¼
Hogs, small, fat	5 @ 5¼
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	8 @ 9
Lamb, ₱ lb	8½@ 9

Hides, Skins and Tallow.

Market for Hides and Pelts in first-class condition is firm at ruling rates. More than are arriving could be readily placed. Tallow is in fair request and prices steady.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@10	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@10	—@ 9
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@ 12½	—@11½
Dry Hides	17½@18	16½@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	$1 25@1 75	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@——	
Horse Hides, salted, medium	2 50@——	
Horse Hides, salted, small	2 00@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Not much doing at present in this department, but Grain Bag market is showing firmness, owing to good crop prospects on this coast and to prices now ruling for jute in India.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@6
Grain Bags, Calcutta, buyer June-July	6 @6¼
Wool Sacks, 4-lb	32 @——
Wool Sacks, 3½ lb	30 @——

Poultry.

Market for most kinds of poultry in prime to choice condition showed decided firmness, arrivals being rather light of both California and Eastern and the demand good. Chinese were active buyers of large Hens, Young Roosters and Ducks, on account of their New Year.

Turkeys, Dressed, choice, ₱ lb	$ 24 @ 26
Turkeys, live gobblers, ₱ lb	19 @ 21
Turkeys, live hens ₱ lb	19 @ 21
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 7 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	6 00 @ 7 00
Fryers	5 00 @ 6 00
Broilers, large	3 50 @ 4 50
Broilers, small to medium	3 00 @ 3 50
Ducks, old, ₱ dozen	5 00 @ 6 00
Ducks, large young, ₱ dozen	6 00 @ 7 00
Geese, ₱ pair	1 75 @ 2 25
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 00 @ 1 25
Pigeons, young	2 00 @ 2 50

Butter.

Market was a little better supplied with fresh than preceding week and the demand at full current figures hardly so brisk. While not quotably lower, the market was slightly easier in tone. Stocks in cold storage are now light. It is said over sixty carloads have been forwarded East from this center in the past two months. Fifteen carloads of this butter arrived in New York on Tuesday of last week.

Creamery, extras, ₱ lb	27 @28
Creamery, firsts	25 @26
Creamery, seconds	23 @25
Dairy, select	25 @26
Dairy, firsts	23 @24
Dairy, seconds	20 @21
Mixed Store	14 @15

Cheese.

Stocks of flats are of fair volume, with the demand at full current rates not very active. Small cheese are moving slowly. Quotable values remain as last noted, but market is not showing any special firmness.

California, fancy flat, new	12 @—
California, good to choice	10½@11½
California, fair to good	10 @10½
California, "Young Americas"	10 @12½
Eastern	14 @15

Eggs.

Demand was fairly active and receipts were not particularly heavy, enabling dealers to keep tolerably well cleaned up at prices much the same as prevailed the previous week. Stocks in cold storage are about exhausted, compelling all consumers to run on fresh eggs.

California, select, large, white and fresh	26 @—
California, select, irregular color & size	24 @25
California, good to choice store	24 @25
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

There were increased receipts of fresh vegetables, especially of Peas and Tomatoes, and market was easier. Rhubarb was in fair supply for this early date. Asparagus put in an appearance in a small way. Onions were offering more freely than previous week and at slightly lower figures.

Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	7 @ 12½
Beans, Wax, ₱ lb	6 @ 8
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ₱ lb	8 @ 10
Garlic, ₱ lb	8 @ 10
Mushrooms, ₱ lb	7 @ 15
Onions, Yellow Danver, ₱ ctl	2 40 @ 2 60
Peas, Green, ₱ lb	3 @ 5
Peppers, Bell, ₱ lb	8 @ 10
Peppers, Green, ₱ lb	4 @ 6
Rhubarb, ₱ lb	5 @ 7
Summer Squash, Los Ang., small b'x	75 @ 1 00
Tomatoes, ₱ box	1 00 @ 1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market was well stocked with Burbank Seedlings and tended against sellers, especially for other than most select qualities. There were free arrivals from Oregon, as well as from the leading producing sections in this State. Early Rose met with considerable inquiry for seed and prices for same ruled steady. Sweets were in increased supply but were held about as last quoted.

Early Rose, ₱ cental	1 35 @ 1 50
Salinas Burbanks, ₱ cental	1 00 @ 1 50
River Burbanks, ₱ cental	65 @ 90
River Reds, ₱ cental	65 @ 75
Oregon Burbanks, ₱ cental	1 00 @ 1 30
Sweet Potatoes, ₱ cental	75 @ 1 10

Fresh Fruits.

Apples were in much more liberal receipt than for previous week, arrivals being largely from Oregon, with the Ben Davis variety heavily in evidence. These were offered at $1.00@1.25 per box for good to choice, but did not move freely at full figures. Choice to select Newtown Pippins and Spitzenberg were not plentiful and were in fairly active request at tolerably stiff prices. Some fancy Oregon Spitzenberg brought in a limited way $2 per box. Common qualities and ordinary varieties of Apples were not quotably lower, but market for them was slow and lacking in firmness. Market was practically bare of berries of every kind. Strawberries from the Southern section are expected to arrive in quotable quantity very soon.

Apples, fancy, ₱ 50-box	1 50 @ 2 00
Apples, good to choice, 50-lb. box	1 00 @ 1 25
Apples, fair to good, ₱ box	75 @ 1 00
Apples, Lady, ₱ box	—— @——
Persimmons, ₱ regular box	—— @——
Strawberries, large, ₱ chest	—— @——

Dried Fruits.

Trade in cured and evaporated fruits is

far from active, but stocks of most kinds are light and market in the main shows healthy condition. Prunes of the medium sizes are in fairly liberal supply, but there are few large or small. Not much doing in Prunes at present, but considerable inquiry is looked for in the Spring and Summer, probably sufficient to effect a clean-up of this fruit before the opening of another season. Peaches incline against buyers, stocks being in few hands. Choice to select Apricots and high grade Pears are difficult to secure in anything like wholesale quantity. Apple market is moderately firm for choice to fancy, these being in light supply. The steamer Umatilla, sailing Monday for British Columbia, carried 24,100 lbs. assorted dried fruits.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4 @ 4½
Apples, extra choice to fancy, 50-lb boxes	5½@ 6
Apricots, Moorpark	9 @11½
Apricots, Royal, good to choice, ℔ lb	7½@ 8½
Apricots, Royal, fancy	9 @10
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

There is a moderate movement for this time of year and at generally unchanged values. Offerings are mostly of common and medium qualities. Stocks of 4-crown Muscatels are likely to meet with an early clean-up.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4 crown, 20-lb box	— @1 30
Dehesas, 20-lb box	— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4¼c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

There are fairly liberal receipts of Oranges and a tolerably good demand, largely for the cheaper grades. While there are prospects of a better market, owing to the freeze in Florida, there is no quotable improvement at present in prices. Lemons were in ample supply for the limited demand; asking figures were without change. Limes were held as previously quoted.

Oranges, Navels, ℔ box	1 25 @2 00
Oranges, Blood, ℔ box	85 @1 15
Oranges, Seedlings, ℔ box	85 @1 10
Oranges, Cal. Tangerines, half box	85 @1 15
Oranges, Japanese Mandarins, ℔ box	75 @1 00
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 25 @2 00
Limes, Mexican, ℔ box	4 50 @5 00

Nuts.

Stocks of Almonds are light and market is firm for choice, although immediate demand is not brisk. Walnuts offering are mostly common quality and for these the market lacks firmness.

Chestnuts, Italian, ℔ lb	7 @ 9
Nonpareil Almonds	14 @16
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	6 @ 7
Cal. Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

The wholesale market is quiet. Choice dry wines of last vintage are in rather light stock in first hands and are being as a rule firmly held. Good to choice are quoted 14@17c. per gallon, with higher figures asked in some instances. It would have to be an exceptionally desirable lot, however, on which an advance on quotations could be realized at present. Taxes will soon attach, and this will tend to deter buyers from operating the current month for immediate delivery. Sweet wines of 1904 are quoted at 25c. per gallon, winery delivery. Receipts of wine at San Francisco last week were 389,150 gallons and for preceding week were 358,525 gallons. The steamer Peru, sailing Saturday last, carried 75,771 gallons and 76 cases, including 71,062 gallons and 1 case for New York.

AGENTS!

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	60,164	2,852,850	3,488,645
Wheat, ctls	40,558	2,055,822	1,567,913
Barley, ctls	37,820	2,509,775	4,558,463
Oats, ctls	12,815	660,130	703,256
Corn, ctls	5,248	131,158	99,602
Rye, ctls	424	38,876	37,783
Beans, sks	11,548	456,157	555,856
Potatoes, sks	36,516	833,382	847,863
Onions, sks	2,662	89,960	107,214
Hay, tons	3,547	117,651	116,713
Wool, bales	253	40,120	34,986
Hops, bales	623	34,769	28,043

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	38,184	2,061,304	2,362,926
Wheat, ctls	461	736,575	725,342
Barley, ctls	9,368	1,578,833	3,589,529
Oats, ctls	296	48,544	15,151
Corn, ctls	1,099	66,838	11,868
Beans, sks	241	39,855	29,878
Hay, bales	3,348	130,921	103,654
Wool, lbs	....	830,690	1,848,923
Hops, lbs	690	274,402	503,079
Honey, cases	3	1,448	3,971
Potatoes, pkgs	3,230	65,183	66,387

Raising Barley Crop.

Miss Martha Marquardt, the 19-year-old daughter of Hans Marquardt, was afflicted last week with what she believed to be tonsilitis. The condition of her throat finally became so grave it was decided to call in a doctor. The physician made an examination and was surprised to see growing in the back of Miss Marquardt's throat a pale little shoot about ¾ of an inch in length, curled back upon itself. Dr. Herne inserted forceps and without difficulty dislodged from a pocket in the tonsils a small barley seed which had lodged in the throat and germinated there. Miss Marquardt immediately felt relief and her tonsilitis disappeared. Miss Marquardt is a popular society girl of San Diego.—Riverside Enterprise.

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How a Spider Thinks.

If you anchor a pole in a body of water, leaving the pole above the surface, and put a spider upon it, he will exhibit a marvelous intelligence by his plans to escape. At first he will spin a web several inches long and hang to one end while he allows the other to float off in the wind, in the hope that it will strike some object. Of course, the plan proves a failure. He waits until the wind shifts, perhaps, and then sends another silken bridge floating off in another direction. Another failure is followed by several other similar attempts, until all the points of the compass have been tried. But neither the resources nor the reasoning power of the spider are exhausted. He climbs to the top of the pole and energetically goes to work to construct a silken balloon. He has no hot air with which to inflate it, but he has the power to make it buoyant. When he gets his balloon finished he does not go off upon the mere supposition that it will carry him, as men often do, but he fastens it to a guy rope, the other end of which he attaches to the island pole upon which he is a prisoner. He then gets into the aerial vehicle, while it is made fast, and tests it to see whether its dimensions are capable of bearing him away. He sometimes finds that he has made it too small, in which case he hauls it down, takes it all apart and constructs it on a larger and better plan. A spider has been seen to make three different balloons before he became satisfied with his experiment. Then he will get in, snap his guy rope and sail away to land as gracefully and as supremely independent of his surroundings as could well be imagined.—Frank H. Sweet, in Lippincott's Magazine.

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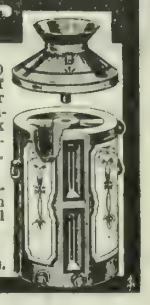
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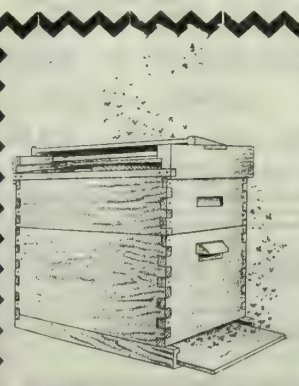
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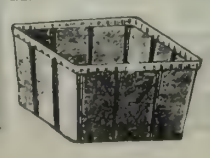
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Tulare Grange.

TO THE EDITOR:—Tulare Grange was largely attended at its regular meeting January 21st, with Worthy Master Emmett Barber in the chair. The Worthy Lecturer, Bro. John Tuohy, will be absent for several months. He and wife are making a trip through parts of Europe.

Bro. Thos. Jacob reported that the PACIFIC RURAL PRESS was selected by the State Grange executive committee as the official organ of the Grange, which was satisfactory to our Grange, and it is hoped that the members of the Order in different parts of California will contribute good, wholesome, common-sense, up-to-date, practical articles for its readers.

Tulare Grange believes that this State should have an agricultural college and farm combined, but not to be at Berkeley.

A committee was appointed to go before the Board of Supervisors and endeavor to have that body raise the bounty on squirrel tails from 2 cents to 3 cents. It desired that joining counties have the same law; if so, it will in a great measure lessen fraud and encourage many to exercise more earnestness and action in endeavoring to destroy the squirrels.

The question which is of the greatest importance to the members of any Grange, and opens up a broad field for investigation and discussion as to the advantages to be derived, is the improvement of highways. Through national aid this would perhaps confer benefit upon a larger number of people than any other legislative subject now before our State and national law makers, for all the people travel the roads to a greater or less extent.

The establishment of a parcels post upon similar lines on which the system is established in foreign countries would enable the postal service to render much aid to rural people at small expense without increasing the net cost of the service to the Government. This would be an advantage to a vast number of people.

The extension of foreign markets for farm products would relieve the overstocked domestic markets and thereby increase the demand for such farm products as were produced upon the farms of the country. Many other thoughts will suggest themselves in connection with the various phases of the subject and a consideration of them in detail will aid in determining which legislation would be most beneficial to the people in any locality, with an active discussion of these various legislative propositions, and impress the members with the necessity of more work and greater activity in their various capacities. E. C. S.

Tulare.

Lime, Sulphur and Salt Wash.

FOR WINTER USE UPON DECIDUOUS TREES FOR PERNICIOUS SCALE, CURL LEAF, PEACH MOTH, ETC.—The following formula if properly prepared and used will prove an effective solution: Unslacked lime, 40 pounds; sulphur, 20 pounds; stock salt, 15 pounds; water to make 60 pounds.

Directions.—Place 10 pounds of lime and 20 pounds of sulphur in a boiler with 20 gallons of water and boil over a brisk fire for not less than one and a half hour, or until the sulphur is thoroughly dissolved. When this takes place, the mixture will be of an amber color. Next, place in a cask 30 pounds of unslacked lime, pouring over it hot water to thoroughly slack it; and while it is boiling add the 15 pounds of salt. When this is dissolved, add to the lime and sulphur in the boiler and cook for half an hour longer, when the necessary hot water to make the 60 gallons should be added.

Follow the above directions carefully, particularly the boiling, if you desire success. Use this remedy as late in the season as possible. The best results will be obtained by spraying just before the peach trees burst into full bloom. On cloudy, moist days blossoms will not be injured by this wash, but in dry weather, with north wind, blooms will be damaged if full strength is used.

T. B. Hull, R. C. Kells, H. P. Stabler, Horticultural Commissioners, Sutter county, Yuba City.

The St. Louis Trade in Range Mules.

Practically the first experiment with the range mule business was in one of the July sales in 1902, when a pretty fair bunch of 14½-hand animals sold at $52. It was considered a good price then, but subsequent sales have been made at decidedly higher figures. One bunch was sold September, 1903, at $68, which did not average any bigger, though perhaps were a shade better. But the most pronounced results on mules were obtained during the year just closed, when in the first July sale a load averaging 15 hands sold at $92, and later on in August a load of 15.2-hand mules sold at $110. Another lot of 122 head were sold on October 25. The top load brought $76.50, and the cheapest load $50, while the total average for all was over $64. The most notable sale of the year and of the entire business transpired at the last sale held in November. One hundred and sixty-one head from Montana were sold for a total of $12,143, or an average of $75.42. The top load brought $116 and were about 15.3 hands, but thin; the lowest load were thirty-eight yearlings at $33. Another consignment from Oregon, embracing 258 head, sold for a total of $17,235, or an average of $66.80, and the top load brought $97.50.

Good Satisfaction.

Spring Green, Wis., July 11, 1904.
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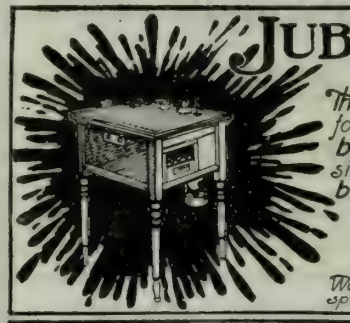


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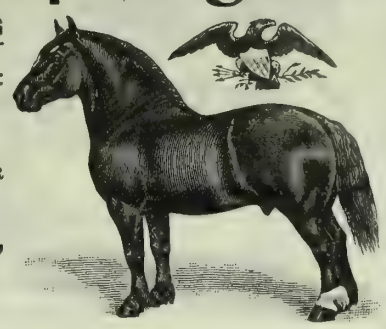
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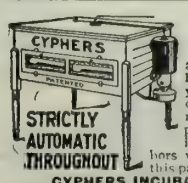
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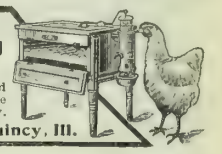
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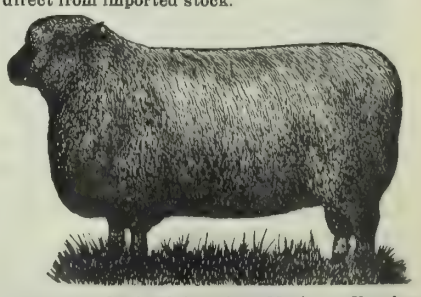
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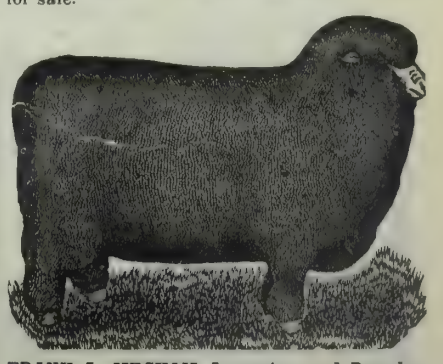


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THE VINEYARD.

Mr. Pierce and the Lenoir.

The United States Department of Agriculture has so far succeeded in its experiments for the control of the California vine disease that it is thought desirable to place the facts before the public at an earlier date than would be practicable through official channels.

Experiments with grafting stock have been in progress in the center of a badly affected district for over eight years. These experiments have included the grafting of some 400 acres of vines, the enterprise being conducted by leading viticulturists of California. The facts learned are in effect as follows:

1. The Lenoir vine, when growing upon its own roots, is practically resistant to the named disease, having been known to thrive and bear heavily for fifteen years in the midst of thousands of acres of dead and dying vineyards.

2. The Lenoir vine, as a top graft, has been known to save tender Muscat roots for several years after all Muscats upon their own roots had been killed by the disease throughout the surrounding region.

3. The Lenoir vine, as a root upon which to graft varieties of grapes very subject to this disease, and which are fully exposed to its action, has saved tens of thousands of such tender tops in a vigorous and normal condition for nearly or quite five years, or to the present date in the midst of dying vineyards, and hundreds of acres of younger vines on the same root are perfectly thrifty and normal under like conditions.

4. New varieties of grapes which have received Lenoir blood through hybridizing have shown resistance to the same disease.

In addition to the above facts, it may be stated that the writer sees no reason to doubt the identity of the vine disease in the Santa Clara valley with the California vine disease.

These views are given so any advantages that may arise through a knowledge of the hardiness of the Lenoir vine may be realized by the growers of that viticultural district. The fact that phylloxera also exists in many regions should, however, always be taken under consideration.

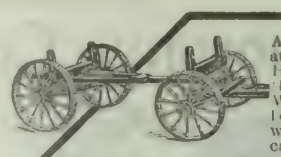
Newton B. Pierce,
Pathologist in charge, Santa Ana Station.

The Forest Reserves.

The bill passed by the House last December, for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture, made its appearance in the Senate the other day in an entirely new form. Senator Kittredge, from the Committee on Forest Reservations and the Protection of Game, reported the House bill with amendment, which amounted to a substitute to all that part of the House bill after the enacting clause. The effect of the bill, however, is the same, and if it passes—as it probably will—it will give the Secretary of Agriculture supervision over all public forest reservations.

Boston, July 13, 1883.
Dr. S. A. Tuttle, Dear Sir.—I used your Elixir on two horses for curbs, and in ten days they were as free from the disease as on the day they were foaled. I can cheerfully recommend it as a sure cure for curbs. JOHN F. WINCH.
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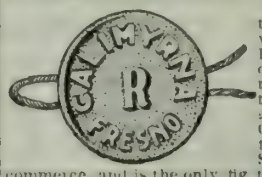
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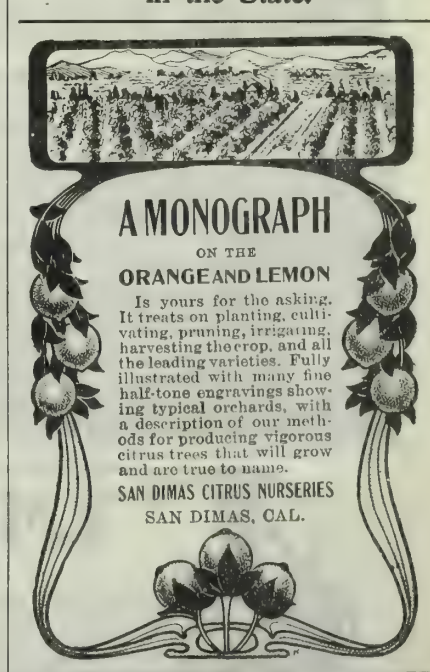
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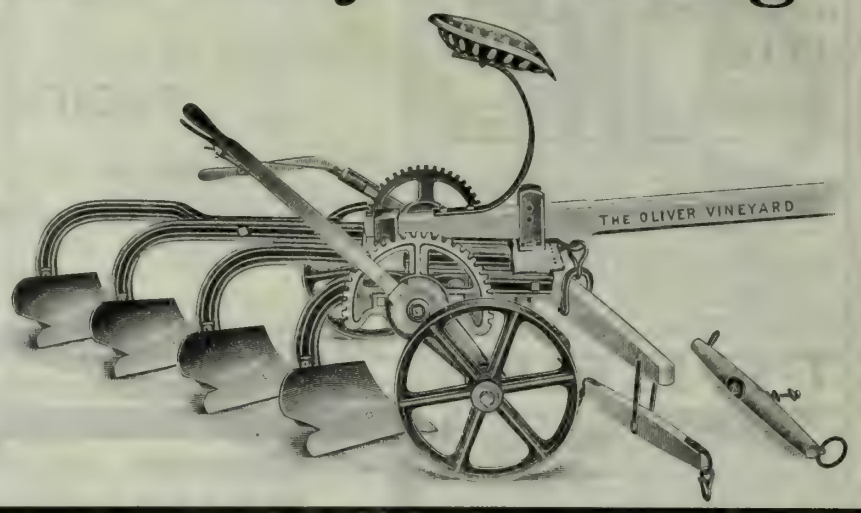
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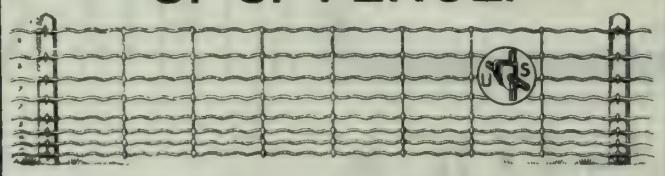


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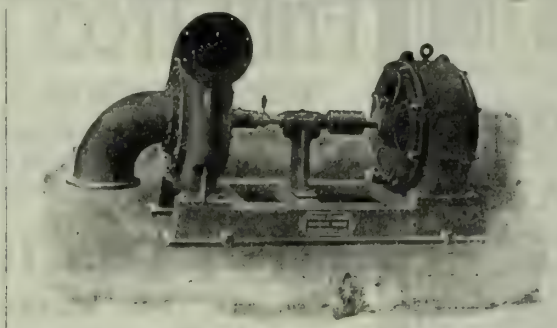
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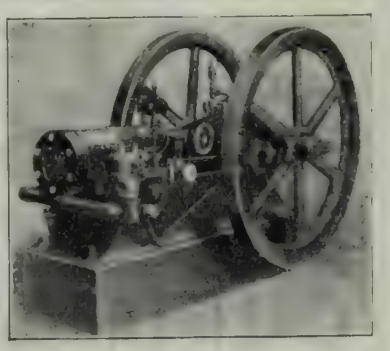
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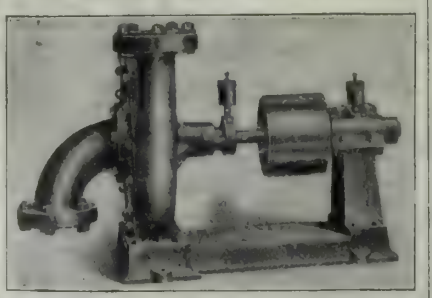
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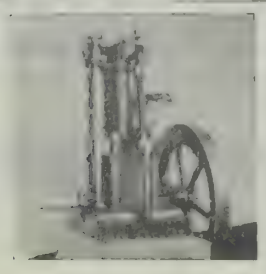
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Vol. LXIX. No. 6. SAN FRANCISCO, SATURDAY, FEBRUARY 11, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

The Pear Scab.

Though the pear scab has been of late rather obscured in public interest by the sensational advance of the blight which is a much more serious foe of the fruit, the scab has still been doing considerable destructive business at the old stand and in the same old way. The defacement and distortion of the fruit has caused great losses by culls not acceptable to canners or shippers and of reduced value for drying. For these reasons some co-operative experiments were undertaken in which the University of California Experiment Station joined with pear growers, the work being pursued by Prof. R. E. Smith, the University expert on plant diseases, who has just prepared a very interesting bulletin on the subject, from which some parts, especially pertinent to the warfare against scab, are reproduced upon another page of this issue. For the purpose of enabling many of our newer readers, who do not know this disease, to detect its presence, we give on this page some distressing instances of the blemishes and distortions resulting to the foliage and fruit, together with a drawing by Prof. Smith showing how the fungus erects itself and casts forth reproductive spores, as seen with the microscope. Concerning the disposition of the disease, Prof. Smith says that it affects all varieties of pears, but with considerable difference in the different kinds. The Bartlett is neither the most nor the least affected, but stands intermediate in the list. Most susceptible to scab are some of the later varieties like Winter Nelis and Easter Beurre and also the Early Madeleine. The apple is also affected by scab, although not nearly as much so in California as the pear, though in the Eastern States both scab and codlin worm are worse on apple than on the Bartlett pear.

Whether the pear and apple scab fungus are identical has ever been an unsettled question, and still remains so. The two are very similar in appearance and structure. Both pear and apple scab have increased decidedly in California within the last few years. In the Sacramento valley, particularly toward the upper end and east side, pear scab is reported to have been troublesome only since the beginning of the present decade, while apple scab is not yet abundant in the State, but is increasing in the Santa Cruz and southern California mountains. The prevalence of pear scab shows a marked relation to the climatic conditions of various parts of the State and of different seasons. The disease is greatly favored by atmospheric moisture in the spring. Sections with the prevailing dry winds show less pear scab, and in seasons with little spring moisture the disease is less abundant than when the contrary is true.



Scab on Leaves and Fruit of Early Madeleine.



Active Growth of Scab on Young Bartlett Pears.



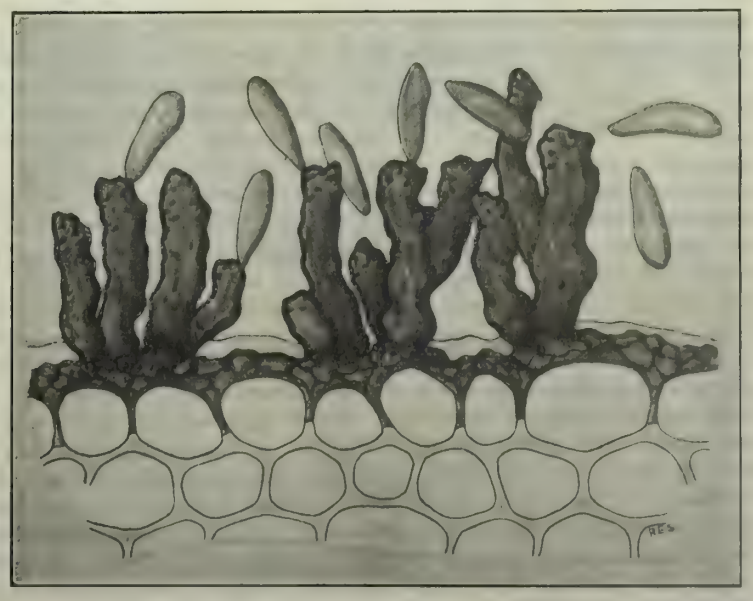


Scars of Earlier Injuries by the Scab Fungus Upon Mature Bartlett Pears.

As the season progresses and moisture becomes less abundant, the visible fungous growth upon the scabby spots becomes less prominent, and in the Bartlett variety disappears almost entirely.

As the fruit swells the growth of those pears having scab on one side is checked in such places, so that, as the other side enlarges, the pear twists and doubles over, as shown in the engravings, or even much worse than this. But upon the older pears the mark of the active fungus has almost entirely disappeared, leaving only a corky appearance of the surface. This is characteristic in California with the Bartlett, showing that the scab on the mature fruit starts in the spring, and that later infection during the summer when the pears are nearly grown does not occur, the surface being smooth and free from scab except in the old original spots. On the Winter Nelis, Clairgeau and Easter Beurre, new scab spots develop later in the summer when the pears are quite large, and brown spots of fungus can be seen on the surface of these pears, without much distortion, late in the season.

The difference in the time of infection is of practical importance in controlling the disease.



Section of Scab Spot on Fruit, Showing Fungous Growth, Much Enlarged.

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The Week.

The general storm to which allusion was made last week justified all that was anticipated for it and in some places in southern California did even more than was wanted. The reports of precipitation and the descriptions of swollen streams and swamped railway tracks read like accounts of happenings a decade or more ago and which some people had begun to think were never to return. It is all right, however, on the whole, and in spite of local injuries, the storm must be taken as assurance that southern California still has a rainfall to be trusted and the water will rise again in the soil to an availability which has not been recently experienced. It is a grand event in the agricultural history of the State. Since the storm the weather has cleared, and it is only to be apprehended now that the growing conditions may bring the trees and vines along too rapidly—but that depends upon what comes later and that is not necessarily bad.

Spot wheat is unchanged, but futures closed rather weak and lower here, though Chicago shows July wheat higher. About ten ships are here available for wheat and 20s is asked for new crop loading. Barley is easier, feed being 50 cents lower per ton. It is interesting that there is some barley from the middle West here for export, being brought here at a concession in railway freights for that purpose. It s held at $1.11¼ in bulk or $1.17½ sacked, but to be had only for export at those rates. It is also interesting that corn from the middle West to Atlantic ports has a special reduced rate; this may relieve the corn pressure at the center and advance corn here, as we are largely dependent upon Eastern stock. The whole line of beans, including Limas and blackeyes, is doing better and there is some slight marking up. Bran and middlings are firmly held and in light receipt, though prices are not changed. Hay is no better and offerings large. All meats are weak but hogs; there are too few hogs for the pork trade and packers are not in it. Butter is easier on the top grades, with an active demand for lower grades for export. Fresh ranch eggs are weak and lower grades firm; some are going north. Poultry is easier, but good lots go well. Common potatoes are plenty and fancy are held up well. Onions are higher and in lighter supply. There is a glut of common apples, but the supply of fancy is light. Oranges are in fair demand and ample supply; lemons steady and quiet; choice pomelos going well and limes in light stock. Dried fruit has some movement; about 40,000 pounds of prunes have gone north and to Australia, and nearly as much mixed fruit beside. Nuts are quiet. Honey is slow; 100 cases of Hawaiian reported sold for local use. Hops are talked up and down, but are unchanged. Wool buyers from the East are in New Mexico and Arizona and expected to come on this way. There is nothing doing here.

Vacancies for some time existing in the State Dairy Bureau have been filled by the Governor by the appointment of W. Frank Pierce of Oakland and G. R. Sneath of San Bruno, San Mateo county, to fill the vacancies caused by the death of Dr. Thomas Flint and Mr. John Flannery. These are good appointments—both are progressive dairy owners and wideawake business men—and much can be expected from their administration.

The movement to properly equip the Agricultural Department of the University with a good farm seems to be making more headway than any other of the agricultural projects before the Legislature. The committees have reported back appropriating $150,000, instead of $250,000, for the purchase and equipment of such a farm. It is specified in the bill that the purchase must include at least 320 acres of land, which in situation, quality of soil, conditions of climate, etc., must be "characteristic" of the general agricultural conditions of the State. A commission of five persons is authorized to make the selection—the Governor, the Lieutenant-Governor, the president of the University, the president of the State Agricultural Society and the State Horticultural Commissioner. Of course the measure has its passage still to make, but its progress thus far is promising, and the reduced amount of money will go a long way toward realizing the equipment needed for the practical instruction which the University proposes to develop on such a farm.

The codlin moth parasite, of which so much is expected, is being established for trial in the orchard, under the best conditions known to the assistants of the State Horticultural Commissioner. Meantime the collector, Mr. Gompere, has returned from Europe and brought a large addition to the supply, which will be handled as skilfully as possible toward their multiplication in this State. The interest of the people is naturally aroused in this chance of reducing the apple worms without spraying, as we judge from our correspondence, but, of course, people should possess their souls with patience. The bringing of an insect is only the beginning of its local journey, and it is unavoidable to wait for a time to demonstrate its local value. Everything which can be done toward such demonstration is being vigorously pushed.

If California can build up a great fiber industry it will be a grand thing, for it must be acknowledged that the enterprises of the last third of a century have not realized much except in the line of hemp, chiefly on the low lands of Butte county. But Californians are not disposed to give up trying. A committee of progressive citizens of Stockton has undertaken to establish ten trial farms for determination of the best soils for flax. One station recently planted is on adobe land, about 6 miles north of Stockton; another is at French Camp, on sandy soil, and others are on reclaimed lands. The agricultural department of the State University will co-operate with the Stockton men in this enterprise. The expert who is promoting the enterprise is Dr. J. K. Toles, who grew a crop of flax on reclaimed lands last year, took samples to manufacturers of linen throughout the East, who were particularly pleased with the fiber. They agreed that the market for that grade of flax is unlimited, and the future of the industry is assured if the crops are brought up to the standard shown by Dr. Toles. The peculiar pearl color and luster of the fiber shown in the California product is new to the manufacturers, who sent abroad for their finest textures and finish, and they acknowledged that such beautiful fiber has never before been produced. Dr. Toles said that the climate and soils of California should be largely credited with this superior production, and he hopes to show a continued yield of the high grade of fiber in his future work.

QUERIES AND REPLIES.

Almond Stock—Peach Grafting.

To the Editor:—Do you think almond stock would be all right for peaches and plums in this locality? Would almond stock and late plums, e. g., Grand Duke, be all right? Could peaches on almond stock get along with less water than on peach stock? Can peaches be successfully grafted, if two-year-old wood with one-year-old spur is used? If not, how can they?—Grower, Placer county.

Almond stock ought to do well for peaches and for most plums and prunes in your locality, providing the soil is not too heavy, or too shallow, or likely to become too wet by irrigation. The almond stock does best on deep, rather light soil, where moisture is always ample but never excessive, and under those conditions would carry late plums all right. Peach trees on almond stock might get along with less water, but it is doubtful whether they would be profitable, because in order to be of any commercial value, peaches must be of satisfactory size, and this requires enough water. Peaches certainly can be grafted on new wood from older growths, providing extra care is taken to wax the graft, or they can be budded into wood which grows this year. Peach grafting is rather difficult because of the tendency of the bark to dry out, and budding is always preferred when practicable.

Moldy Apricots—Scale Washes.

To the Editor:—Will you please tell me what causes this white fungous growth on enclosed sample of dried apricots, and what to do to prevent it? Is there a way to prepare the sulphur, lime and salt spray without cooking over a fire? I have heard of using lye or caustic soda with the same result; if so, will you please give formula through the Pacific Rural Press?—A Subscriber.

The apricots are simply growing molds in spots, either from inadequate curing or from storing in too moist air. On another page there is a self-cooking formula for the lime, sulphur and salt wash to be used as a fungicide; whether it will do as well as the old pot or steam-boiled mixture for San Jose scale is not determined. No lye spray is considered as good as the lime, sulphur and salt for this insect.

Roots for a Trying Place.

To the Editor:—Which would make the best stock for peaches on a dry and rocky soil (wet in winter and dry in summer), the bitter or sweet hardshell almond root? Would the peach on its own root be better? In order to save time would any advantage be gained by planting seedling trees in place and grafted or budded afterwards?—Subscriber, Sonoma.

We doubt if fruit trees should be planted for profit in such a place, if it is as bad as you describe. The cheapest and easiest way to test the matter is to buy some rather small peach trees on peach roots, give them extra good summer cultivation to retard drying out of the soil and they will bring peaches if anything can in such a place. If you can help them with some water in summer you will give them a better chance to succeed.

For San Jose Scale.

To the Editor:—Is there no other remedy for the San Jose scale than the sulphur, lime and salt spray? I know from experience that this wash is effective if made and used strictly according to formula, but the majority of peach growers here complain of the cost and trouble of preparing it, consequently they use carbolic and other materials on the chance that they may kill the scale. The result is that it is spreading rapidly. I have noticed in Eastern papers mention of a combination of lime and kerosene. The lime is processed and called "limoid." Can lime of a better quality than common builders' lime be obtained here? Lime in the Fresno market is generally poorly burned, is full of rock that will not slake, and consequently is hard on the spraying outfit. A spray mixture, to be frequently and generally used, must be easier to prepare than the sulphur, lime and salt wash. Of course I understand that it pays to use this spray correctly, but there are so many who will not use it, to the detriment of themselves and others.—Subscriber, Oleander.

The ground lime, which is called limoid, is simply an absorbent for the kerosene from which it slowly releases itself and spreads over the bark. Nothing but local experiments will determine how effective it is as a scale killer under our conditions. The lime, sulphur and salt wash, carefully prepared according to the formula, which we republished last week, is so

effective when faithfully used that it must evidently be the main reliance until something is not only claimed but has been demonstrated to be as good. Of a dozen San Jose scale killers used during the last twenty-five years in this State, and including various forms of kerosene, the lime, salt and sulphur is the lone survivor on the ground of thorough efficiency.

The Longer Catechism.

TO THE EDITOR:—I have lately acquired a small place on the outskirts of town and would be obliged if you could give me some information on a few points. I might premise that I know nothing of agriculture. This is to be a home—not a ranch—still I desire to get the best possible results.—SETTLER, Santa Clara county.

I understand some soil surveys have recently been made of the Santa Clara valley. Where can they be had?

Soil surveys of the Santa Clara valley have recently been made, and a very interesting pamphlet, entitled, "Soil Survey of the San Jose Area," has just been published. You can get a copy by applying directly to the Division of Soils, United States Department of Agriculture, Washington, D. C.

Is barnyard manure the best, cost, etc., considered, that can be used to enrich this soil? If not, what would be the correct fertilizer?

Barnyard manure, if available without too much cost of hauling, etc., is the best material that you can use.

If barnyard manure, would it be better to spread it fresh or fermented—that is, rotten? I have quite a few hens and get about a two-gallon bucket of droppings a day. What is the best method of utilizing this, also of preserving it until it is needed?

It may be spread fresh and worked into the land during the rainy season to good advantage. During the summer time it should be put into a pile and rotted by the use of water from time to time to prevent the generation of high heat, which is destructive to the material, or it may be spread out in the corral and dried thoroughly and then gathered up and applied to the land at the beginning of the following rainy season. When it is allowed to dry thoroughly and quickly the manure does not lose its value, and this is even a very much cheaper and more practical method than to undertake rotting by the compost method. The same thing is true with reference to hen manure. Scatter it and work it into the soil fresh during the rainy season. During the dry season allow it to dry thoroughly, using dry road dust or finely ground gypsum to facilitate the drying and to prevent loss of ammonia. When dried with dust or gypsum it can be kept in barrels, etc., until the time comes for its application.

There are a couple of apple trees on the place—these are cooking apples and poor in quality. What good eating apple is best suited in this climate? and what method of grafting the most preferable? Stock is strong and vigorous and about 5 inches in diameter.

We graft apple trees in California by the common top-grafting method, which is employed in other parts of the world, grafting, however, into the branches, above the forking, and not into the main stem. Desirable eating apples are: Red Astracan, Gravenstein, Skinner's Seedling, Yellow Bellefleur and Yellow Newtown Pippin. These cover the whole length of the apple season.

What peaches, apricots and grapes are best suited to this locality for home use—the best possible wanted?

The best peaches for home use from early to late are as follows: Brigg's Red May, Alexander, Hale's Early, Early Crawford, Muir, Lovell, Salway. All except the first three are yellow freestones.

The best apricots in season are: Newcastle, Royal, Blenheim and Moorpark. The Moorpark is rather a shy bearer, but it is better in your district than elsewhere in the State.

For table grapes, the Sweetwater, Muscat, Black Hamburg, Verdel and Black Cornichon are a good succession.

If orchard is kept in high state of fertilization, will it not be possible to take off one crop a year besides the fruit, or would it be advisable to sow some kind of cover crop and then plow it in?

If your soil is rich enough and moisture sufficient you can crop the land between the trees with ordinary garden products without injury to the trees. Although, of course, if you do not need such products, or have other land for them it is better to give the trees the full advantage of the soil and to plow in cover crops as far as practicable.

Are the best results to be obtained in this locality with or without irrigation? If with irrigation what is the least expensive method of applying water?

Undoubtedly the best results in any such extensive cropping as you mention, and in many cases the best results even where the trees have the full use of the ground, are to be obtained with a certain amount of irrigation as supplementary to the rainfall. The least expensive method of irrigation for such crops as you propose is the small furrow system, running the water in small furrows between the rows of trees, vegetables, etc., and following with the cultivator as soon as the ground works well.

What makes a good lawn grass for this climate?

With water and work enough a lawn of Kentucky blue grass and white clover mixed is on the whole most satisfactory. You can get a rougher lawn with less water by the use of rye grass.

What plums are best suited to this locality?

Nearly all kinds of plums will grow well in your district. You can plant anything you fancy for home use and expect to be gratified with the result. For a commercial product probably no plum is safer than the French prune which is largely grown in your region and if your conditions and methods result in a good, large prune, well cured, it may be expected to be profitable.

Making the Lime, Salt and Sulphur Wash Cook Itself.

TO THE EDITOR:—In your issue of April 30, 1904, you published an article of mine giving the formula for preparing quickly the lime, sulphur and salt spraying mixture. Several who saw the article and neglected to save it have lately written me for the formula. As the time for killing the peach worm or twig borer will soon be here, I wish you would republish the formula, as it is certainly a success and saves much time and expense over the old style of boiling. —D. W. MILLER, Linden.

We are glad to have Mr. Miller's reaffirmation of his satisfaction with the self-cooked wash. Substantially the same formula is given near the close of the article on "Sharp-Shooting for Pear Scab" on another page of this issue. Prof. Smith's observations on the use of this wash for pear scab, taken together with Mr. Miller's approval for the peach moth, seem to give the preparation a very good name.

Preservation of Fence Posts.

TO THE EDITOR:—One of your subscribers asks how to prepare posts, or any wood that goes into the ground, from rotting. I have a preparation that I used when I used hop poles for training hops, and use it now on trellis posts and fence posts. I used it until my hop pickers would break the poles off above the ground; then there was no use in trying to preserve the poles. I dip my posts in boiling gas or coal tar, in a sheet iron box 4 feet long on the bottom, 5 feet on top, 20 inches wide and 2 feet high, with the slope only on one end. Let the posts drain or drip a little, and while warm, or before the tar is dry, immerse them in dry, sharp sand. The tar will take up just enough sand to make a coating, which dampness or worms cannot get through, and will soon take off the edge of any instrument that attempts to cut them. The sand should be coarse, sharp and dry, for damp sand will not adhere to the tar. I want the posts dipped so they will show at least 6 inches above ground. Tar can be had at gas works for $5 per barrel, and sand on the banks or bar of most any stream. Dipping in tar without the sand does not, I think, pay for expense and trouble.—DANIEL FLINT, Sacramento.

Asparagus and Rhubarb.

TO THE EDITOR:—Is there a publication on the culture of asparagus and rhubarb? Has the tangelo been tested sufficiently to be certain of its qualities, and would you advise one to bud lemon trees with it in preference to pomelo? Is the Nectar pomelo superior to all others? Are these seedless?—READER, Pomona.

The culture of asparagus and rhubarb, as pursued in California, is given in our book on California Vegetables. The tangelo is too new to warrant definite conclusions about it. It will take time to discover whether it is better than the pomelo, nor is the Nectar pomelo clearly better than the common. It is enterprising to try these things, but it takes time to demonstrate which the market prefers.

Probably a Hybrid.

TO THE EDITOR:—I send some nuts for identification. As you can see, they closely resemble the California black walnut, but are a slight improvement over them. Is it Burbank's hybrid walnut? It was grown on the C. W. Clark ranch about 4 miles east of Kingsburg.—C. E. D., Kingsburg.

It is apparently a hybrid of the California black walnut, but not necessarily Mr. Burbank's, for several chance hybrids have shown up in the interior valley during the last twenty years. It is not of commercial value as a nut.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 6, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Rain fell nearly every day during the week and the weather was unusually warm for the season. The continuous heavy rainfall caused a suspension of all farm work and is regarded as unfavorable for grain, which in some places has commenced turning yellow. Most of the early grain, however, is still in good condition, and with fair, cooler weather will probably make rapid improvement. The acreage in grain is larger than usual and will be increased as soon as the soil is in working condition. The warm weather may prove unfavorable for deciduous fruits, in causing premature budding, but a well known authority among horticulturists regards the season as remarkably favorable for fruit growers.

Coast and Bay Sections.

Warm weather continued during the week and light to heavy rain fell in all sections nearly every day. The soil is so completely saturated that nearly all farming operations have been suspended except in portions of the southern districts. Grain is reported in excellen t condition and is making good growth. In the vicinity of San Luis Obispo grain planted before the rains has made a growth of 6 inches. Prospects for large crops of wheat, oats and barley were never better. Some damage has been done to crops by the overflow of streams in the northern districts. Pasturage is plentiful in all sections and stock are in good condition. Deciduous fruit trees have commenced budding. Pruning is in progress in some places.

San Joaquin Valley.

Warm, cloudy weather with frequent rains prevailed during the past week. These conditions were very beneficial to grain, grass, vines and orchards. Grain has made rapid growth and is reported in excellent condition. Green feed is plentiful and stock are healthy and in good condition. Pruning and cultivating orchards and vineyards are nearly completed in some sections and progressing as rapidly as the wet soil will permit. Fruit buds are swelling in some districts. Heavy shipments of hay continue to southern California. Heavy snow is reported in the Sierra.

Southern California.

Heavy rain commenced Wednesday and continued most of the week, with severe storms and heavy snowfall in the mountain districts. Rivers overflowed their banks, causing great damage to the railroads and other property. At Pasadena a church building was struck by lightning and burned to the ground. The seasonal rainfall at Los Angeles is now 10.13 inches, and is probably much greater in the foothills. At Upland 10.34 inches had fallen up to Saturday. Warm weather has prevailed and grain and grass have made good growth. Crop prospects were never better at this time of the year. Plowing, seeding and tree pruning are progressing. Green feed is plentiful.

LOS ANGELES SUMMARY.—The storm beginning February 1st continues with generous well-distributed rain, heavy at times, with some damage, but the good far offsets the harm. Rain will do much towards replenishing the water supply depleted by a long period of dry years.

EUREKA SUMMARY.—The weather during the week was favorable for farm work. Grass and grain continue to make rapid growth. Prospects for abundant crops are excellent. Soil on the bottom land is still too wet for plowing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 8, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	0 41	22 55	26 18	27 57	54	38
Red Bluff	1 82	24 12	14.10	16 91	66	38
Sacramento	1.46	13 68	5.37	12.13	56	40
San Francisco	1.42	16 02	7 95	15 03	60	48
Fresno	1 86	7 90	1 74	5 28	64	38
Independence	....	....	....	2 79	..	..
San Luis Obispo	4.88	14.21	3 84	13.13	62	38
Los Angeles	5 05	10 81	1 63	10 00	64	40
San Diego	4.11	8 88	1 32	4 57	60	50
Yuma	0.36	2 33	0 66	2 19	72	42

HORTICULTURE.

Sharp-Shooting for Pear Scab.

Prof. R. E. Smith, the plant disease expert of the University of California Experiment Station, has just published a very valuable bulletin on exact and effective work with the pear scab which should receive the close attention of all pear growers who have to fight this disease. We give herewith in condensed form the results of the co-operative experiments made with several orchardists and Prof. Smith's conclusions from them:

Control of Pear Scab.—That pear scab may be effectually controlled by proper and well-timed spraying has been repeatedly demonstrated in many parts of the country. That it is not controlled in a great many California pear orchards, in many cases even where more or less spraying is done for this particular purpose, is but too well known to all who handle the crop. The object of this work was therefore primarily to find the reason for the failure of much well-meant work which is done, and to point out the best and most economical practice for use under California conditions. In other words, more definite information was needed as to what is effective and essential in the control of this pest, and what is non-effective and useless in regard to present practice.

The Old Prescriptions.—The usual recommendations for pear-scab treatment, published in bulletins and spray calendars of the various State experiment stations, call for spraying with Bordeaux mixture just as the buds expand, again after the blossoms have fallen, and a third time about two weeks later. This refers to spraying for scab alone, without reference to insect pests. In California the spraying of pears for scab has been largely along the line of general treatment for the eradication of all pests, definite or indefinite. To "clean up the tree" is a popular expression of the object of most pear tree spraying, except the use of paris green for worms. More definitely stated, the usual California practice of pear spraying consists in treatment with lime, sulphur and salt in January for scale, scab, moss, softening the bark, and a general "clean up." This is applied by some every year, by others once in two or more years, and in still other cases not at all. Beyond this two or three sprayings with paris green and lime are made in summer after the fruit sets, adding bluestone for scab and general results.

California Practice.—The results of this treatment have not been entirely satisfactory in relation to scab control. While the disease has varied in abundance from year to year, orchards sprayed in this way have shown much scab in years when it was abundant and considerable losses have resulted. Neither the early winter lime, sulphur and salt treatment, or the summer paris green, bluestone and lime spray, or the combination of the two, has shown decidedly satisfactory results in scabby seasons when closely followed up, although such treatment has been better than none at all.

In spraying orchards year after year for some time it naturally results that, on account of varying weather conditions and other causes, the work is not done at the same time every year. This has been the case in the winter spraying of pear trees with lime, sulphur and salt. The time of such treatment has thus varied from December to the time of blossoming in March, in different orchards and in different years in the same orchard. Various other sprayings have also been done in a variety of instances, differing more or less from the usual practice outlined above. From such sources there seemed to have been demonstrated, in a number of instances in this State, that spraying at some period just before the time of blossoming was particularly effective in the control of scab. One grower, for instance, in spraying with lime, sulphur and salt, was delayed by rainy weather so much that in one block the buds were much advanced and the spraying not done. Finally a last tankful was put on when the trees were almost in full bloom and the remainder of the block left unsprayed. Although many blossoms were killed by such late treatment with this caustic spray, the effect on scab was most decided, the trees receiving the late treatment producing very much cleaner fruit that those sprayed earlier in the winter or those not sprayed at all. This incident is typical of many similar ones which might be cited. Such experience goes further than to support the usual recommendation of spraying as the buds unfold, representing one of three or more applications, since it appears to indicate the existence of a time when one spraying is peculiarly effective under California conditions, or when more than one, close together, might be more effective than the same number at any other time.

With this idea in mind the co-operative work carried on during the past season was instituted. The plan was to find out, by spraying at various definite times, the most effective period of spraying for scab control, and in general the comparative effect of treatment at various times before and after setting of the fruit.



Fig. 1.—First Stage in Bud Development. Slightly Swollen.

Fig. 2.—Second Stage in Bud Development.



Fig. 3.—Third Stage in Bud Development.



Fig. 4.—Fourth Stage in Bud Development.



Fig. 5.—Fifth Stage in Bud Development. Blossoms Beginning to Open.

The Lime, Salt and Sulphur.—In various orchards the writer has followed the effect on scab of spraying with lime, sulphur and salt, before the fruit buds swell. In one case, for instance, part of the orchard was left unsprayed, the work stopping part way down a row of Winter Nelis. This was in February. In the amount of scab next summer no difference could be seen in this row or in the sprayed and unsprayed parts of the whole orchard. All were equally scabby. Many similar instances of this could be cited, all showing that while winter spraying with lime, sulphur and salt kills scale when present, cleans up the trees and improves their appearance and condition generally, its actual effect upon scab the next season is very slight. It is apparently too early to catch the fungus in an active condition, and this fails to prevent its later development. This spray would no doubt be equally effective with the Bordeaux mixture could it be used safely as late in the season. It has, however, no advantage over the latter as a fungicide, so that each is best in its own place in the spray calendar.

Spraying for scab after the fruit sets may be dismissed with equal brevity. With some of the later varieties this may have some effect in checking the summer development of scab, and in any case the expense of adding bluestone to the codlin worm spray is so small that for the general purpose of keeping down the scab fungus in the orchard as much as possible all the year round it is advisable to make a Bordeaux mixture of the arsenical spray. This late treatment, in itself, however, has in every instance been shown to be of absolutely no effect in keeping down scab in Bartletts, in the crop of the season, and were it not for the worm-spray combination could probably be omitted with profit.

The failure of the ordinary practice of spraying with lime, sulphur and salt in winter, and arsenical Bordeaux in summer for scab control, is thus seen to come about because the former is too early and the latter too late. The present work indicates that a crop of scab develops from dormant fungous growth on the fruit spurs and twigs just as the buds open, that this infects the fruit when very young, and that the most effective spraying destroys this growth before the blossoms develop or infection takes place, rather than protecting the young fruit when formed.

The Best Way.—The following explicit directions

for spraying pears to control scab are given (to be combined in the various localities with the best known practice for codlin worm control):

1. Plow under or clean up the dead leaves in the fall as much as possible.

2. For very thorough results, spray with lime, sulphur and salt every other year as late in winter as possible.

3. Spray with Bordeaux mixture twice while the buds are unfolding, beginning the first time (with formula A) when the buds are in the second stage of development, as in Fig. 2; the second (with formula B) when as in Fig. 3, or about a week or ten days apart. Remember that the idea is to kill the scab developing on the bark as the buds swell, and not on the young pears after they have formed. For a single treatment the early Bordeaux spray is most effective.

4. Begin the spraying in large orchards as early as the second stage of bud development, as in Fig. 2, so that if delays occur the trees will get at least one spraying before it is too late. Before the first (Fig. 1), or after the fourth stage (Fig. 4), very little direct good can be done on the present year's scab by any treatment, especially with Bartletts; Fig. 5 is therefore too late for best results.

5. Add bluestone to the paris green - lime spray used against worms for general results, especially with the later varieties of pears.

FORMULAS.—Bordeaux mixture:

(A)		(B)	
Bluestone	8 pounds.	Bluestone	5 pounds.
Quicklime	10 pounds.	Quicklime	7 pounds.
Water	50 gallons.	Water	50 gallons.

Dissolve the bluestone and slake the lime in separate barrels. Strain the bluestone into the spray tank; make up to about forty gallons, then strain in the lime mixed with the remaining ten gallons of water If the two materials are mixed outside of the spray tank, each should first be well diluted. Stock solutions of bluestone, one pound to one gallon, can be kept indefinitely.

Lime, sulphur and salt:

Lime	40 pounds.
Sulphur	20 pounds.
Salt	15 pounds.
Water	60 gallons.

Slake the lime, add the other ingredients, boil from one to two hours, strain, and apply while hot. This is the usual formula, although some use considerably less of the ingredients.

A method of cooking, as follows, is also finding considerable use: Make the sulphur into a paste with hot water, place the lumps of lime in a tight cask, pour on the sulphur, and add ten or fifteen gallons of boiling water. The cask is then covered tightly with sacks and a wooden cover, and an extremely violent boiling takes place. When this begins to subside the mixture is stirred thoroughly and after all boiling stops it is strained into the spray tank, the salt having been added, with enough more boiling water to make up the required quantity. For general purposes this self-boiled mixture appears to be satisfactory and is much easier prepared than by the old method. Its comparative value as an insecticide must be left to the entomologists to decide.

Arsenical Bordeaux:

Paris green	½ to 1 pound.
Bordeaux mixture	100 gallons.

TRACK AND FARM.

Breeding Farm Horses for California.

By MR. FRANCIS T. UNDERHILL at the University Farmers' Institut eat Santa Barbara.

I propose to confine my remarks particularly to the breeding of what one might term "the general purpose horse," the animal weighing from 1100 to 1400 pounds, active, close coupled and well formed—for it would seem that this most important type of animal is not sufficiently considered by breeders in America generally, and in California particularly. California is suffering, even now, from the extremes of breeding which were introduced twenty-five or thirty years ago by the farmers who breed great, mushy Percheron stallions, with no particular quality to recommend them excepting size, to the tiny mustang mares with which the country abounded.

The Percheron is a fine animal in its way, and the mustang, with its barb origin, has many desirable qualities; but every one familiar with breeding knows that extremes must be avoided in order to produce the best results. The breeders, twenty-five years ago, looked only to the production of an animal of sufficient weight to meet the demand, and most of the breeding was done without the slightest idea of producing either a type or an animal that would be desirable for stud purposes. Of course, I except those who constantly bred thoroughbreds or trotters, as California breeders, on those lines, have done excellent work; but even they, with few exceptions, have thrown their efforts in "nicking" to the production of speed, too often sacrificing every other quality to that end. America has produced the American trotter, an animal that today is very nearly as strong in its blood lines as the English thoroughbred. Twenty years ago the average trotter was a long-bodied, slab-sided animal of very indifferent conformation. To-day you can find among standard bred trotters patterns of the highest equine type.

The late C. J. Hamlin of Buffalo was one of the first of the large breeders to appreciate the necessity for breeding for conformation in trotters, even when breeding to speed lines, and in his famous stallion Mambrino King he possessed a very beautiful example of a trotting sire. Mr. Hamlin selected all of his mares on their blood lines primarily, but he required them to have symmetry, conformation and size as well. Mr. Hamlin's successes on the trotting turf are well known, and for years the culls from his youngsters were readily sold as carriage horses at good prices, while the culls of most other breeders were such weeds as to have little value. The force of this good example has borne wonderful fruit in the past decade, most of the best trotters being fine individuals, and some of the best carriage horses in the world being standard bred trotting horses with size, substance, conformation, quality and action. And, better than all this, the average of high-class reproduction has very greatly increased.

Now, after all is said and done, this is the quality most to be desired by the breeder. I fancy I shall not be contradicted when I make the assertion that the two breeds most to be depended on to reproduce themselves to-day are the thoroughbred and the standard bred trotter.

The Clyde, the Shire, the Percheron, the hackney or the French coacher may be a fine animal in himself, may reproduce himself satisfactorily when bred on mares of his own breed, but my experience has inclined me to think that these breeds lack sufficient individuality. sufficient strength of blood, when bred on cold-blooded mares, to stamp their get as does the thoroughbred or the trotter.

The French, Belgian, Russian and other Governments have greatly benefited the horse breeding interests in their countries by the introduction of Government breeding establishments. These are in charge of the best experts obtainable, and no effort or expense is spared to secure the very best English thoroughbred blood in the sires. The result shows all through these countries in a marked degree. I have noticed particularly the French cavalry and artillery horses. They are uniform and high-class animals, of good size, and with that finish which so strongly accentuates the difference between the well-bred animal and the cold-blooded one.

The result was achieved by breeding high-class thoroughbreds on good draft mares—breeding this first offspring back to the thoroughbred, until an animal of the desired size and type was evolved, which, owing to the potency of the thoroughbred blood in its veins, was able to reproduce its type when bred to mares produced in a similar way.

The French Government has produced the French coach horse, which is practically a general purpose horse, from the original cross of thoroughbred on the sire's side and Percheron or Norman on the dam's side. Careful selection and judgment in breeding have brought this breed of horse to the point where it can be depended upon to produce a good type of general purpose or carriage horses, and its mares, when bred to the clean thoroughbred, produce cavalry horses of high quality.

Now, why is it that we Americans have not produced a general purpose horse that will breed true to type? We have, as I said before, produced an aminal almost as strong in blood as the thoroughbred or standard bred trotter. I am convinced that by breeding high-class trotters, horses built on thoroughbred lines, but with action, to selected Shire or Percheron mares we could build up a breed that would be a credit to this country. The old Vermont Morgan was produced somewhat in this way, but the breed now is practically extinct. This was a good type of animal, and if such an animal could be produced from the trotting sire of thirty years ago, how much more successful results should be realized today, owing to the intensifying of blood lines and the improvement in conformation of the trotter himself.

California is an ideal country for horse breeding, climatically, and she has vast areas of grazing land with rolling hills to make good muscle and soil sharp enough to make good feet. I personally have no use for horses bred on flat lands and fattened on alfalfa. They are good to look at, but haven't the feet, stamina or muscle to compare with the hill bred ones that have had to rustle a little for their food.

Why, therefore, should not California farmers take up the breeding of the type of horse I have suggested? It is true that it is difficult for any individual to handle such a project alone, but why not interest the United States Government? Why not get the Government to introduce a breeding establishment, and its first breeding establishment on some of its lands in this State which are well adapted for the purpose? This establishment to procure the best of sires from which to breed our own artillery and cavalry horses. These sires to be sent at times to different parts of the State where the farmer could have their services for a nominal sum. He could then afford to keep a few first-rate mares and produce a horse that would be readily marketable at a good price. This class of animals is becoming more and more scarce, and it would be a great feather in California's cap should she be the first to produce an American breed of general utility horses. The United States army to-day pays a maximum of $160 apiece for its remounts and artillery horses, and they are a wretched lot when compared with those of the French army, for example, and are a discredit to this country. The breeding of horses of their class is simply a waste of time; besides which, it is not remunerative.

This State, on the average, produces uncommonly poor general purpose horses, and this is greatly due to the haphazard system of breeding cold-blooded mares to stallions that, in far too many cases, lack breeding themselves. Every experienced breeder knows that blood is essential to consistent reproduction and that the best results are obtained by the breeders who display the most judgment in infusing that blood.

The system of breeding which I have outlined is much the same as the one pursued by breeders as early as the fourteenth century, as the balance of opinion would indicate that the English thoroughbred was produced from crosses between Arab and Barb stallions and Flemish and Norman mares—the size and substance coming from the dam and the quality, finish, endurance and speed from the sire.

In closing, I wish to state that, in my opinion, practically the only satisfactory method of establishing a good breed of general purpose horse is by breeding pure bred draft mares to first-class trotting or thoroughbred stallions and crossing and recrossing the progeny with trotting or thoroughbred stallions until the desired size and type are produced and are strong enough bred to produce itself when bred to an animal similarly bred.

The best blood is expensive and beyond the reach of the average farmer at present, but if the Government will put it within his reach, he will find horse breeding is far more lucrative business than heretofore.

I have recently written President Roosevelt urging his consideration of this question, and trust the farmers of this State will see the logic of the argument and will unite in urging our representatives in Congress to take the matter in hand.

THE IRRIGATOR.

Water Rights in California.

NUMBER VI.

Written for the PACIFIC RURAL PRESS by SAMUEL C. WIEL.

When one further decision is considered, it appears that the law of waters has taken a form that leaves the miner at a decided disadvantage in controversy with his agricultural neighbors. Not only is the miner liable if the water is taken from wells, etc., but, on the other hand, he must suffer the percolation of waste water from irrigation into his mines, and has no right of action even if it comes through in such quantities as to prevent the working of the mine. It was so held in Gibson vs. Puchta, 33 Cal. 310. The result seems to be that the miner must not take water from the farmer's land, but the farmer is not reciprocally bound to keep the water out of the miner's works.

Mr. Justice Temple's opinion in Katz vs. Walkinshaw turns on the motive with which the water is drained, and would give no action if taken in the "ordinary use of one's land." But the court in its final opinion (141 Cal. 116 at 129 discussing the case in 69 Cal. 217) says that it will be no defense to the miner that he made or wanted no use of the water, or that his works were made in the legitimate and ordinary mining of his own land, and it must certainly follow if the rule, so often repeated, that the motive with which an act is done is immaterial, is to be sustained. The actual decisions, so far, also, on their face, seem to support this view.

That the miner's motive, through which the water is drained away by percolation, will not be looked into seems, then, to have with it the tendency of the decisions. But it is by no means positively settled yet—it is one of the many phases of the new doctrine of percolating water that the case of Katz vs. Walkinshaw has thrown open, and that await decision. The wide statement that the motive with which an act is done is immaterial need not be sustained. It is giving way in other branches of the law, especially where injunctions are granted against malicious combinations in strikes and boycotts. It is inconsistent with Mr. Justice Temple's opinion in Katz vs. Walkinshaw; and it is inconsistent even with the irrigation case cited above, where the decision went on the ground that the defendant's motive arose out of the undoubted right to cultivate and irrigate his land. If the motive is looked into on one side, it should also be on the other. If the motive to make profit by cultivating and planting in the ordinary way justifies the farmer in irrigating, the motive to profit by mining in the ordinary way should justify the drainage of water naturally incident to that. Any damage which then occurs would lie where the nature of the land as mineral or agricultural makes it fall.

The difficulty if the miner is held liable will be great in showing that the acts of the miner in fact do draw off the water, since there are no signs above ground, or in plain sight, such as there

are when a surface stream is tapped by a ditch. When it comes to showing an underground connection causing the loss of percolating water from a well, it is likely that we shall have the same elaborate and indefinite discussions that have surrounded the suits to protect extralateral rights to a vein; to show an underground connection between the ore in one's shaft and the distant works of a trespasser, has always been a difficult undertaking. It may be remarked that the matter has not yet come before the Supreme Court of the United States; but there are a number of decisions in other States resembling the decision in Katz vs. Walkinshaw. They are collected in 64 L. R. A. 255 note.

2. The quality cannot be changed injuriously by later comers. As against prior appropriators or occupants, the general rule prevents any injurious change in the quality of the water. Thus, it is actionable if a later miner so muddies a stream that it cuts the hose of a hydraulic miner below, who was prior in time (27 Cal. 475). Sawdust cannot be thrown into a stream if it interferes with prior appropriators (23 Cal. 481).

Injunctions were granted in the following cases for wrongfully depositing waste in streams, plaintiff being in some cases an appropriator, in others a riparian proprietor, for both are protected from such damage: 34 Cal. 231, where waste from sluice mining interfered with a prior agriculturist; 43 Cal. 39, where tailings clogged another miner's tail-race; 67 Cal. 267, where sediment filled a prior appropriator's ditch; 19 Cal. 623, where debris clogged a prior appropriator's ditch; 57 Cal. 412, where debris from coal mining was carried far down stream and there, when the stream overflowed, covered agricultural ground. The court there said that the long distance made no more difference than if the debris had been dumped on the fields after being carried there by carts or cars. And there are numerous cases dealing specially with debris from hydraulic mining, because the sediment interfered with others. In 19 Cal. 623, 66 Cal. 138, 66 Cal. 161, 18 Fed. 753, 81 Fed. 243, 88 Fed. 664—in all these cases, and others, hydraulic mining was enjoined.

As a result of these cases, Congress has prohibited hydraulic mining, making it a misdemeanor, unless under permission from the "Debris Commission" (27 Stat. at Large 507). This prohibition is made to extend to whatever the words "hydraulic mining" or "mining by the hydraulic process" meant in California in 1893, when the act was passed. Whether it would include such things as working over tailings, or dumps, or artificial banks of earth, by water under pressure, is not clear. If one puts emphasis on the words "hydraulic process," as Judge Lindley does, then such work would be included (Lindley on Mines, 2nd Ed., Section 852, et. sq.). On the other hand, if emphasis is put on "mining," it might seem the other way; the washing of tailings is rather analogous to smelting or ore dressing, only incidentally following mining or extraction of ore. There seems an argument in saying that the act meant to hit at the principal, and not the incident when separated from it—at a kind of mining and not at a kind of process. In that case the treatment of material already mined is not, primarily, mining. Though following mining as an incident where the extraction and treatment are continuous, it is not strictly mining when the two are separated. It might not be within the act in this view, but would be left as at common law. The question seems one of emphasis in the use of the words, "mining by the hydraulic process," or "hydraulic mining."

(TO BE CONTINUED.)

SHEEP AND WOOL.

The Wool Situation.

By Mr. S. Silberman of Chicago at the recent meeting of the National Wool Growers' Association.

With regard to the wool situation, of which you expect to hear something from me, I may as well tell you that anything I might say as to the future is almost purely "guess work." You all know that at the present time the dealer has a "bull" market and no stocks to sell. I have been looking for these conditions and rise in prices for two years past, and a good many of you will recall that I have expressed this view in previous circulars, knowing in my own mind that it had to come, but it was so slow in arriving, and the dealer so weary in waiting, that when the looked for improvement really made its appearance the wool dealer was caught bare of stock on which to realize a fortune, and has to be content with a profit on his year's work which would be considered small in any other business, taking into consideration the large capital necessary to conduct a wool business.

In comparison with prices now current, the manufacturer who has a stock of wool bought early is, with this stock to work from and a substantial advance firmly established for his product, in better shape than the wool dealer, even though he cannot as yet rank with the wool producer as a dividend payer by any means.

In looking back and reviewing the wool business from the beginning of the new century, I can congratulate you on the steady improvement in prices.

In the year 1900 about half of the wool growers sold at high prices. The other half, for one cause or another, were not able or did not take advantage of the high prices early in the season, and those growers will remember that year with anything but satisfaction, while the wool dealer will not forget it as long as he lives. The year 1901 was one of low prices to the sheep man, but it was a fair year for the dealer, who was able to make up a small percentage of his losses sustained in 1900. The next year, 1902, was a good year for the grower, prices being higher, and the dealer also had a fair year, which enabled him to make up a little more of his previous losses.

The year just closed has been satisfactory to both grower and dealer. Prices paid to the grower were higher than for many years and the dealer has moved his stock to the manufacturer at a good, fair profit. If all reports I hear are true, not more than 50% of the sheep men are interested in the course of wool for some time to come. To those growers who have not contracted their coming clip of wool, I might say their judgment is correct in not contracting any wool for future delivery, as I look for much higher prices at shearing time, and my judgment is backed by every indication of prosperity and an actual shortage of wool both at home and abroad.

I do not like to see a legitimate business like the "wool business" turned into purely a speculative gamble, like it is becoming, owing to the contracting of clips now prevalent and in which nearly every house is participating. If the business continues to be done in this manner it will surely be disastrous some day to the wool grower and the dealer It is only a question of time when either one will go "broke." The wool grower sells something which he may not be able to deliver, and the wool dealer buys something for which he may not be able to raise the money at the time of delivery. All these things have to be taken into consideration, as they have happened, and you all know, in many instances, history will repeat itself, especially financial disturbances.

It is quite natural when sheep men have contracted their wool ahead at a good price that many of them will take on some other products, either buying high-priced land or buying high-priced sheep at inflated values on the prospect ahead, but yet not realized, and this may some day become very inconvenient for him, or, in plain words, may put him in a hole out of which it will take him years to recover.

Furthermore, the price of wool at present is not exceedingly high, but may go still higher, in which case he will be the loser. Again, we may have a very severe winter, and the attending elements may absorb half of the sheep, and he will not be able to deliver the quantity of wool he had contracted, and naturally, if wool should go higher, the dealer who contracted the wool will make claim for non-delivery. All of these facts have to be taken into consideration and it is our earnest belief that the wool and sheep business should be done in a more legitimate way, and not follow the Wall street fraternity. A commodity like wool should not be bought and sold like wheat, cotton or stocks on stock exchanges, which, at all times, will turn out disastrous sooner or later, and wool should only be sold after it is shorn. I am afraid such speculative business will only end in disaster, and, while I do not look for a reaction in the near future, nevertheless a reaction is bound to come, and it behooves the wool grower, dealer and manufacturer to conduct their business in a legitimate way, as heretofore.

To those among you who run sheep, producing a medium or coarse wool, let me say that it appears as if such wool will be sought after as much in the next few months as it has been in the past year, and to those among you who pin their faith to the Merino sheep let me say that fine wool will have its day, and when that day comes—when fashion calls for a fine fabric—the manufacturer will find that barely one-quarter of the sheep of the world are able to produce such wool as he needs, so great has been the change to the mutton breeds the last few years.

New Patents.

Dewey, Strong & Co.'s Scientific Press Patent Agency, 330 Market street, S. F., has official reports of the following U. S. patents issued to Pacific Coast inventors:

FOR THE WEEK ENDING JANUARY 17, 1905.

780,476.—Saw—S. J. Bens, San Francisco.
780,157.—Block Directory—G. Cadenasso, San Francisco.
780,322.—Tool Holder—M. N. Callender, San Francisco.
780,159.—Clutch—W. H. Corbett, Portland, Or.
780,031.—Concentrator—F. E. Forster, Clifton, Ariz.
780,171.—Talking Machine—F. C. Hassett, Kelso, Wash.
780,184.—Flywheel Brake—A. G. Hubbard, San Francisco.
780,038.—Pipe Grip—E. G. Huntington, Santa Ana, Cal.
780,293.—Leaching—T. B. Joseph, San Francisco.
780,211.—Axle—A. C. Massey, Los Angeles, Cal.
780,373.—Water Elevator—T. H McDonald, Elk Grove, Cal.
780,219.—Music Leaf Turner—F. B. McNamara, San Francisco.
780,212.—Can Opener—T. T. Merriman, Medford, Or.
780,127.—Aerial Cableway—J. S Rees, Loyalton, Cal.
780,228.—Stove—E. H. Richardson, Ontario, Cal.
780,232.—Saw Filing Machine—N. P. Schell, San Francisco.
780,144.—Ripper—J. K. Van Winkle, Sumpter, Or.
780,145.—Belt Conveyer—L. K. Vaughan, Oroville, Cal.
780,467.—Blast Hole Loader—W. T. Wright, Bisbee, Ariz.
39,296.—Design—N. J. Boyle, Los Angeles, Cal.

FOR THE WEEK ENDING JANUARY 24, 1905.

780,706.—Flour Sifter—O. G. & O. K. Cole, Turner, Or.
780,603.—Compound—A. M. De Solla, San Francisco.
780,784.—Lifting Mechanism—A. D. Duchow, Sonora, Cal.
780,648.—Wells—W. H. Fisher. Los Angeles, Cal.
780,654.—Potato Slicer—H. Hanson, San Francisco.
780,607.—Filter—C. R. Harris, Los Angeles, Cal.
780,659.—Animal Trap—A. A. & E. H. Hoyt, Watsonville, Cal.
780,610.—Sidewalk Elevator Door—C. G. Janson, Berkeley, Cal.
780,513.—Overshoe Holder—A. E. Lotstrom Burlington, Wash.
780,723.—Car Axles—Markkula & Rantala, Fort Bragg, Cal.
780,910.—Tub—S. J. Perry, Spokane, Wash.
780,530.—Lifting Jack—Rubottom & Clement, Felton, Cal.
780,623.—Farm Gate—T. C. Sisk, Stockton, Cal.
780,837.—Wire Stretcher—L. S. Sydenstricker, Henleyville, Cal.
780,838.—Draft Equalizer—C. H. Taylor, Wren, Or.
780,923.—Gauge—E. L. Weaver, Portland, Or.

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Agricultural Review.

Kings.

ALMOND BLOSSOMS. — Hanford Sentinel: Some almond trees in this vicinity present a very pretty appearance with their load of fragrant blossoms, a general reminder of the fact that spring is almost upon us.

HARVESTERS ORDERED.—J. W. Barbour states that orders have been given to Daniel Best Harvester Works at San Leandro to build seven complete grain harvesting machines for use in the grain fields in the Tulare lake regions in the coming harvest. The delivery will probably be made in May next. The acreage already sown in that country is reported in excess of the acreage there last season.

Lake.

A REMARKABLE TREE. — St. Helena Sentinel: Beside one of the buildings of the Glenbrook resort is an elder tree of very unusual size. One of the branches, 18 inches in diameter, was taken to the World's Fair at Chicago, and attracted much attention. Six inches above ground the tree measures 9 feet 11 inches in circumference. Four feet above ground it measures 7 feet 8 inches. The tree was about 10 years old in 1865, when S. Bassett bought out Mose Hopkins, who was living there alone and kept a stock ranch.

Los Angeles.

CITRON FACTORY. — Monrovia News: There are two kinds of citron grown on the Dr. Westlake ranch in Duarte — the Sicilian and the Corsican—practically differing only in that one has a smooth skin and the other a rough one. After the citrons are brought to the factory they are cut in halves and put in a vat of brine, where they are left for a week or ten days. They are then taken out and boiled, after which the pulp is taken out and the rinds put into tubs of sugar syrup. This syrup is very weak at first, but from time to time the citrons are changed to tubs containing syrup of greater strength. It requires several months to completely cure the fruit. When it is thoroughly cured it is taken from the syrup and glazed with a high grade of cane sugar and packed for shipment. There is only one other citron ranch in the United States besides Dr. Westlake's 20-acre ranch at Duarte. That one is situated at Riverside.

DAVIS RANCH SOLD.—Covina Argus: Ex-Supervisor A. E. Davis reports the sale this week of his home and 20-acre orange grove on Grand avenue to J. R. Laidlaw for $13,000. The grove is planted to nine-year-old, three-year-old and two-year-old trees, all of which are in perfect condition.

Mendocino.

FOUND A FRENCH FROG.—Ukiah Republican-Press: While working in his garden near Orr & Evans' planing mill Dr. McCowen found a mammoth specimen of the edible French frog. The stranger's size and peculiar coloring attracted the doctor's attention and prompted him to capture his frogship. He submitted the big fellow to Mr. Cosgrove of Hotel Cecille, who promptly pronounced the specimen of the edible variety and that it was also a remarkably fine one. The frog measured 13 inches from the tip of his nose to the end of his toes, and his smooth, peculiar colored skin was quite different to the warty, repulsive garden toad. The under part of his body resembled red granite in its coloring and possessed the shiny, polished appearance of a piece of that stone after it had been thoroughly polished. Mr. McCowen states that some twelve or fifteen years ago the late A. F. Redemeyer told him that several years before he had turned loose a number of French frogs of the edible variety in the ditch where Mr. McCowen found the one Saturday morning.

AN EXPENSIVE CHICKEN. — W. H. White, familiarly known as Bud Honey, was arrested at Willits for burglarizing Henry Bowen's hennery. Judge Kenworthy fined him $50C.

Horse Owners! Use

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Orange.

FINE STALLION. — Anaheim Gazette: The stallion bought by James McFadden of Santa Ana for $4000 is three years old and weighs 2050. It is the Percheron stallion Violon, winner of prizes and medals both in the United States and abroad.

Riverside.

PROSPECTS FOR GREAT HARVEST.—Enterprise: W. B. Johnson returned from a trip to the grain sections of Riverside county and reports great activity in that region. Gang plows of from thirty to fifty in a set are turning up furrows a mile in length preparing for putting in more grain, and the fields are looking very fine which have commenced a growth. He thinks the prospects good for one of the largest hay and grain crops ever raised in Riverside county.

COACHELLA ASPARAGUS.—Submarine: The Coachella valley is rapidly coming to the front as an asparagus growing section. Several small fields are now of bearing age and the yield is exceedingly heavy, the profits being large, running close to $1000 per acre each year. Among the chief factors favoring the growing of this succulent and profitable plant here is the entirely dewless condition of this desert oasis. Some of the heaviest growers and shippers of asparagus have turned their attention to this valley, notable among them being H. W. and W. E. Meek of Haywards, Cal., who last year shipped thirteen carloads of asparagus from northern California at a profit of $40,000, in spite of the rust and floods. Those gentlemen last January bought 160 acres of land in the Coachella valley on account of its freedom from dew and the consequent likelihood that asparagus rust can never affect asparagus here.

Sacramento.

OLD AS THE STATE.—Union: The oldest and by far the biggest cherry tree in this part, probably the biggest on the Pacific coast, was cut down the other day in Sacramento. The tree was a Black Tartarian and was planted in the lot at 612 O street in 1850 and, therefore, was fifty-four years old when it was sacrificed to the ax. The old tree was a prolific bearer in its time. It frequently brought a return of from $50 to $75 a year for its owner, Washington I. Wattwood. Last season it bore no fruit, and Mr. Wattwood concluded that it would die and decided to cut it down. The body of the tree is over 3 feet in diameter at the butt, and is in nearly perfect condition. The fifty-four rings, each representing a year's growth, are strongly marked, and a cross cut of the log would carry a high polish. It has been suggested that the Chamber of Commerce secure a block from this tree, have it polished and send it to the Lewis and Clarke Exposition at Portland—to show how trees grow in this city. It is understood that Mr. Wattwood would donate a choice cut from the big tree for the purpose named.

San Bernardino.

BEET CROP.—Chino Champion: Manager Schroeder of the sugar factory says he is well satisfied with the present prospects for a good sugar campaign at the Chino factory this year. Applications are coming in for contracts, and the prospects are that at least 6000 acres, and probably 7000 acres, will be grown for this factory. The company has planted some 300 acres of alfalfa this spring on its land south and southeast of town. This is for the purpose of building up the soil, after which it will again go into beet culture.

San Joaquin.

TABLE AND WINE GRAPES.—Stockton Record: Vine growers of this county have for many years shipped their table grapes to the East, where they were eagerly bought at remunerative prices. Slowly the area devoted to vineyards has increased, and the profits increased with the area and the volume of business. Now it is not a rare case for the enterprising vineyardist to make from $50 to $250 an acre from his grapes. The quality of the grapes is said to improve with the age of the vines, and from a small area of old vines one grower about 8 miles north of Stockton sends the product to Chicago, where he receives the highest price ever paid for grapes. Wine grapes are the greatest source of revenue, because to their culture a wider area is devoted, the crop is the largest, and the market for them is at the doors of the owners. These grapes are literally shoveled into flat cars fitted with bulkheads. It is not uncommon in the grape season to see those cars going toward El Pinal winery, a couple of miles north of Stockton, with the juice dripping from the cars under the weight of the fruit. That winery uses 10,000 tons of grapes annually, and has paid from $12.50 to $17 a ton for them. It is estimated that at the average yield and price of wine grapes for a few years a man who has a forty-acre vineyard can clear $2000 a year. There are vineyards that yield as much as seventeen tons to the acre, but the average is between six and ten tons.

MANY POTATOES RAISED IN RECLAIMED REGION. — Stockton Record: On the rich alluvial areas all manner of grain and vegetable crops are raised in prodigious quantities, but within a few years the profits of potato culture have been so tempting that the tubers have supplanted all other crops on a large proportion of the peat soil. Two crops are raised every season on these lands, and the yield is sometimes as high as 275 sacks, or 550 bushels, to the acre, against an average for the whole county of 150 sacks, or 300 bushels. The price sometimes reaches $1 per hundred pounds, but the average is 75 cents. This, it will be seen, brings the value of the yield per acre of $140 to $240 for the reclaimed area when planted to potatoes. The first crop is in the Early Rose, which is planted in February and dug in May, and the second is either the same variety for seed or the Burbank. On some fields the second crop is followed in December by barley, sown for hay, which is cut in May. This rotation crop has been found profitable and is deemed advisable as least burdensome to the soil.

Santa Barbara.

CATTLE SHIPMENT.—Press: Alonzo Crabb has returned from Mexico with 600 head of steers bought for the San Marcos range. The cattle were secured within 50 miles of Chihuahua, Mexico, and were shipped through to Ellwood, a station or sidetrack west of Goleta, where they will be unloaded and driven over the mountain onto the range. Mr. Crabb reports a detention of eight days at the Mexican border on account of Federal inspection of the shipment. The consignment came through in good condition.

Santa Cruz.

CODLIN MOTH PARASITE LIBERATED IN PAJARO.—San Jose Mercury: Edward M. Ehrhorn, Deputy State Horticultural Commissioner, a few days ago went to Watsonville and took with him a colony of codlin moth parasites, which were liberated in the Corralitos section. This is the first colony of the little creatures liberated in the United States, and it is hoped that they may thrive. The female fly flits about over the bark of a tree with her antennæ and is enabled to locate accurately, through sense of smell or otherwise, the codlin worm, which is hidden under the bark of the tree. Then with her sword-like appendage she pierces the bark and stabs to death the worm, at the same time depositing in the wound the eggs that will later produce other codlin moth destroyers. The Pajaro and Santa Clara valleys are fortunate in securing the first colony of these parasites. Mr. Ehrhorn and his associates will keep in touch with the progress of the parasites and at the same time make distributions to other parts of the State as rapidly as conditions will warrant.



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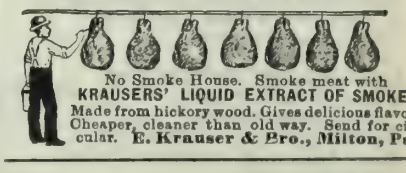
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The Home Circle.

St. Valentine's Day.

While Cupid, his arrows and bow flung aside,
Was sleeping one morn 'neath a tree,
It happened that Malice was passing close by,
And, seeing the weapons, he came up quite sly,
And, seeing them, ran off in glee.

In horror and grief Cupid woke up to find
His love-giving arrows all gone.
Bewailing and weeping, he hunted each place.
On swift-speeding wings he continued his chase
Each day, from the earliest dawn.

But vain were his searches, alas! and he soon
Began to grow pallid and pine,
When one frosty morning in February, lo!
An old man approached with a sheath and a bow,
Who proved to be Saint Valentine.

"Here, child, are thy weapons I rescued at last
From Malice with all might and main.
The hearts of the people are passive and cold,
Go pierce with thy arrows the young and the old,
That love's flame may kindle again."

Then Cupid grew happy and active once more.
His shafts flew in numbers away,
Love greetings and tokens and pledges went round,
By ties deep and tender all hearts became bound:
And this was St. Valentine's Day.

—Martha Martin.

On Valentine's Day.

Lock your heart up well to-day,
There's a rascal thief about;
Throw the precious key away
If you'd keep him out.

He's a master of deceit,
He's a flatterer, and so
He will call you all that's sweet—
Which you are, I know.

All his tricks and wiles he'll try,
Tempting you as best he can,
He is such a shrewd and sly,
Clever little man.

Hidden in his burglar's kit,
Well he knows that safe in there
Is the very key to fit—
Sweetheart, have a care!

Yet I may as well confess;
Love is what he calls this key,
And his name is Cupid — yes,
And he comes from me.

—Frank Dempster Sherman.

"Widow's Mite."

A widow—she had only one,
A puny and decrepit on;
But, day and night,
Though fretful oft, and weak and small,
A loving child, he was her all—
The widow's mite.

The widow's mite—aye, so sustained,
She battled onward, nor complained,
Though friends were fewer;
And while she toiled for daily fare,
A little crutch upon the stair
Was music to her.

I saw her then; and now I see
That, though resigned and cheerful, she
Has sorrow much;
She has—He gave it tenderly—
Much faith; and, carefully laid by,
A little crutch.

—Frederick Locker.

Beauty and the Beast.

It was an exceedingly small dog, but its ferocity was almost alarming. As Wistrom passed the house with the stone front it darted out from the side passageway in a perfect fury of angry excitement and pursued him with paroxysmal barkings the entire length of the low fence that separated the lawn from the street.

A day or two later the same thing occurred. This time Wistrom made a threatening demonstration with his umbrella. It was an unwise thing to do, for it did not have a soothing effect on the little animal, which from that time forth seemed to lie in wait for the young man, who lived only a few doors away. The moment he came in sight that brown, hairy streak would shoot from the passage, leap at him, all but scaling the tiny pickets, and raise such a clamor of hatred that it seemed the whole street must be alarmed. Wistrom became more and more resentful. The dog got on his nerves.

One morning as Wistrom started out he noticed that the front gate of the house with the stone front had been left open. He gripped his umbrella tightly and took a deep breath as he heard the preliminary yelp of defiance at the passage entry. The next moment the dog was at the fence and the next he had discovered the open gate, and was out on the sidewalk at Wistrom's heels. Wistrom stopped. The dog retreated, still barking furiously; he went on and the dog was again yapping at his heels. Then, without turning, Wistrom brought his umbrella around with vicious force and —oh, joy! —caught the dog on the ribs.

* * * * * *

"Oh, you coward!"

It was a clear, youthful feminine voice. Wistrom looked up as the house door slammed and a girl with very pink cheeks and abundant yellow hair— a very pretty girl—came running down the steps and caught up the howling dog in her arms.

"How could you be so cruel as to hit a poor little dog like that!" she demanded, turning an indignant pair of very blue eyes on Wistrom.

"I—I didn't exactly mean to hit him so hard," lied Wistrom in some confusion. "You see—"

But the girl turned her back on him contemptuously and ran up the steps and into the house, carrying her pet with her.

It was a remarkable thing, but Wistrom instantly regretted hitting the dog.

All day long he thought of the girl with the blue eyes and yellow hair, and the more he thought of her the more poignant became his regret. After all, on eminent authority, it was the nature and delight of dogs to bark and bite, and why should they be struck with an umbrella for following a purely natural impulse?

For weeks Wistrom looked in vain at the house as he passed for some sign of the pretty girl. He did not even see the dog. On Sundays, when he was at home all day, he did nothing but sit by the window watching to see her. Some time soon, he thought, the chance would come, and then—

It came at last, that chance. Wistrom was walking down an obscure street one afternoon when he saw a forlorn and mud-caked little dog that was shivering and whining disconsolately in the shelter of a doorway. There was something familiar about that dog, Wistrom thought, and he stopped to look at it more attentively. Yes, it was certainly the dog. If there had been any doubt about it, the way he snarled and snapped when Wistrom stooped to pick him up would have instantly dispelled it. Undoubtedly the dog had strayed away.

* * * * * *

Well, muddy and wet as he was, Wistrom stowed him underneath his coat, to the coat's and a white waistcoat's ruin, and half an hour later he was ringing the bell of the house with the stone front. An elderly woman answered the ring, and went into ecstasies of delight at the sight of the dog. It was quite a touching reunion. She—the elderly lady— was the most grateful to Wistrom, too, and so pleased to learn that he was a neighbor. The poor dog, she explained, had been confined to the house in consequence of a ruffianly young hoodlum having abused him, and on being let out for exercise had scampered off.

Wistrom coughed behind his hand. "Your daughter will, no doubt, be glad to see her pet again," he said, politely.

"My daughter?"

"I—er—supposed the young lady to be your daughter," said Wistrom. "A rather tall young lady, with blue eyes—

"Oh," said the lady of the house, "that was my niece, who was making me a visit a few weeks ago. She went back to Dubuque and was married last Thursday. A lovely girl!"

* * * * * *

Rags was growling at his rescuer. And the next morning as Wistrom passed he ran out and barked at him as savagely as ever.

Proper Food and Feeding.

The amount of advice we have had concerning what to eat and what not to eat would fill a book. If we eat bolted flour we may expect dyspepsia; if we eat meat look out for lithemia; in pork trichiniasis may be in hiding, and in richest milk the feverish bacilli is doubtless sporting.

And there is much in what we eat, much that concerns our health and strength, but there is much in the way we eat it. It is well to look out for germs, but the most virulent cannot stand a bath in good, healthy gastric juice. It is necessary that germs come, one way or another, but let it be woe unto them when they strike the gastric membrane.

Children nowadays are trained to do most everything that is useless and expensive. Let us train them to chew, to eat and drink slowly.

A glass of milk swallowed at a gulp is to revert to the way of the ostrich, and to invite indigestion and feed bacteria, but to sip it slowly and leisurely is to make the warm, rich blood and the strong, throbbing heart.

Slow eaters are small eaters, because hunger is appeased physiologically through the nervous system. Lots of people never eat, properly speaking; they simply fill up. The delicate nerves of the stomach, which would tell us of hunger appeased, are overwhelmed and stunned by the deluge of drink and the rain of half-masticated food. So they lie silent, and the nerves of ordinary sensation give the signal when we begin to crowd our diaphragm up about the collar bone, and we stop, not because we have enough, but because we are loaded and another mouthful might explode up.

It has been shown experimentally that it is very hard to infect a healthy animal by way of the alimentary tract, though it be fed upon the most virulent of the pathogenic germs.

It is next to impossible to avoid drinking at some time or other the typhoid bacilli, but we can do much towards improving the condition of the digestive organs.

How many of us take a glass of water in one stream, and yet even a horse takes time to drink.

Proper eating and drinking will go far towards rendering harmless many of the bacteria that threaten our life on every side.

There is something in what we eat and drink, but there is a great deal in the way we eat and drink it.—Health.

Giving Clothes.

There are two ways of giving away old things—a moral and immoral. Those who are guilty of the latter are the people who use the poor as a sort of garbage barrel—something in which to dump everything that is useless. They are the people who give to their washerwoman old ball frocks and soiled white satin slippers and things too ragged for any human being to make use of. They are the people—it seems incredible, but it is true—who carefully cut off all the buttons on any garment that is to be given away and never think of mending anything. With such persons giving is not a virtue, but a convenience. They feel they can rid themselves of much rubbish and yet obtain a reputation for charity. A ray of illumination on this subject was obtained by one woman on seeing a busy house mother darning some old stockings.

"I must get these finished," said the latter. "I want to send them to Mrs. (mentioning a pensioner) to-day."

"You don't mean to say you darn the stockings you give away!" exclaimed the visitor.

"Why, of course I do," was the reply. "They are generally too busy or too careless to do it themselves."

Cheap Shoes a Poor Economy.

"Give your shoes a rest," is the mandate issued by a man who has grown up among shoes and knows them as he does people. "Shoes need a rest as the wearers do. This may strike you as peculiar and you may imagine I am stretching a point to make a good story, but it's a fact. Shoes require rest. In that way they will last twice as long and always look more than twice as well. It enables them to air out—and to regain their shapeliness, says the New York Telegram.

"Everybody should have at least two pairs of shoes. You should change your shoes as you do your undergarments. There should be a pair of shoes for dress occasions, another for business or shopping, others for sports, and it is quite essential there should be storm boots—kept for this special purpose.

"A week is plenty long enough for a pair of shoes to be worn at one time; a day is better.

"Men for a long time have known the value of shoe trees. It is quite recently that women have taken to them. Femininity is gradually being educated to the notion that the life of a pair of shoes is doubled by use of a shoe tree. The latter is to a pair of shoes what a tailor's goose is to a man's clothes. It restores the appearance of newness.

"Shoe trees are your exact last, or should be, so as to retain almost identically the correct shape of the shoes. If the shoes when taken from the feet are damp with perspiration, the leather in the lining dries out more rapidly. If worn out before it is thoroughly dried, the lining will soon decay.

"Enamel and patent leathers, because of their air-tight characteristics, require more care than ordinary leather in this respect. If it so happen that your shoes become wet, great care should be exercised in drying them. Never dry them on a radiator or a stove or in the oven. Dry in a warm room, or at an open window.

"In the old days our grandfathers greased their boots to keep the leather in good condition. A much better quality of leather is used to-day, and the method of preparing it is very different. However, some dressing on a shoe is needed to keep it pliable and soft. But care should be taken to get the best. No shoe can do its best work when burned up daily with poor dressings frequently used at shoe-shining stands. Plain vaseline rubbed on with a cloth is better than nothing, but the proper way is to procure a dressing at a reliable house and then you can feel safe in using it.

"It is poor economy to buy a cheap shoe. The material is not there, neither is the fit.

"Ill fitting shoes wear out in about half the time that a perfect fitting pair will. If too tight it causes the leather to shrink, and if too loose there will be wrinkles and eventually cracks.

"Always remove your shoes the moment you come into the house. Walking up and down stairs ruins a pair of shoes quicker than walking miles on the pavement. Slippers are all right for the privacy of one's own apartment, but they are bad for the feet if worn too constantly. Particularly is this so if one happens to have weak ankles. Better a soft kid boot with a hand-turned sole. As to rubbers, it is better to wear them, and if necessary often, though they are bad on shoes, drawing them out of shape and permanently softening the leather. But while some women can wear heavy storm boots, others cannot, so each case will have to be judged separately.

"Unlacing the ties or shoes at night very wide is good. It changes the lace and prevents unshapeliness. These are the shoe 'dont's,' and although there are many others, if a woman follows the rules laid down here she will have the satisfaction of keeping her shoes twice as long. They will look fresh longer and last longer than without the care. It will be found not only to be an economical method, but will do more to give her a trim appearance than anything else."

Waiting.

Serene I fold my hands and wait,
Nor care for wind, or tide or sea.
I rave no more 'gainst time or fate,
For lo! my own shall come to me.

I stay my haste, I make delays,
For what avails this eager pace?
I stand amid the eternal ways,
And what is mine shall know my face.

Asleep, awake, by night or day,
The friends I seek are seeking me,
No wind can drive my bark astray,
Nor change the tide of destiny.

What matter if I stand alone?
I wait with joy the coming years;
My heart shall reap where it has sown,
And garner up its fruit of tears.

The waters know their own, and draw
The brooks that spring in yonder heights,
So flows the good with equal law,
Unto the soul of pure delight.

The stars come nightly to the sky,
The tidal wave unto the sea,
Nor time, nor space, nor deep, nor high
Can keep my own away from me.

—John Burroughs.

Domestic Hints.

CORN PUFFS.—To the contents of one can of corn, add separately the beaten yolks and whites of four eggs and mix gently, add a little salt and cayenne pepper and just enough flour to mix well. Drop in spoonfuls into a buttered frying-pan and fry. Serve very hot.

PRUNE MARMALADE.—Take six fine, large cooking apples, pare, plunge in cold water, then put over the fire together with the juice of two lemons and a half pound of sugar. When stewed, split and stone two and a half pounds of prunes and stew with the apples, taking care that there is sufficient water to keep them from burning. When thoroughly cooked, beat it through a strainer and turn into jars to keep for use.

OLD FASHIONED JUMBLES.—Half a pound of butter, nine ounces of flour, one teaspoonful of vanilla, half a pound of powdered sugar, two tablespoonfuls of sherry and three eggs. Beat the butter to a cream; add the sugar gradually, beating until very light. Now beat the eggs all together, add the butter and sugar, the sherry and vanilla, and then the flour, sifted. Beat the whole well. Drop in spoonfuls on a lightly buttered pan and bake in a moderate oven.

MEAT PIE.—An old way of making "English meat pie" is to take finely chopped cold beef, put in a deep baking dish a layer of the meat, stew lightly with breadcrumbs, season highly with salt, pepper, butter and a few drops of onion juice; repeat the process till the dish is full or your meat used up. Pour over it a cup of stock or gravy, or, lacking these, hot water with a teaspoonful of butter melted in it; on top a good layer of breadcrumbs should be put and seasoned and dotted with butter. Cover and bake half an hour; remove the cover and brown.

APPLE TAPIOCA PUDDING.—Six apples pared and cored, one cupful of sugar, one cupful of tapioca, four cupfuls of warm water, one teaspoonful of salt, one teaspoonful of lemon extract and one teaspoonful of grated nutmeg. Wash the tapioca in several waters, then put it into three cupfuls of warm water with the salt. Let stand on the back of the stove for three hours, where it will keep warm, stirring frequently. Place the apples in a deep dish and sprinkle over the sugar, lemon extract and grated nutmeg, then pour over the remaining cup of water. Cover closely and steam in a moderate oven until soft all through. Remove from the oven, pour over the tapioca and bake one hour. Serve cold with sugar and cream.

POTATO SOUFFLE.—Boil four good-sized mealy potatoes, pass them through a sieve; scald in a saucepan half a teacup of sweet milk and a tablespoonful of butter, add to the potato with a little salt and pepper, and beat to a cream; add one at a time the yolks of four eggs, beaten thoroughly; put a small pinch of salt into the whites and beat them to a stiff froth, then add them to the mixture, beating as little as possible; have ready a well-buttered baking-dish, large enough to permit the souffle to rise without running over; bake twenty minutes in a brisk oven, serve at once in the same dish in which it was baked. It is nice to serve with meats that have gravies.

A Clever Boy.

Near the end of the season our boy announced the height of our tall maple tree to be 33 feet.

"Why, how do you know?" was the general question.

"Measured it."

"How?"

"Foot rule and yard stick."

"You didn't climb that tall tree?" his mother asked, anxiously.

"No'm; I just found the length of the shadow and measured that."

"But the length of the shadow changes."

"Yes'm; but twice a day the shadows are just as long as the things themselves. I've been trying it all summer. I drove a stick into the ground and when its shadow was just as long as the stick I knew that the shadow of the tree would be just as long as the tree, and that's 33 feet."

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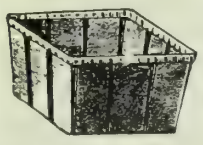
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The Markets.

San Francisco Produce Report.

San Francisco, February 8, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 15⅛@1 16⅜	98⅝@99
Thursday	1 15⅜@1 17	98⅞@99⅝
Friday	1 17@1 18⅜	99⅝@1 00⅝
Saturday	1 16@1 17⅜	1 00⅛@1 02
Monday	1 17⅝@1 18⅜	1 02⅜@1 01⅛
Tuesday	1 16¼@1 17	1 01⅛@1 02

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	45⅛@44⅝	45⅝@45⅛
Thursday	44⅝@44⅞	—@—
Friday	44⅞@—	45⅜@—
Saturday	44⅞@45½	45⅜@46
Monday	45½@45¼	46⅛@45⅜
Tuesday	45 @45¼	45⅜@46¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 51⅛@1 52½	$1 30¾@1 29½
Friday	1 52 @1 50¼	1 29¾@1 30
Saturday	1 52¾@1 52¼	1 30¼@1 30¼
Monday	—@—	1 29⅞@1 29⅜
Tuesday	1 52 @1 51½	1 29⅜@1 29⅛
Wednesday	1 51⅛@1 49¾	1 29⅜@1 29¼

Wheat.

The local market continues unfavorable to buyers, with offerings light, especially of choice to select wheat, desirable for milling. The latter is the kind most urgently sought after and for which the market shows the most strength. The harbor is bare of engaged tonnage for grain loading and is apt to so continue until the new season opens. Present freight rates on grain to Europe are nominally 10s to 12s 6d, with neither exporters nor ship owners inclined to do business. For new crop loading 20s is asked, but there is no chartering ahead, so far as known. Shippers have had some unprofitable experience in this line and are not disposed to take chances. There is now no wheat to spare in this State for export, and little to spare in the United States. If there was any great surplus, prices would be lower. Wheat is going from Australia on European account at about $1.35 per cental, and from Argentina at about $1.28. The latter is of lower grade than the California product, but Australian wheat is fully as good as the grain grown in this State.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.52½@1.49¾.
December, 1905, delivery, $1 30¾@1.29¼.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.51⅜@1.49¾; December, 1905, $1.29¾@1.29¼.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@—s	10@12½s
Local market	$1 35@1 40	$1 42½@1 47½

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on Jan. 1 and Feb. 1:

Tons.	Jan. 1.	Feb. 1.
Wheat	46,280	*32,101
Barley	21,998	†19,264
Oats	3,254	3,604
Corn	431	227

*Including 12,022 tons at Port Costa, 19,408 tons at Stockton.
†Including 11,016 tons at Port Costa, 6032 tons at Stockton.

Stocks of wheat in near-by warehouses on the 1st inst. show a decrease of 14,179 tons for the month of January. A year ago there were 41,328 tons of wheat in near-by warehouses.

Flour.

Market is moderately firm for good to choice flour of recent make, stocks being rather light. Trade is not brisk, however, either export or local. Recent shipments to Asia have been much below the average, and the movement to Central and South American countries for some months past has been rather light.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Offerings of this cereal are of quite limited proportions, especially of No. 1 to choice feed, suitable for delivery on contracts, and the market shows much the same firm tone as for some weeks preceding. On account of the war in the Far East there has been considerable demand for California barley, several cargoes having already gone forward and more is to follow. Purchases for shipment are being made largely in the interior, and in some instances at relatively stiffer prices than are quotable here. An increased acreage in barley is reported in most sections of the State this season, and crop prospects at this date could not well be better. The speculative market for new No. 1 feed, December delivery, is close to the 92½c. point.

Feed, No. 1 to choice	$1 20 @1 21¼
Feed, fair to good	1 17½@1 18¾
Brewing, No. 1 to choice	1 22½@1 25
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

Values show little quotable change, but market is firm at ruling rates. Offerings are largely ordinary feed qualities from Oregon and Washington. There have been no large quantities of high grade oats on the market any time the current season. Stocks of oats in local warehouses on the 1st inst. were 3,604 tons and a year ago were 3,114 tons.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

Market is tolerably well stocked with Eastern, straight and mixed, but this corn is being rather steadily held, as it could not be replaced at present cost. A special freight rate has been made on corn from the Middle West to the Atlantic seaboard, and the primary markets show improvement in consequence. Not much California corn of any sort now in stock here.

Large White, good to choice	$1 25 @1 30
Large Yellow	1 27½@1 32½
Small Yellow	1 60 @1 75
Egyptian White	—@—
Egyptian Brown	—@—
Eastern, sacked	1 25 @1 30

Rye.

Supplies are light and market is unfavorable to buyers.

Good to choice	$1 47½@1 52½

Buckwheat.

In the absence of noteworthy offerings, values are poorly defined.

Good to choice	$1 75 @2 00

Beans.

There is a moderate amount of business doing, and for good to choice white and colored beans the market is firm at prevailing values. Off qualities go at less than quotations. Speculative operators have been talking weak on Limas, owing to good prospects for next crop, but current figures are being well maintained.

Pea, fair to good, 100 lbs	$2 90 @3 10
Small White, good to choice	3 15 @3 40
Large White	2 35 @2 60
Pinks	3 00 @3 50
Bayos, good to choice	2 50 @3 00
Red Kidneys	4 50 @5 00
Reds	4 00 @4 50
Limas, good to choice	3 75 @4 00
Black-eye Beans	2 50 @2 65

Dried Peas.

Little doing in dried peas of any kind. Choice are scarce and could be readily placed. Damaged stock drags.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

No evidence of much doing in the local market. Offerings are not heavy, and to buy freely, full current quotations or more would have to be paid, while if selling pressure was exerted, concessions to buyers would be necessary. Eastern and foreign markets are reported generally quiet and rather easy in tone. A sailing vessel clearing from this port on Saturday last took 50 bales for Sydney, and a lot of about same size went forward by last steamer for Melbourne.

California, good to choice, 1904 crop	27 @30

Wool.

The market in this center continues practically bare of offerings from first hands, leaving little or nothing for the time being upon which to base quotations. Figures below named are fully in accord with values realized on latest reported transfers. Fully 50 per cent. of the year's clip of the Territories is reported already contracted for. Eastern operators are now in Arizona, where the Spring season is about opening. In New Mexico some wool has been contracted for at 21c.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	21 @23
Middle County, defective	18 @20
San Joaquin and Southern, free	16 @18
San Joaquin and Southern, defective	14 @16
Southern lambs, as to quality	13 @17
Oregon, good to choice	21 @24
Nevada	17 @22

Hay and Straw.

Offerings of hay of nearly all grades are greatly in excess of the demand and market is in the main weak at the quotations. An occasional lot of strictly fancy hay goes at slightly higher figures than below noted. Receipts of Straw are not heavy, but are ample for current needs.

Wheat, good to choice	$11 00 @ 14 00
Wheat and Oat	9 50 @ 12 00
Tame Oat, fair to choice	9 00 @ 11 50
Wild Oat	8 00 @ 10 00
Barley	7 00 @ 10 00
Alfalfa	8 00 @ 10 50
Clover	7 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 14 00
Straw, ₱ bale	35 @ 55

Millstuffs.

Values and the general condition of the market have not changed materially since last review. Most kinds of mill feed are being very steadily held. Prices for Milled Corn have tended slightly in favor of buyers.

Bran, ₱ ton	$20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 00 @ 26 00
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	—@—

Seeds.

Not much doing in this department. Stocks of most kinds are too light to admit of other than small jobbing operations. In quotable values there are no changes to record.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13½
Canary	6½@ 6¾
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Market is quiet and easy in tone, especially for Amber grades, stocks of which are fairly liberal, and include several lots of Hawaiian Island product. There is not much strictly choice Water White honey offering.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Values are steady. There is a fair inquiry, both for shipment and on local account.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Beef is in good supply and a large percentage is showing unusually fine quality for this time of year. Veal is in moderate receipt and in fair request at quotably unchanged values. Mutton is in sufficient stock for current needs. Spring Lamb in quotable quantity is looked for soon. Small sales have been made at 12½c. Hogs continue in light receipt and medium sizes are in active request.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6 @ 6½
Beef, 2nd quality	5½@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5¾@—
Hogs, large, hard, over 200 pounds	5 @ 5¼
Hogs, small, fat	5 @ 5¾
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	7 @ 9
Lamb, ₱ lb	8½@ 9

Hides, Skins and Tallow.

There is a good demand at full current figures for Hides and Pelts in prime condition. Considerable Tallow is being shipped to Central America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@10	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@10	—@ 9
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@ 12½	—@11½
Dry Hides	17½@18	16½@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@1 75	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 50@—	
Horse Hides, salted, small	2 00@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3½	

Bags and Bagging.

Market is quiet, as is generally the case at this time of year. Grain Bags are being firmly held. Calcuttas cannot now be laid down under 5¾c in a wholesale way.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@6
Grain Bags, Calcutta, buyer June-July	6 @6¼
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼lb	30 @—

Poultry.

California poultry was in rather light receipt most of the week, but there were tolerably heavy arrivals of Eastern. Market was hardly so firm as previous week, but quotable values were without material change. Choice young stock was in good request at prevailing values. The tendency of the market against sellers was mainly on common old fowls.

Turkeys, Dressed, choice, ₱ lb	$ 20 @ 23
Turkeys, live gobblers, ₱ lb	19 @ 21
Turkeys, live hens ₱ lb	19 @ 21
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 6 50
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	6 00 @ 6 50
Fryers	5 50 @ 6 00
Broilers, large	3 50 @ 4 00
Broilers, small to medium	3 00 @ 3 50
Ducks, old, ₱ dozen	5 00 @ 5 50
Ducks, large young, ₱ dozen	6 00 @ 7 00
Geese, ₱ pair	1 75 @ 2 25
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 00 @ 1 25
Pigeons, young	2 00 @ 2 50

Butter.

There were no pronounced changes in quotable values, but an easier tone to the market for the higher grades of fresh, which were in more liberal supply, as compared with the demand, than was low priced butter. There was active inquiry from the East, largely for common stock and at generally lower figures than holders were inclined to accept.

Creamery, extras, ₱ lb	27 @—
Creamery, firsts	25 @26
Creamery, seconds	23 @25
Dairy, select	25 @26
Dairy, firsts	23 @24
Dairy, seconds	20 @21
Mixed Store	14 @15

Cheese.

Desirable qualities of domestic are not in heavy stock and are in fair request, current values on offerings of this description being tolerably well maintained. Small cheese are in only moderate supply, but stocks are more than sufficient for the immediate somewhat limited demand.

California, fancy flat, new	13 @—
California, good to choice	10½@11½
California, fair to good	10 @10½
California, "Young Americas"	10 @12½
Eastern	14 @15

Eggs.

Supplies were not heavy, but were larger of hennery product than of store-gathered. All the eggs now coming forward are showing good quality, and with cold storage stocks practically exhausted, the most active inquiry is for the cheapest fresh, causing a very narrow range in prices.

California, select, large, white and fresh	26 @—
California, select, irregular color & size	24 @25
California, good to choice store	24 @25
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Fresh vegetables of desirable quality were not in large receipt and met in the main with a good market. Natural growth Asparagus sold in a small way at 50c. per lb. Onions were in decreased supply and were more firmly held.

Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	8 @ 12½
Beans, Wax, ₱ lb	8 @ 12½
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ₱ lb	10 @ 12½
Garlic, ₱ lb	8 @ 10
Mushrooms, ₱ lb	8 @ 15
Onions, Yellow Danver, ₱ ctl	2 60 @ 2 75
Peas, Green, ₱ lb	4 @ 6
Peppers, Bell, ₱ lb	10 @ 12½
Peppers, Green, ₱ lb	4 @ 7
Rhubarb, ₱ lb	4 @ 7
Summer Squash, Los Ang., small b'x	75 @ 1 00
Tomatoes, ₱ box	1 00 @ 1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

There were liberal stocks of common qualities of potatoes and for these the market was slow and weak. Demand was mainly for choice to fancy, and for offerings of this description the market was fully as favorable to the selling interest as for some weeks preceding. Sweets were plentiful and prices at a rather low range.

Early Rose, ₱ cental	1 35 @ 1 50
Salinas Burbanks, ₱ cental	1 00 @ 1 50
River Burbanks, ₱ cental	65 @ 90
River Reds, ₱ cental	65 @ 75
Oregon Burbanks, ₱ cental	1 00 @ 1 30
Sweet Potatoes, ₱ cental	65 @ 1 00

Fresh Fruits.

Market was heavily stocked with Apples of common quality and concessions to buyers were of frequent occurrence on fruit of this description, the quotable range remaining about as last noted. Choice to select Newtown Pippins and Spitzenberg were not plentiful and brought good prices, strictly fancy being quotable up to $2 per box. Some Grapes, packed in ground cork, arrived from Spain.

Apples, fancy, ₱ 50-box	1 50 @ 2 00
Apples, good to choice, 50-lb. box	1 00 @ 1 25
Apples, fair to good, ₱ box	75 @ 1 00
Apples, Lady, ₱ box	— @ —
Persimmons, ₱ regular box	— @ —
Strawberries, large, ₱ chest	— @ —

Dried Fruits.

The market for dried and evaporated fruits shows much the same general condition as noted a week ago. Supplies of most kinds are of quite moderate volume

and there is a generally firm tone, the only noteworthy exception being on Prunes of the middle sizes, which are still in tolerably heavy stock, but are being as a rule held steadily at prevailing values. Apricots and Peaches are in limited supply. High grade Pears are nearly out of stock. Choice Evaporated Apples are being offered sparingly. The steamer Sonoma, sailing the past week, carried 52,000 lbs. dried fruit, exclusive of Raisins, and including 20,900 lbs. Prunes. The shipment included for New Zealand 6,000 lbs. Apricots, 4,030 lbs. Peaches, 3,200 lbs. Apples. The steamer Senator, bound for British Columbia, took 24,700 lbs. dried fruit, including 18,320 lbs. Prunes.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4 @ 4½
Apples, extra choice to fancy, 50-lb boxes	5½@ 6
Apricots, Moorpark	9 @11½
Apricots, Royal, good to choice, ℔ lb	7½@ 8½
Apricots, Royal, fancy	9 @10
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1¼@1¾c; 40-50s, 4@4¼c 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Values are ruling steady. Stocks are largely of the lower grades. The steamer Sonoma, sailing the past week, carried 40,000 pounds for Australia and New Zealand. Moderate quantities are going outward by rail to Eastern points.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2 crown, 20-lb box	85 @——
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4 crown, 20-lb box	—— @1 30
Dehesas, 20-lb box	—— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3¾c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Market for Oranges showed more activity, weather conditions being more favorable for trade in this fruit, but stocks were of quite liberal proportions, and for the general run of offerings there was an easy tone. Medium and small sizes of Navels received the most attention. Lemon market ruled quiet at quotably unchanged values; inquiry which existed was mainly for best qualities. Fancy Grape Fruit met with a moderately firm market. Limes were in limited stock and very steadily held.

Oranges, Navels, ℔ box	1 25 @2 00
Oranges, Blood, ℔ box	85 @1 15
Oranges, Seedlings, ℔ box	85 @1 10
Oranges, Cal. Tangerines, half box	75 @1 10
Oranges, Japanese Mandarins, ℔ box	75 @1 00
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 25 @2 00
Limes, Mexican, ℔ box	4 50 @5 00

Nuts.

Business is mainly of a light jobbing character and at generally unchanged prices. Offerings of both Almonds and Walnuts are light and mostly under choice.

Chestnuts, Italian, ℔ lb	7 @ 9
Nonpareil Almonds	14 @16
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	6 @ 7
Cal Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

Not much doing in the way of transfers of dry wines from first hands. One lot of 15,000 gallons last year's vintage was sold at 17c per gallon, delivered in San Francisco. This is choice Northern wine, and the figure named may be considered a quotable extreme of the present market, prices ranging down to 14c for fairly good. Sweet wines of 1904 are quoted at 25c, winery delivery. The steamer San Juan, sailing 4th inst, carried 23,843 gallons and 138 cases, mostly for New York. Receipts last week were 509,250 gallons, and for previous week 389,150 gallons. Receipts for month of January were 1,671,475 gallons, and for January last year were 1,567,550 gallons.

Incubator Agency.

The Cyphers Incubator Co. of Buffalo, N. Y., has established a San Francisco agency, with office and salesroom at 329 Sansome street. A large and handsomely illustrated catalogue will soon be ready for distribution to those who write to this agency for it, mentioning the PACIFIC RURAL PRESS.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	63,319	2,916,169	3,609,075
Wheat, ctls	89,212	2,145,034	1,594,143
Barley, ctls	122,238	2,632,013	4,638,635
Oats, ctls	18,871	679,001	722,456
Corn, ctls	11,075	142,233	106,997
Rye, ctls	565	39,441	39,348
Beans, sks	11,303	467,460	565,172
Potatoes, sks	27,781	861,163	881,149
Onions, sks	5,470	95,430	108,770
Hay, tons	4,568	122,219	120,189
Wool, bales	60	40,180	35,069
Hops, bales	842	35,611	28,179

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904	Same time last year.
Flour, ¼ sk	47,952	2,109,256	2,469,108
Wheat, ctls	62,902	799,477	739,368
Barley, ctls	93,600	1,672,433	3,652,196
Oats, ctls	2,031	50,575	15,801
Corn, ctls	203	67,041	12,251
Beans, sks	388	40,243	31,177
Hay, bales	41,832	172,753	110,783
Wool, lbs	....	830,690	1,848,923
Hops, lbs	3,466	277,868	524,249
Honey, cases	59	1,507	4,017
Potatoes, pkgs	5,440	70,623	72,276

HEADED BARLEY IN JANUARY.—Modesto News, Feb. 3: G. W. Davis, who resides seven miles from La Grange, Saturday sent in a package containing ten or a dozen stalks of barley, fully headed out, a very unusual thing at this time of the year. Mr. Davis picked the barley on his ranch on the 25th day of last month. This makes the second instance of this kind that has been reported within the past few days, making this season a peculiar one in more respects than one, as the California poppies and other flowers which do not usually make their appearance in winter have been blooming in the fields about Modesto during the entire winter.

THE John A. Salzer Seed Co., La Crosse, Wis., offer among their new money making vegetables an earliest green eating onion. They say "just send this notice and 16c." and they will send you their plant and seed catalogue, together with enough seed to grow 1000 fine, solid cabbages, 2000 rich, juicy turnips, 2000 blanching, nutty celery, 2000 rich, buttery lettuce, 1000 splendid onions, 1000 rare, luscious radishes, 1000 gloriously brilliant flowers—in all over 10,000 plants—to get you to test their warranted vegetable seeds, and all for but 16c. postage, provided you will return this notice, and, they say if you will send them 26c. in postage, they will add to the above a big package of Salzer's Fourth of July sweet corn—the earliest on earth—10 days earlier than Cory, Peep o' Day, First of All, etc.

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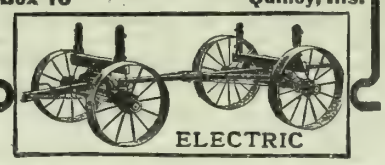
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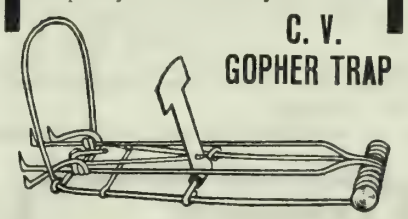
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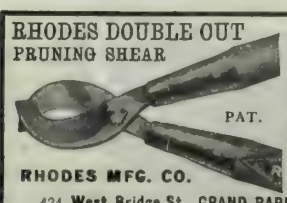
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THE FIELD.

Hop Planting Suggestions.

Mr. C. C. Donovan of Santa Rosa, an experienced handler of hops, gives the Republican some timely hints on hop growing:

As the hop season is about over, a little talk on hops and hop growing may not be amiss at this time. In commenting upon our lax methods, dirty picking and the careless way we have been handling our hops of late is not intended in this interview to injure any of the remaining hops unsold in growers' hands, for the growers that have the present holdings, as every dealer knows, have the best growth that Sonoma has produced this season. If all the hops were handled as well as the growths now remaining unsold, we would have very little reason for complaint.

There are some growers in Sonoma county who always put up an excellent hop in every respect, but while these growers are making every effort to produce a fine quality, the general bulk of our hops of late are placed on the market in a very bad condition, and for that reason Sonoma is getting a bad name with the trade. It is unfortunate that we have allowed ourselves to drift into such careless ways in the handling of our hops.

At one time Sonoma took the lead of all hops on the Pacific coast. Formerly brewers in buying their supplies demanded Sonomas. The heavy call for Sonomas by the brewers compelled some of the large dealers to be represented in this field in order to satisfy that trade, but on account of the poor quality we have been putting forth the last few years, we have drifted from bad to worse, and the brewer who once paid a price above the market to get our hops has been compelled to go elsewhere to get the quality he required. Sonomas prior to the last few years commanded a premium over all other hops on the Pacific coast. But what is the condition to-day? We are ½ to 2 cents less in price than Oregon, ¼ cent less than Russian River, and on an even break with Yolos, and all on account of the way we have been picking our hops.

There is no hop on the Pacific coast that is in it with a clean picked, well cured, good colored Sonoma. The climate and soil are doing as much for us to-day as it ever has and we are growing just as fine a quality as we ever did, but we are destroying that quality by the amount of trash we throw in. Can we afford to have it said that we are not up to date and that other sections are surpassing us in their system of handling hops?

If we adopt the method we formerly employed in only picking the part of the field as it ripens, not letting certain parts get too ripe or permit any picking to be done on spots that are immature, we would then have a nice even growth as to color. Then on top of this, if we compelled pickers to pick clean, what a surprising change there would be for the better and what an awful shock it would be to the trade if next year every grower carried out these suggestions. I say, if we pick our hops clean the change would be so great that we wouldn't know our own hops. Then there would be a demand for our goods at ½ to 2 cents a pound above any other hops on the coast, the same as prior to the year 1899.

Let it be understood that in the future there is to be no more dirty picking. Let us pay a little more per hundred and have our hops picked cleaner, then you will see England and the high priced brewers again calling and bidding up for choice Sonoma.

As to the manner of growing hops, I believe that every yard over twelve years old should be plowed out and reset. It is easy to make this change without losing a crop. Simply plant the roots in the soil between the present hills. Plant them this year and let them grow during the next hop season. After next season plow out the old roots and you then have a yard two years old, all in new soil. Hops from two years old up to ten are strong and vigorous and can withstand any climatic changes that would cause a setback to old and sickly vines. Old hops are "has beens."

If a grower does not want to take a chance on his entire yard in making this change, let him experiment, say on one acre. Keep tab on the results. If the acre proves a success then switch the entire plantation.

Another suggestion. Every grower should set aside a corner of his hop ranch to serve as a nursery. He should have constantly on hand in this nursery roots of the growth of two years so in case any of the old hills fail to come up he is prepared to replace them by old roots—roots that have already sprouted and will surely come up, roots that will produce old hops, roots that will even the color of his crop. It is difficult to keep from having a mottled colored hop if one's yard is sprinkled with vines of the first year's growth.

EXPOSURE

to the cold and wet is the first step to **Pneumonia.** Take a dose of PERRY DAVIS'

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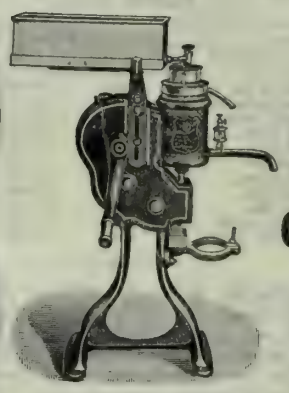
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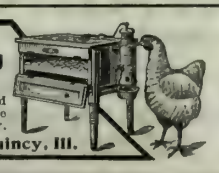
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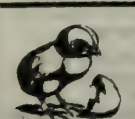


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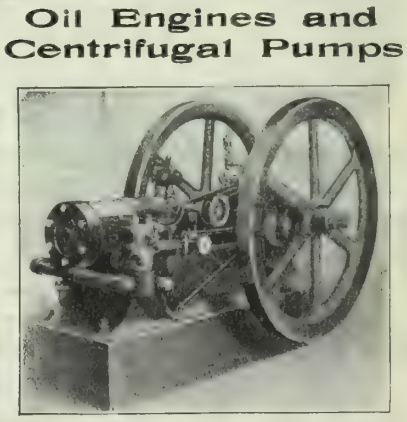
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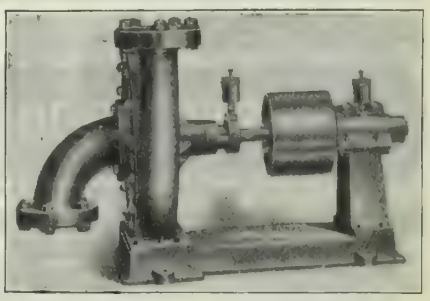
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New York, Feb. 5.—A proclamation addressed "To the American People" will be promulgated to-morrow from the various State capitals under the auspices of the National Grange, Patrons of Husbandry, and various labor and agricultural organizations, declaring that Washington's birthday be observed as "Farm, Home and Factory Day." It advises that upon this day the people concentrate their thoughts upon conditions for the betterment of the home, farms and factories. The proclamation recites a number of reforms as the object of the movement, among them being government over railroads "sufficient to abolish unjust rates and discriminations;" a parcels post permitting packages up to eleven pounds weight, and a post check currency system.

The proclamation urges every one to communicate with his Congressman in Washington in behalf of these measures. It is signed by Governor Brooks of Wyoming, Governor Herrick of Ohio, Governor Elrod of South Dakota (who excludes parcels post from his approval), Aaron Jones, Master of the National Grange, and various officers of labor organizations.



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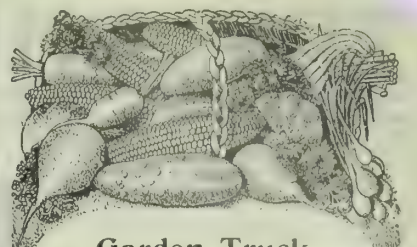
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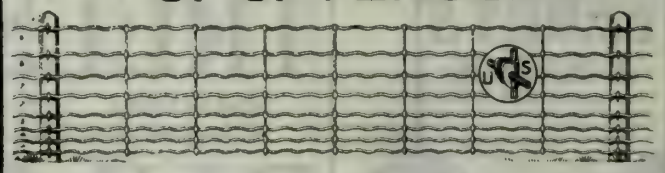
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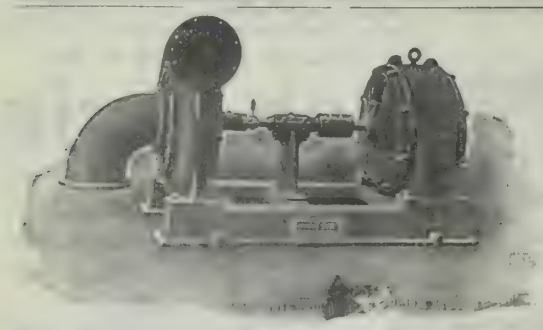
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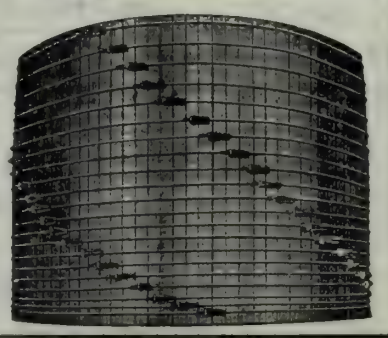
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 7. SAN FRANCISCO, SATURDAY, FEBRUARY 18, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

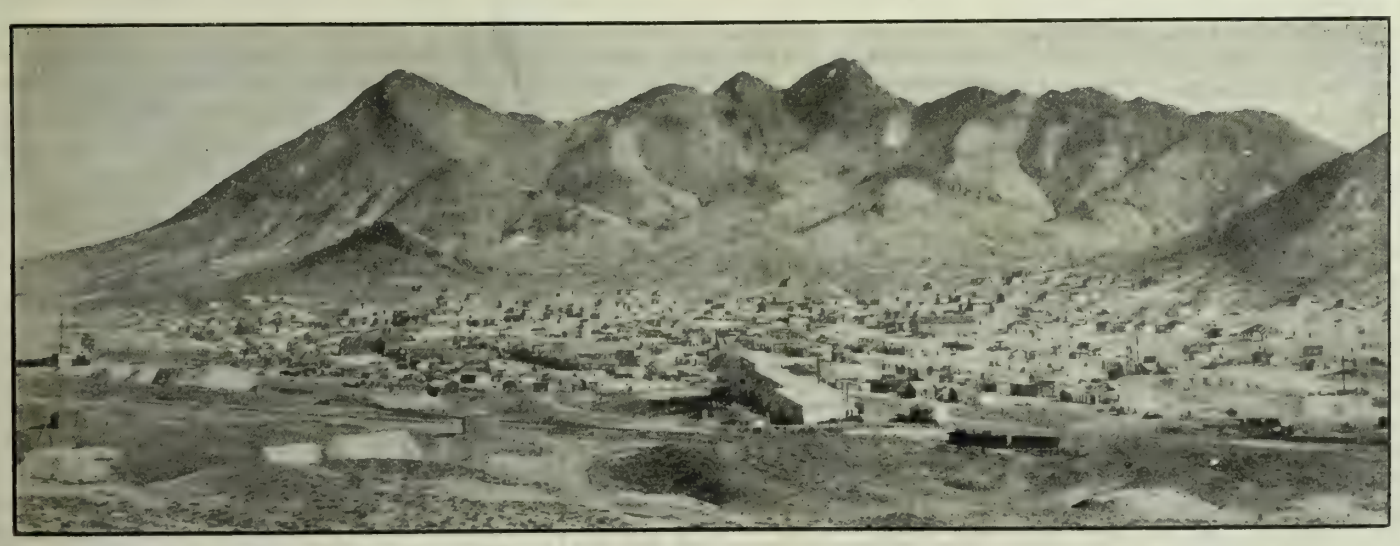
Through the Sierra and Beyond.

We acknowledge that the relations of California to the interior regions of the slope are rather a favorite topic of meditation and comment with us. We conceive of California as the sunny veranda to the great apartments beyond which are now filling so rapidly with the forces of development and industry, and the veranda upon which the wealth and beauty of the interior will be in some measure displayed to admiring eyes of the populous Pacific countries of a century hence. Current developments in Nevada in all lines of industry are therefore not only related and to be supplementary to each other, but all of them will give of their achievements to the promotion of California.

It is particularly fortunate, for instance, that the renewal of activity and ambition in the mining interests of Nevada should be almost coincident with the completion of the first national irrigation reclamation, because one group of producers makes the market for the other, and California mountain water wealth has much to do with both. We take, then, at this time a Sierra scene in California, with an imprisoned water supply, and below two places which are familiar, by name, to all who read of current progress in the State of Nevada—Tonopah and Goldfield.



Outlet of Sardine Lake, Elevation 9883 Feet, on the Line of Extension of the Tioga Road Through the Sierra Nevada.



Five Years from a Wilderness—Tonopah, Nevada, in January, 1905.



Another Planting of Industry on the Desert—Goldfield and Vicinity, Esmeralda County, Nevada.

The sight of these places, aside from the signification which we try to give them as related to California interests, will be acceptable to many readers. The pictures show how towns are made on arid wastes when precious metals are found. Tonopah in 1899 was merely the point where ore was found, 60 miles across deep sand from the nearest railway. Now it is a thriving town of 5000 people, with many modern improvements, and the railway alongside and pressing on to Goldfield, which is beyond. The pictures well illustrate the topography of the southern Nevada desert. The broad, nearly level valleys, and the low, rolling ridges or abrupt steep mountain slopes, are often without a vestige of vegetation from base to summit, while a tree (except here and there a grotesque yucca) is unknown in this wilderness in which the miners have built cities in a day. Before the gold discovery, Tonopah was a waste of coarse and jagged rocks, among which grew the scattering clumps of gray sagebrush, with patches of sand between.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, FEBRUARY 18, 1905.

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MISCELLANEOUS.—California Building at the Portland Fair; Farming Corporation in Canada, 108.

The Week.

There has been a run of north winds, some moisture lost by evaporation and rather chilly weather for February, but as we go to press all this seems on the point of disappearing in warm showers, which are rather more in the February line and in keeping with its record as a great gardening month. On the mountains, however, there have been low temperatures just right for the natural ice crop which seems now assured. All the chilly wind which has come to the valleys seems, however, to be our light end of the blizzards which have covered the great regions from the mountains eastward to the Atlantic coast, reaching southward even to the limit of giving Florida again into the grip of hard freezing—the extent of which is not yet known. In the central range States the weather has been fierce and destructive. Telegrams from Chicago state that W. S. Bolton, secretary of the Oklahoma Live Stock Association, declared Monday that live stock losses will be the greatest since the great blizzard of 1896. He places the number of head lost on the plains in west Kansas, western Oklahoma and the Panhandle of Texas at 50,000 head. Farther north, in Nebraska and the Dakotas and Montana, the stockmen are better prepared to shelter their stock, their cattle are being sheltered from the cold, and it is not expected their losses will be anything near so heavy as those on the ranges farther to the south. California thus far has had no freezing to cause injury, and the lower temperature is, on the whole, desirable to restrain the fruit trees and vines from too early starting.

Spot wheat here is firm and unchanged—no exports and little offering. Speculative wheat here is stiffened for both May and December delivery on reports that European conditions are not very favorable to the coming crop. Barley fell away 2½ cents just after our last report, but has recovered it. Oats are steady. The corn trade is mostly in Eastern arriving and going out, with but little California corn concerned. Beans are firmer; large whites and Limas are moving out and blackeyes have improved. Bran and middlings are quiet, steady and unchanged. Hay is unchanged and slow. Of meats, only hogs are higher and in light receipt; spring lamb is appearing. High-grade butter is declining, but lower grades are firm and in active demand for Eastern shipment. Cheese is steady and fairly firm for flats which are going to the north from stocks not large here. Eggs are lower but in active shipping demand and may do better. The Eastern markets are strong but buyers for shipment want to get stock at about 22½@24c. Choice young poultry is firm, while old and common have a weak tone. Potatoes are unchanged; strictly fancy in good demand and common slow. Onions are quiet and held above buyers. Another receipt of Australian fills 500 cases and is added to previous receipt, being held for better prices for shipment as they are good keepers. Apples are weak with heavy arrivals from the North. Oranges are lower, the weather is too cool for active demand, and receipts are heavy. Lemons are quiet and steady, and limes firm and in light stock. Choice pomeloes are selling well. There is little doing in dried fruits, but they are firm for all but medium-sized prunes and common raisins. Dried apricots and apples are marked up by jobbers. Nuts are quiet. Honey is slow and weak; a car of comb has come in from Nevada and not yet sold. Fifty cases of Hawaiian have gone to New York. Hop dealers are quoting lower, and Eastern and foreign markets are quiet, but holders are firm and expecting an advance. Nothing is doing here in wool, but the tone is strong. Reports of unusually large payments to hold contracts are reported from the interior wool States.

A very earnest appeal was made before the Ways and Means Committee of the Assembly at Sacramento on Monday of this week. The leading speakers were President Wheeler of the University and Judge Peter J. Shields, representing the Live Stock Breeders' Association. Both strongly urged the desirability of a good, large, centrally located and fully equipped farm both for instruction and experiment. Most agricultural societies have united in urging an appropriation for this extension of instruction in practical agriculture in connection with the University, and the proposition seems to be very strong also with the Legislature. The necessity also for an adequate building for agriculture at the University site was also urged by President Wheeler and other speakers. It was shown that there are now 415 enrolled in the agricultural classes at the University and it is altogether impossible to find adequate space for them in the present buildings—including all the outbuildings and sheds which could be made use of. What can be done by the present Legislature must of course be determined by the amount of money available for permanent improvement of various State institutions, but the disposition toward providing for agriculture at the University seems to be very strong and active.

The California Promotion Committee has sent out an open letter urging that trees and plants whose leaves remain green throughout the winter be planted in California, because such trees are the best evidence of California's climate and attract and impress visitors from the frozen East. The committee urges the planting of non-deciduous trees and plants for ornamental and shade purposes in preference to deciduous trees. With all of this we agree—to a certain extent. But it must not be forgotten that we have to live in California, and the people we attract have to live in California also, and particularly in parts of California where the rainfall is large and the soil deep and rich, there is such a thing as making roads almost impassible by too free use of evergreen trees. It is also true that many of our houses which may be rendered most delightful by embowering them with foliage in the summer are intolerably damp and chilly under the shadow of evergreen foliage in the winter. Beautify the landscape by planting waste places with evergreen trees and shrubs, and use them wisely elsewhere also, of course, but do not shut out the beneficent work of the sunshine during the rainy season. There should be moderation in all things—even in planting evergreen trees.

It will interest those who are in suspense over the pear blight to know that Mr. M. B. Waite of the United States Department of Agriculture is now in California conferring with the University plant disease experts and the Legislature concerning the special investigation which California pear growers desire to have made to ascertain if there be not some cure or escape from the grip which the blight has upon our great pear interest.

QUERIES AND REPLIES.

Orange Growing in Central California.

To THE EDITOR:—I am thinking of buying an orange orchard in central California. I am satisfied with the property, for I have seen it and know its record in production. I am told that the favorable points in growing oranges in the central part of the State are absence of frost, sure and cheap water, freedom from smut, and earlier ripening. Is there anything in these points?—INVESTOR, Minneapolis, Minn.

It is true that in the central and northern parts of the State, where oranges are now grown commercially, there has been thus far exceedingly little injury by frost, less than in some places at the south, because the northern fruit is practically disposed of before the frosty weather comes and because the trees are at that time more thoroughly dormant than they are at the south—consequently less liable to injury by the same temperature which sometimes cuts back new growth at the south. The extra earliness of the northern crop is seen in the fact that the shippers have practically done with the northern crop before they handle the southern crop in large quantities. Freedom from smut depends upon the absence of scale insects and it is true that some scale insects are sometimes absent—sometimes less abundant than they are in the southern part of the State, where the situations are more open to the moisture of the coast—because southern California has no high mountains between its citrus district and the coast, and in the upper part of the State the high coast range intervenes. But you cannot count upon absolute freedom from smut and scale in this region. Experience has shown that by increased size of trees and increased humidity of the air, through interference with circulation, and the presence of moist soil, scale insects may ultimately thrive in places where they do not get a hold on young trees. It is also true that other scales, capable of inducing ample smuttiness, are able to live in the highest, driest heat found anywhere in California. You must be prepared to fight scale everywhere.

When to Plow Orchard.

To THE EDITOR:—How deep and at what time would you advise a peach orchard to be plowed at the Maywood Colony, in the Sacramento valley? Of course, that will depend on the season and rainfall. Would you advise me to have my orchard plowed as soon after the middle of February as the condition of the soil will permit, or wait until March, regardless of the condition of the soil the latter part of February? The longer one waits the more weeds and grass there are to turn under to fertilize and loosen the soil; but, if he waits too long, he runs the risk of losing moisture and not having the green stuff properly rotted. I have usually waited until after the middle of March. Is that wise?—READER, Albuquerque.

Your question shows that you well understand what has to be looked out for. There is, however, another condition involved. If the soil is loamy and deep, and, therefore, open to receive and with some capacity to retain it, you can afford to pay more attention to getting a heavy growth of green stuff than you can if you are operating on the baking, shallow soil which is found in some parts of the colony. On such soil you are losing more in moisture right along than you are gaining in green stuff, because the grass is pumping out and evaporating the moisture, which you will sadly need next summer, and the later you let this go on the worse off you are, especially if spring rains should be scant and your land work up cloddy and dry when you did come to plow. One can not go altogether by the calendar; it is better to study the soil. Your trees will soon be in bloom and will commence using water, and, if the grass is using it too on a shallow soil, there will be trouble later. We should plow earlier than you have usually done and take the chances of being scant on greens, rather than on water.

Fertilizers for Potatoes.

To THE EDITOR:—What is the best fertilizer for me to use to grow potatoes on run down land? I want to grow three acres this year. The ground is a gray, gravelly loam, with a lot of fine white gravel in it.—NEW COMER, Sonoma county.

Do you know that your land has been worn out in growing potatoes, or has it been used for some other crop? If potatoes have not been grown upon it you should find out from local inquiry whether potatoes are satisfactory on such land. Sometimes notions formed of the suitability of certain soils from Eastern

experience do not work out that way in California, and sometimes soils which have been used for other crops for a length of time may give very good returns with potatoes without expenditures for fertilizers. If you wish to invest in fertilizers as an experiment you cannot probably do better than by writing to those advertising fertilizers and ask them to suggest and to make a price on a fertilizer which they think likely to give you best results; but we should not fertilize all the ground this year—fertilize part of it and watch what the result is.

Orange Enterprise in Tulare County.

TO THE EDITOR:—We are preparing to plant orange land in Tulare county and are now prospecting for water. If it is found in sufficient quantities to irrigate the land we shall put in a pumping plant and put about sixty acres in Navel oranges, and shall probably move to California in the autumn. At this distance we find it difficult to get definite information and so I am applying to you, hoping to get at the facts. At what price can the best Navel orange trees be purchased this spring? In what part of the State can the best stock be purchased? What would be the approximate cost of planting after the ground was leveled and prepared? How late in the season could the planting be safely accomplished? How many trees to the acre? Is there any variety of citrus fruit more profitable than the Navel orange? What crops could be put into the remaining one hundred acres that would yield an annual income? Can such implements as cream separators, churns, incubators, etc., be purchased as cheaply in California as in the East? What style of pump would be best and approximate cost of same? What power—gasoline, crude oil or electric—would be best and most economical? In case more than one well is dug, can one engine be used for pumping both?—INTENDING PLANTER, New York, N. Y.

There are some very important matters in your letter which cannot be satisfactorily answered without better understanding of the situation. Some of them, in fact, you will probably have to determine for yourself by personal investigation of conditions. However, such general remarks as seem warranted we shall be very glad to make. First, you will, of course, not undertake any investment whatever in citrus fruit planting until you have fully demonstrated that your water supply will be ample. Second, for prices on a large lot of orange trees, you should confer directly with those nurserymen who are producing and advertising in our columns. They are the largest and most reputable nurseries in the State. The cost of planting after the ground is fully prepared for irrigation should be somewhere from 6 to 10 cents per tree. Planting can be done as late as May if you have your water all ready for use as required. You can plant the trees at from 20 to 24 feet apart. The former is the usual distance, although in some localities, where the soil is rich and the trees are apt to grow strongly, the greater distance is sometimes preferred. There is probably, on the whole, no citrus fruit which is safer to plant in large quantities than the Navel orange. One cannot tell what other crops would be profitable without knowing the land. If it is good land for alfalfa and you have stock to use it and water to insure its fullest growth, nothing is more profitable than alfalfa on suitable soil. All implements can be bought in San Francisco, presumably to better advantage than they can at the East, because the importers can get lower freight rates on large quantities. As for pumping, the sale of pumps, cost, proper power, etc., are all conditioned upon the distance you have to raise the water. There are so many pumping plants in operation in the district where your land lies that the selection of machinery should really depend upon what you see of its practical operation. You should be exceedingly careful not to go to the great expense of such improvements as you contemplate without personal supervision. Of course, this might be delegated to some other person in whom you have the fullest confidence, but it should not be lightly transferred. Several wells can be operated with one engine, provided they are not too far apart. All this matter calls for particular investigation.

Plant Bugs.

TO THE EDITOR:—Enclosed please find a bug; they are very numerous around my house. Please tell me what they are and whether injurious or not.—TEN YEARS' SUBSCRIBER, Thermalito.

They are plant bugs of a common species, and as they live by sucking the sap of plants, they are injurious, if the plant they take to is valuable. They do, however, give a good deal of attention to common weeds. If they become numerous on any plant you esteem, strike them with kerosene emulsion. They are not easy to poison.

California Walnut—Diseased Olives.

TO THE EDITOR:—I send some olives and a walnut. What varieties are these fruits? The olives come from a large tree in Turlock which bore a heavy crop the past season and which has had neither cultivation nor irrigation for years. Is the growth on the skin moss or scale? The walnut is from a large tree by the courthouse at Modesto. Is it the American Black or California Black?

Is the honey locust a good tree to plant for windbreaks? Does it also make a lasting fence post? How long from the time of planting eucalyptus seeds until the young trees are ready to be taken from the nursery?—SUBSCRIBER, Turlock.

The olives are affected with the dry rot, a serious disease, which ruins their value for pickling. We are not sure of the variety. The walnut is the California black. The honey locust makes a good growth and will serve if you want only a summer windbreak; if you want protection at all seasons, take an evergreen. The locust grows well in the interior valley and the wood is very hard and durable Eucalyptus can be set out at any time after they are 6 or 8 inches of height, or they can be held about a year by transplanting and giving wider space in the boxes, and then they will be a foot or more, according to how well they are treated, etc

Squirrel Killing — Resistant Vines.

TO THE EDITOR:—In the PACIFIC RURAL PRESS of some weeks ago there is an article about killing squirrels. Can you tell me where I can purchase a similar outfit—the bisulphide of carbon and a galvanized cylinder with a bellows attached? Also what variety of table and wine grapes, domestic and foreign, can be grafted on Rupestris St. George? Also on Riparia? Also on vinifera resistant stock? Does the vinifera produce finer table grapes than riparia or rupestris?—READER, Alameda.

The bisulphide of carbon and instruments for its use can be purchased at many general stores in the country. The materials would be more widely used if they were advertised properly.

As for grafting on various resistant stocks you can get a pamphlet showing results by application to the Agricultural Experiment Station in Berkeley. We have printed much on this subject in the past; it is impossible to repeat in detail now. There is no vinifera vine which is satisfactorily resistant; recourse must be had to improved American vines or possibly to their hybrids with vinifera or between themselves. The riparia and rupestris are for stock purposes; they do not produce fruit to compare at all with vinifera.

Pollinizing Almonds.

TO THE EDITOR:—Is the bitter almond the male of almond trees, and will it assist in the crop? If so, how many should I have to thirty-three acres? I have the I X L, Nonpareil and Ne Plus Ultra. They are planted alternately as to variety. Will the Drake Seedling help in fruiting of these varieties?—GROWER, Orland.

The bitter almond is no more distinctively male than other almonds are, for all almond blossoms have both staminate and pistillate organs; at the same time the pollen of the bitter almond may be more effective in cross pollination than that of other varieties. Still, you do not wish to grow crops of worthless bitter almonds, especially as the Hatch varieties generally do well without them. Drake's Seedling is a good pollinizer and will probably help your other varieties when they coincide in blooming.

Bitter Almonds.

TO THE EDITOR:—Does it pay to grow bitter almonds for commercial purposes? For what purposes are bitter almonds principally used and at what price do they usually sell?—READER, Capay.

There is no demand for bitter almonds in the regular channels of trade. They are sometimes used for oil, and formerly they had a quotable value, which seems now to have disappeared here. Probably the flavoring essences can be more cheaply made in some other way.

Pecans on Black Walnuts.

TO THE EDITOR:—Can pecans be grafted on black walnuts?—GROWER, Woodland.

We have no conclusive information on this point, but our belief is against it. Who can speak from trial?

Discolored Pith.

TO THE EDITOR:—Another nut to crack. The pith in this sample of almond grafting wood is of a brownish color. It is from a good bearing and otherwise healthy appearing tree. This is the first time I have found such wood and thought it best not to use grafting wood unless the pith was white.—OLE, Capay.

There is a clear degeneration of the pith, but we see no indication of disease. We should not use such wood in grafting, except to put in a few to see what happened. Scions to be depended upon should have no signs of weakness whatever.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 13, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear, cold weather, with drying winds and frequent heavy frosts, prevailed most of the week. Light rain fell in the north on Friday. The soil dried rapidly and farm work was resumed. Grain is in good condition in most places, but its growth was retarded by cold. The acreage in grain is being increased and prospects are good for large crops. Pasturage is abundant and stock are doing well. Almond trees are in bloom in some sections. It is probable that the severe frosts at the close of the week caused some damage to early deciduous fruits, although reports received state that no serious injury had been done up to the 12th. Pruning and cultivating are in progress.

Coast and Bay Sections.

The weather was generally clear and considerably cooler than during the preceding week, with light northerly winds. Heavy frosts occurred at the close of the week, but caused no material damage to crops. Plowing and seeding have been resumed and work is progressing rapidly in orchards and vineyards. The southern districts have received more than the usual amount of rainfall, and prospects for large crops of grain and hay are better than for several years. The outlook is equally good in the central and northern sections, although the heavy rains and subsequent cold weather have retarded growth. Green feed is plentiful and stock are in good condition. Almond trees are in bloom in San Benito county and other places. The cold weather is regarded as favorable for deciduous fruits.

San Joaquin Valley.

Clear and seasonable weather prevailed during the past week until Friday when it turned cold. Grain and grass made rapid growth during the first part of the week and are in excellent condition, but the cold weather of the past few days has retarded their growth. Pruning orchards and vineyards is about completed. The ground is in excellent condition and plowing and cultivating are progressing. Green feed is plentiful and stock are healthy and in good condition. Heavy frosts occurred generally the last part of the week, and it is feared that almonds have been injured, as many are in bloom.

Southern California.

Generally clear and warm weather prevailed most of the week, with lower temperature and heavy frost in many places at the close. There was some damage by frost, but full reports have not yet been received. The rains since February 1st average about 6 inches, making a total of over 12 inches for the season in most sections. The reservoirs have received more water than in any similar period for ten years, and the mountains are heavily covered with snow, insuring an abundance of water for irrigating. Plowing and seeding are progressing rapidly and the grain average will be larger than usual. Early sown grain is looking well and making good growth. Green feed is plentiful and stock are doing well. Orange shipments were light.

LOS ANGELES SUMMARY. — Grain and pasturage growing finely; large acreage of grain planted. The ground is generally too wet for plowing and seeding. Heavy frost Monday morning; vegetables and small fruits considerably injured; no information yet from orange districts.

EUREKA SUMMARY.—Grain and grass are growing rapidly. No material damage from killing frost. Prospects are good for large crops of oats, hay, barley and fruit. Some snow on mountains half way down.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 15, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.03	22 58	32 43	29 22	54	30
Red Bluff	.02	24 14	16 54	17 77	62	28
Sacramento	.00	13 68	8 30	12 88	56	36
San Francisco	.00	16 02	10 87	15 86	60	42
Fresno	.00	7 90	1 80	5 62	60	30
Independence	.00	1 62	1 77	2 93	58	26
San Luis Obispo	.01	14 22	4 37	13 87	66	34
Los Angeles	.00	10 81	1 64	10 72	70	42
San Diego	.12	9 00	1 32	5 07	68	40
Yuma	T	2 38	0 66	2 31	68	38

THE DAIRY.

The Dairy as an Adjunct to the Orchard.

By Mrs. Minna E. Sherman of Fresno at the University Farmers' Institutes in Southern California.

[FIRST PAPER.]

The dairyman and cattle feeder have learned the value of the balanced ration to produce results. To-day there are few dairymen that would feed their cows unlimited amounts of corn meal; they wisely give them only enough to keep them healthy under the strain of the heavy protein feeding, while the producer of fat cattle pushes the corn meal on his stock as the cheapest fattening food, only using enough of the protein to keep the animal digesting the carbo-hydrates.

How rarely do we find the orchardist following this example and balancing the orchard or vineyard with a herd of cows to keep up the fertility of the soil in the cheapest manner.

For me to speak of the cows first seems most natural. I am constantly asked by people: Where can we buy common cows that are worth anything? For every one does not care to raise fancy cattle, that is a life work, and without one has a natural love for cattle, as well as an eye for judging them, it is apt to be an expensive luxury to have a registered herd.

Good native cows can be picked up one or two at a time in every locality; by breeding them to a registered sire, the heifers saved and raised carefully, the herd will improve rapidly, at small expense. One must be content, at first with small gains in butter production, to have in the first generation of these heifers few or none that will produce 350 pounds of butter in a year.

The sire selected for this use should be a little coarser than one would choose to use on a registered herd, with the race or breed type very strongly pronounced. He will stamp his quality on his offspring in proportion to his own strength; any coarseness will refine out of the cows under strain of butter production induced by heavy protein feeding.

The manager of a dairy herd has always to be building on the side of stamina or physical strength of the cows when pushing them to greater production. The fresh heifers are fed as much as possible of succulent food, for the udder is plastic, and by forcing the milk flow the glands are fully developed. If the heifers are not developed the herd will not improve if all the best blood possible is added. Training to milk making is fully as necessary as the inherited tendency. In a trotting colt the blood for speed may be there, yet, if $500 or $600 worth of track work is not given to the youngster, the speed is not developed.

This training or educating is the race we make with nature in growing plants as well as animals. Nature seems to care more to increase the numbers of the variety than that it should be made more productive of value to mankind. When we improve a plant or animal, watchful care is necessary to conserve strength, for under the changed conditions the vitality of the individual grows weaker. Some of you may remember the history of that celebrated herd of Shorthorn cows that were sold at auction at New York Mills some twenty years ago, where one cow brought over $30,000. (Professor Cook here stopped me to say he thought that cow sold for $40,000. A gentleman in the audience agreed with Professor Cook.) To-day where are the descendants of these nearly perfect beef cows? They were simply bred so fine that they went out of existence.

In dairy cows the heavy yearly producers are the best, for it is easier to make a sprinter with a wonderful seven-day record than to handle a cow so she will produce 650 pounds of butter in a year. These wonderful seven-day records of cows and the wonderful large single plate specimen of show fruits are not the average of the dairy, nor are they the crop of the orchard, they only show what we can force from Nature for a limited time, and, while interesting, have little commercial value.

Cows are easily and cheaply selected by the Babcock test. Would that it were as easy to select the trees and vines. Yet they need it even more than the cows. To-day the orchards and vineyards contain a surprising number of worthless individuals. The propagation of the trees and vines has been carried on by those who believed one plant as good as another, so that scions and cuttings were made from any tree or vine of the required variety, instead of being taken from the individual plant that had for years shown the greatest fruitfulness and had grown fruit of good merchantable quality.

The man brave enough to destroy unprofitable trees or vines is rare. Usually he sells out, instead of culling out the poor individuals and grafting them over and patiently waiting results. A good twenty-acre place, where every vine or tree yields, is better than the average hundred acre place as we usually find them.

Again, there was never a more foolish idea that Californians have of growing only one crop and buying everything else. When the one crop fails, taxes, water rent and cultivating expenses still go on. It is more a wonder that so many succeed rather than that so many fail under these false conditions. It is said "if you have a bank account you can afford to own a fruit farm." With the exception of sugar, tea, coffee, fish, salt, pepper and spices, I have always made the ranch feed the family and men. The dairy herd's ready money comes in as cash for butter fat each month. The skim milk fed to the pigs, and valued at 10 cents a hundred, often fully pays for the milking. The pig yards are excellent places to make compost; all the trash that will rot, as old clothes, rags, leaves and rubbish, when dumped there rots during the winter and adds six or eight loads of compost to the manure pile. Everything can go into these yards except old tin cans. Please, right here, let me ask you to bury them. Do'nt, no! Please do not dump them on the roads, or along the railroad, for they are very unsightly.

The orchards should be planted during the winter with soiling crops if possible. Where cow peas are grown it looks very wasteful to the dairyman to see the tops turned under; the roots covered with the nitrogenous tubercle are plowed under and are sure to rot, while the tops often fail to do so, when they become a positive detriment to the soil by causing loss of moisture. These tops should be fed green or cured into hay for the cows, for they are rich in protein, the trees receiving in the manure all the element of the tops, while the cows have produced a second profit in milk or butter. The trees respond with increased fruitfulness, while the cows pour out the butter fat to be returned as gold at the end of each month. There is not a year to wait for this golden harvest. The manure from the stables is spread daily; this saves handling the second time. In the winter it is promptly plowed under, in the summer it acts as a mulch, helping to retain the moisture; when the first rains fall it is ready to yield up its fertility. Gypsum is of value to soils that are alkaline, and when added directly to the manure arrest the escape of ammonia; it also helps to retain moisture in the soil.

The great value of a mulch of strawy manure on a young vineyard or orchard does not seem to be generally recognized, yet, if the young plantation is well cultivated to the depth of 6 inches, after a copious spring irrigation and the ground covered with strawy manure or alfalfa hay, it will require no more cultivation until the next season. My best vineyard was grown in this way—for while the vines did not make as heavy a top growth the first season, they rooted deeply, and in three years were as large as ordinary five-year-old vines.

When the winter rains come the mulch that is made from the straw has enough grain in it to sprout; it can then be pastured off by the pigs and the roots turned under will give a green manuring to the land.

HORTICULTURE.

The Results of the Florida Freeze.

Fortunately the results of the Florida freeze, to which we alluded on the basis of telegraphed reports, are lighter than at first thought, though serious on the whole. The following are apparently the facts:

The Official Report.—A. J. Mitchell, Florida section director of the U. S. Weather Bureau, makes the following report: The coldest weather during any January since 1886, when the temperature fell to 15° in Jacksonville, occurred on the 26th and 27th. The following minimum temperatures are reported from weather bureau stations in this State: Jacksonville 17° and Pensacola 18°. The damage by the cold wave was very serious, all unprotected vegetables being killed, and citrus fruits over northern and central portions were frozen. Freezing conditions prevailed throughout the mainland of the State. At this time the exact damage to groves cannot be determined, but it is generally conceded that most foliage will be lost and some tender growth damaged. It is quite probable, also, that many young trees have been materially damaged if not killed over northern and central districts. Where groves were protected by fires results were very satisfactory. In some cases both fruit and foliage were saved. Practically the only vegetables saved over northern and central districts were those under cover. The damage was not so disastrous over the extreme southern district, especially where protective measures were supplemented by favorable location, such as proximity to water. The weather bureau gave timely notice of the approaching cold weather.

Another Report.—The New York Fruit Trade Journal, on the basis of local inquiries, makes the following generalizations: The replies written several days after the cold wave had passed, when ample time for correct observations had transpired, are more encouraging than at first expected. In general the freeze happened at a lucky time for oranges and grape fruit, as the trees, on account of the weather conditions, were in as good shape as possible to stand the cold; also the thermometer continued low enough to bring them in most cases safely out of the crisis. So the belief is that the trees generally are uninjured. The fruit on trees seems to have been largely killed or so injured as to be worthless from a market standpoint, although the amount left in groves was not large on the whole. Pineapples, from the meager reports on this crop, seem to have suffered very severely.

The vegetable outlook is perhaps not so bad as was first believed. Most of the vegetable crop shipping was cut down, but there is hope for the near future, as much was saved in various sections, though the loss to vegetable growers after all was very heavy.

Growing Loganberries in Southern California.

A successful grower of loganberries in the San Gabriel valley, Los Angeles county, gives the Cultivator an outline of his methods, which have given very satisfactory results and with the least labor.

It will pay well to make the soil rich with stable manure before planting. I prefer rooted tips for plants if I can get them, but very good plants can be had from layered canes. Plant any time during February, in rows not closer than 5 feet—6 feet would be better if you have plenty of land. Set the plants about 4 feet apart in the row. Cultivate often and water freely enough to keep up active growth throughout the summer. When the canes begin to grow freely, thin out to about six canes to the plant and train them lengthwise with the row—allowing three canes to go in each direction. Allow them to lie on the ground, but to keep them trained along the row so that you can get through with the cultivator. It may be necesssry to use a few stakes. Take 4-foot plastering lath and saw them in two and sharpen one end, for stakes. When the season is about over, the canes will keep their position along the row and the stakes can be pulled up and put away for next year.

In December and January, prune by cutting back each cane to about 4 feet. In the spring when the fruit spurs start into growth, they will all seek the light and grow upward, as in the case of the dewberry, so that the fruit will be easy to find. But while the plant is fruiting, the new growth for the following season's fruit wood will come up very vigorously and, unless partially cut out, will interfere with picking. Cut out as little as you can so as to get the fruit.

Just as soon as the crop is over cut the entire plant off even with the top of the ground, clean off the brush and burn it. Be careful not to cut below the surface. We use a very sharp planter's hoe, and cut with an upward movement instead of downward. This is very important so that the buds at the crown of the plant are not injured. If the ground is reasonably moist when you cut off the plants, do not water freely nor at all until the new growth has started nicely. After that the plants will bear watering freely and from that time until the fall rains give both irrigation and cultivation regularly. This will produce a growth of clean, healthy new wood for the next season's fruit.

Continue this method as long as the tract gives good returns. This will be a great many years, if a light dressing of manure be given and cultivated into the soil annually. Some growers allow the old wood to decay where it grew, permitting the new growth to trail along on the top of the old. Noxious weeds and plants will soon gain such a footing under such treatment as will make it impossible to dislodge them. Except in city lots where land is very limited, I should consider any form of trellising a waste of labor.

THE FIELD.

Alfalfa up the Coast Without Irrigation.

Although alfalfa gives its largest returns under irrigation, often yielding six tons and seven tons per acre in one season, it has been quite thoroughly demonstrated that it is the largest yielding and best paying hay plant that can be grown on dry upland in eastern Washington and eastern Oregon. Mr. Byron Hunter gives an interesting account of it in the Oregon Agriculturist. On such land it does not reach its highest development until about the third year, as it requires some time for the root system to develop sufficiently to take up the required moisture for the plant. Therefore, little must be expected the first year and only light returns the second.

Preparation of the Soil.—The ground selected should be as free as possible from weeds, as these are the great enemy of the young alfalfa plant. Land plowed deep in the spring and thoroughly cultivated during the summer makes an excellent seed bed for alfalfa. With land prepared in this way and early fall rains, early fall seeding would probably give very satisfactory results. All this time, however, we have very little data regarding fall seeding. If the land selected for the alfalfa field grew a crop that previous season, plow it deep in the fall or early winter as soon as it is wet enough. Let it lie in this rough state until in good working condition in the early spring, when it should be thoroughly pulverized and packed by harrowing, disking, or rolling,

according to circumstances. As soon as danger of killing frosts is over cultivate again to kill any weeds that may have germinated and to break up any crust that may have formed on the surface of the ground and then sow the seed.

INOCULATION.—If it is thought that the alfalfa bacteria is not already in the soil, material for inoculating the seed may be obtained from Dr. Geo. T. Moore, Bureau of Plant Industry, Washington, D. C., by writing to him and stating the amount of seed to be sown and approximately the date upon which you expect to do the seeding. It is necessary to give Dr. Moore a little time in order that the inoculating material may reach you in due season. Inoculation may also be made by hauling surface soil from an old alfalfa field and scattering from 300 to 500 pounds per acre on the surface of the new alfalfa field just before seeding.

SOWING THE SEED.—If sown broadcast, 12 to 15 pounds of seed should be used per acre. Cover lightly by harrowing. If drilled, 10 pounds of seed will be sufficient. I know of some who use 5 pounds when sown broadcast. The common grain drill with grass seeder attachment may be used in sowing alfalfa seed. Take the spouts of the seeder off and put them on again so that they point back instead of forward. Then loosen the rubber tubes from the main drill, pull them forward and attach them to the spouts of the seeder, by wire or otherwise, so that the seed will drop in the hoes or beside the discs of the drill and be covered in the usual way. In the dryer localities where the soil is light and there is little or no danger of crusts forming on the surface, the seed can be covered as deep as two inches. In moist localities, however, the seed should be covered lightly.

TREATMENT FOR THE FIRST YEAR.—If weeds are troublesome, the field should be mown with sufficient frequency to keep them from smothering the alfalfa. Mow to keep weeds down and still cut off as little alfalfa as possible. If a good stand is obtained, and the field is not weedy, one or more cuttings of hay may be obtained the first year. The field should not be pastured the first year.

TREATMENT THE SECOND YEAR.—When the alfalfa is one year old, harrow thoroughly in the early spring as soon as the ground is in good working condition with a drag harrow. Give it the same treatment after removing each crop.

TREATMENT THE THIRD AND SUCCEEDING YEARS.—At the beginning of the third season, or when two years old, disk in early spring as soon as the ground is in good working condition, setting the harrow about as straight as possible. This causes the plant to send up more shoots than it naturally would by splitting the crown of the root. Finish with a drag harrow. This will form a dust mulch on the surface and conserve the soil moisture. Treat the same way after removing each crop. As the field becomes older and the roots larger the disk harrow may be set to run deeper. It can then be disked two or three times at each cultivation.

Although it is necessary to go to some trouble and expense in order to put the soil in proper condition for alfalfa, yet paying returns will be obtained so much quicker and the meadow is so valuable and lasts for many years when properly established, that the extra time and expense are amply repaid.

Fertilizing Hay Crops in the Foothills.

The annual report of the University Agricultural Experiment Station, just issued, has the following outline by Prof. A. V. Stubenrauch of the results with the use of fertilizers for hay in the foothills of Amador county:

The experiments with fertilizers on hay crops, begun in 1901, were continued during the season of 1902–03. During the season of 1901–02 it was found that the use of Thomas phosphate slag and sulphate of potash with nitrate of soda did not pay as well as nitrate of soda used alone. The experiments during the last season were planned to test the availability of the phosphate after the first season. It was thought last year that there was a possibility that the insoluble slag phosphate would become more available the second season after applying it. The plots used in the 1901–02 experiments were subdivided and given different applications of nitrate of soda used alone and in combination with sulphate of potash used at the rate of 300 pounds per acre.

The yield of hay was lower on both fertilized and unfertilized plots during the season of 1902–03 than it was in 1901–02. This difference is undoubtedly due to an unfavorable season. The late spring rainfall failed almost entirely, and to this no doubt must be attributed the decreased yield.

An inspection of the summary of results shows that the heaviest yields of hay on both red and granite soils and the largest money returns per acre were obtained from the plots which were fertilized with phosphate during 1901–02. On red soil with oats the gain from the use of nitrate of soda on the plot which had phosphate the year previous was $11.70 per acre, as against only $3.72 per acre where the nitrate was used on land having no previous fertilization.

On granite soil with oats, there was no gain from the phosphate. The use of nitrate of soda alone without previous fertilization yielded $9.44 per acre profit, while on the plots having phosphate applied the previous year, the gain was only $5.74 per acre.

The heaviest yield of hay and the largest profit per acre in 1903 were obtained with wheat on granite soil which had an application of Thomas slag, sulphate of potash, and lime in 1902. Nitrate of soda was used at the rate of 320 pounds per acre in 1903. The yield of hay was 5772 pounds per acre, and the resulting profit $12.89 per acre. It should be remarked here, however, that this plot was fertilized at a loss of $21.50 per acre in 1902; and as the application of nitrate was larger than was used on any other plot, the increased returns were at least partly due to the increased supply of the nitrate. Through some misunderstanding there was no corresponding wheat plot on granite soil with nitrate only.

The use of sulphate of potash in combination with nitrate of soda, on granite soil, did not pay in 1903. Potash was used at the rate of 300 pounds per acre. In most cases the fertilizer cost more than the increased crop of hay; hence its use incurred a loss of from 76 cents to $4.57 per acre.

The experiments with nitrate of soda used alone were broadened in 1903 to test the efficacy of different amounts per acre and the division of the application into two doses. The results show that in 1903, 160 pounds of nitrate of soda per acre in one application yielded the largest profits; viz: $9.44 and $8.90 per acre respectively on two plots on granite soil. In all cases the yield was reduced when the fertilizer was put on in two applications; thus with 160 pounds per acre applied in two doses, only $4.82 and $7.27 per acre were yielded by two plots on granite soil.

From these results it should not be inferred that it will always pay best to apply nitrate in one dose. The season of 1903 was exceptional, in that the last spring rains were deficient. There was very little rainfall after the second application on April 9; hence the fertilizer could be of little benefit. In seasons of normal or excessive rainfall, it is fair to presume that it will be best to use the nitrate in two applications, in order to prevent loss by leaching.

THE IRRIGATOR.

Water Rights in California.

NUMBER VII.

Written for the PACIFIC RURAL PRESS by SAMUEL C. WIEL.

The right to deposit waste in streams may, however, exist. It may arise by priority of right on public lands (7 Cal. 148), though priority will not sanction it if it amounts to a public nuisance (66 Cal. 138). The most important consideration, however, is that no one can complain of pollution of a stream if his own use, though prior, is not materially interfered with. The burden is on the plaintiff to show an injury, and so, for example, a placer miner can have no action where later comers above muddy the stream but still leave it fit for his purpose. (Atchinson vs. Peterson, 87 U. S. 507. Also 8 Cal. 327, 11 Cal. 143, 25 Cal. 481.)

The question of pollution of streams is one of great importance. The subject is treated at large in the recent bulletin of the United States Geological Survey, Number 103, Water Supply Series, and in Lindley on Mines, second edition, section 838 et sq.

3. Form of remedy. The owner of the water right has the usual recourse to the courts, as he has in the protection of any other property. The most efficient remedy is, of course, the writ of injunction, whereby interference is stopped forthwith. Among other requisites to obtain this, there must be a threat, or likelihood, of irreparable damage. An injury of a ditch which will not destroy its efficiency, and can be easily repaired, will not be enjoined—the owner will be left to his less drastic remedies. (35 Cal. 534). And another essential is, that the interference is, or is threatened to be, a continuing one in the future. An injury to a ditch already accomplished in the past is not a case for an injunction. (8 Cal. 392). A proper case was such as 23 Cal. 452, where some miners were engaged in works that were destroying a farmer's reservoir and ditch, and there still remained time to stop them. An injunction was granted. And in McCarthey vs. Gaston, etc., Mng. Co., 28 Cal., Dec. 377, a very recent case, an injunction was granted against pollution. In 17 Cal. 102 and 35 Cal. 534 an injunction was refused because of the rule known as the "balance of inconvenience;" that is, because the injury to the plaintiff was small as compared to the injury to the defendant if his works were enjoined. Such a disproportion of inconvenience as to cause refusal of an injunction should not, however, depend on mere difference of money damage; the difference must go to the irreparable loss of some substantial right on the part of the defendant aside from money value, while the interference with the ditch, etc., causes but slightly such a loss to the plaintiff, leaving him substantially compensated if the defendant pays money.

Though every case of injury to a water right does not make a case for an injunction, it does make a case for damages; that is, money compensation. An interference with a water right is in the nature of a nuisance. (8 Cal. 77).

Other forms of action have been used. Very many suits have been allowed to quiet title to water rights, as to other property. (e. g. 130 Cal. 290). In Katz vs. Walkinshaw, 141 Cal. 116, it was said, in passing, somewhat in this line, that a suit will lie by a landowner to have his right to percolating water declared, though he has sunk no well or otherwise made use of it; but that will probably be a matter for further consideration if the case actually arises. If there are several claimants on one stream, the court will apportion it among the claimants, and adjust their rights thereto. (Miller vs. Dondero, 26 Cal., Dec. 211).

The remedy nearest at hand is, usually, a show of force on the part of the owner; and in a few cases this is quite proper. Reasonable physical force may be used always to keep off trespassers. In 75 Cal. 601, the court says this extends to a "molliter manus imposuit," which, translated from the Latin, means "a gentle use of one's fists." Of course the law does not sanction serious bodily injury in putting a man off one's land.

4. Crimes: Under the penal code, there are the following crimes peculiar to this subject: Under Section 347, poisoning water in any spring, well or reservoir is a State's prison offense, and under Section 374 fouling the water by putting offal or filth into any stream, pond, lake or reservoir is a misdemeanor. Under Section 499, stealing water from flumes, pipes, etc., is a misdemeanor. Under Sections 592 and 607, destroying or injuring flumes, reservoirs, etc., is a misdemeanor.

LOSS OF RIGHT.—Water rights may, it is true, continue indefinitely; but they may likewise come to an end in several ways; and the chief of these are abandonment, adverse use and eminent domain.

1. Abandonment is a question of intention, to be drawn chiefly from the acts of the owner. If the owners disperse, the mine for which they used the water being worked out, and two years go by without their doing anything, they have abandoned their water right (32 Cal. 26). If they make a parol of it, it is a sign that they have abandoned it; in Grizesa vs. Terwilliger, 28 Cal. Dec. 313, it seems to have been considered even to be absolutely an abandonment. But this, it seems to the writer, should be regarded as only a conditional abandonment — that is, one depending on the validity of the attempt to dispose of the water right; and of no effect if the object of the parol sale is not carried out; just as in 106 Cal. 660 at 762, an owner abandoned an old ditch and used the water through a new one which, it turned out, he had built on another man's land without right. This, it was held, gave no right to use the water in the new ditch, but the right to use it in the old ditch was not necessarily lost.

The water must be continually applied to the beneficial purpose for which it was appropriated—a failure to do so is an abandonment (C. C. 1411). Up to five years the failure to use it is not conclusive and may indeed be explained away—it is a question of intention. But after five years it is conclusive. The intention may be drawn from lapse of time alone as well as from affirmative acts of the owner.

"In this State, five years is the period fixed by law for the ripening of an adverse possession into a prescriptive title. Five years is also the period declared by law after which a prescriptive right depending upon enjoyment is lost for non-user; and for analogous reasons we consider it to be a just and proper measure of time for the forfeiture of an appropriator's rights for a failure to use the water for a beneficial purpose.

"Considering the necessity of water in the industrial affairs of this State, it would be a most mischievous perpetuity which would allow one who has made an appropriation of a stream to retain indefinitely, as against other appropriators, a right to the water therein, while failing to apply the same to some useful or beneficial purpose. Though during the suspension of his use other persons might temporarily utilize the water unapplied by him, yet no one could afford to make disposition for the employment of the same, involving labor or expense of any considerable moment, when liable to be deprived of the element at the pleasure of the appropriator and after the lapse of any period of time however great.

"The failure of the plaintiffs to make any beneficial use of the water for a period of more than five years next preceding the commencement of the action, as found by the court, results, from what has been said, in a forfeiture of their rights as appropriators." (Smith vs. Hawkins, 110 Cal. 122 at 127.)

(TO BE CONTINUED.)

IN ascertaining the head of water under which an orifice is discharging, measure from the surface of the water to the center of the orifice. This was the original idea of measuring the miner's inch of water; but, as the head was not uniform in the several districts, the Legislatures have adopted 1.5 cubic foot of water per minute as a standard miner's inch. This is 11.22 gallons per minute.

THE POULTRY YARD.

Petaluma—A Great Poultry District.

By James Dryden, Utah Agricultural College, Logan, Utah, in the Seventh Annual of the Utah State Farmers' Institute.

About the beginning of January, 1904, the writer visited the Petaluma poultry district in California. This is probably the biggest poultry district in the United States. The poultry business certainly makes a marvelous showing there. I had heard a good deal about the extent of it, but was scarcely prepared for some of the things that I saw and learned during my day's visit there. A few years ago some people started in the poultry business at Petaluma, which is a town of some 7000 people in Sonoma county, about 35 miles north of San Francisco. To-day it is the big industry of that section The country is dotted with small white poultry coops. I was driven over the surrounding country to see the poultry ranches by Mr. Woodworth, superintendent of the State poultry experiment station that has been located there. From a little eminence I could see poultry houses by the hundreds on all sides for several miles. They were all or nearly all painted white. Most of the poultry farms were run on the colony plan. The houses are small, about 8x12, or thereabouts, some smaller and some larger, and hold from 50 to 100 hens. They are built on runners—that is, the bottom sill is rounded off at the ends, and a team is hitched to them when they are moved to new, clean ground two or three times a year, or as often as necessary. The chickens are not yarded, but the different colonies or flocks are kept far enough apart so that they do not intermix very much; they go back to their own houses at night. There are poultry ranches there with all the way from 100 to 10,000 hens, all, or practically all, of one variety or breed. They are pure-bred White Leghorns, though not "fancy" bred, having some scattering mongrels among them. Some flocks show evidence of careful breeding and some show the traditional "black sheep." It is surprising, however, that the poultrymen should all unite on one breed. In most sections of the country it is difficult to find two adjoining farms with the same breed of fowls, and the merits of their fowls are often the subject of heated controversy. The same subject often encourages the pugilistic idea among the youngsters. In Petaluma there was nothing that I could see to develop neighborly quarrels—the chickens were all the same breed. It is very natural that the Leghorn should thrive in California where the climatic conditions are so nearly like those of Italy, the original home of this breed.

Colony Houses.—I said that the general plan of poultry houses is the movable coop. Fig. 1 shows the prevailing style on the large ranges. This is from a photograph by the writer of a place owned by Mr. W. L. Sales, a progressive poultryman, and there were between 3000 and 4000 hens on the farm, he didn't know which was nearest the mark. Mr. Sales' houses were not painted or whitewashed, and in this respect they were not representative, but he didn't know that the color of the house made any difference in the egg yield.

There is, however, another style of house, as shown in Fig. 2. These houses are stationary and the fowls are yarded. This is the prevailing style on the small ranches where the land or range is limited, and typifies the more intensive poultry culture. There were some 1500 hens on the place shown in the latter illustration, covering some two or three acres. Fig. 3 gives a view of what would be called in Petaluma a small town poultry plant. In Utah, however, it would be called a large plant, as there were 1000 hens on the place, the piece of ground, I should judge, being less than two acres. The houses are of the movable style of coop, sheltering about 100 hens each. Each flock has a yard to itself and is confined by fences of poultry netting.

Feeding.—The method of feeding is pretty much the same on all the ranches. The hens are fed twice a day. A low wagon with a box or platform on it goes around with the feed the first thing in the morning and visits all the colonies. They are given a good feed of soft food in the morning, and at noon the wagon makes another round with a load of wheat, and enough grain is thrown on the ground to last them all day. In the evening the colonies are visited again, the eggs gathered and the chickens locked up for the night.

The Egg Yield.—I was told that most of the poultrymen keep their hens three years. I am afraid the third year they are kept at a loss. At a poultry institute which I had the pleasure of attending, one poultryman said that his flock of hens averaged about 100 eggs each during the year. This is a fair average yield where the flock is made up of hens from one to three years old.

The Labor Question.—The labor question interested me more than any other, and I was surprised to learn that on the large ranches one man can care for from 3000 to 4000 hens. This included the feeding of the hens, gathering the eggs and moving the houses, but not the bringing of the food from the market or delivering the eggs. The work of running the incubators and brooders was done by extra help. As the Leghorns are a non-setting breed, the hatching of necessity is done by incubators. There are two or three incubator factories in the town.

A Ration.—The ration Mr. Sales was feeding was about as follows: Boiled wheat, oats, shorts and meat. One-fifth of the grain was oats, two-fifths each of wheat and shorts. The animal food was meat scraps, dried or fresh meat, the latter preferred. He preferred fresh horse meat. Horses that have been killed by accident in San Francisco are bought and the meat fed fresh. The horse meat is preferred to cattle meat on account of its immunity from tuberculosis.

Tuberculosis in Chickens.—Tuberculosis had been discovered among the chickens in California by Dr. Ward, the veterinarian of the State University, and the poultrymen were waking up to the fact that they were losing a great many chickens from its ravages every year. In our drives among the flocks, Mr. Woodworth spotted a number of "consumptive" chickens and was having them sent to Dr. Ward at Berkeley, who is making a study of avian tuberculosis preparatory to issuing a bulletin on the subject.

Cholera Investigations.—Speaking of poultry diseases, Dr. Ward and associates of the University of California had rendered the poultrymen of Petaluma a signal service in a severe outbreak of fowl cholera just prior to my visit. Several flocks had been almost decimated, when the help of Dr. Ward and Mr. Woodworth was sought. Since then the Experiment Station has published a bulletin reporting the results of the investigations and methods used in checking the disease.

Value of Products.—I do not know of any district in the United States where the poultry business is carried on with so much success on a large commercial scale as at Petaluma. There were shipped from that town last year the enormous total of 3,407,334 dozen eggs, to say nothing of the shipments of poultry, the total value of eggs and poultry exceeding a million dollars, and for the whole county I was told that the total would amount to about two millions. In that town the stores were doing a cash business, for which the chickens got the credit. There are two poultry associations there, which meet regularly throughout the year, one of them meeting once a week, the other once a month. One association has to do with the marketing problem; the other with feeding and management of poultry.

The Profits.—As to the profits of the business, it is a foregone conclusion that there is money in it. There were, of course, failures, but these had probably been due to bad management and other misfortunes, but there were well authenticated reports of financial successes. On the trains to and from Petaluma the chief topic is chickens. On the way up, a silver-haired veteran with a silk hat told me of a woman who started in the business a few years ago with a few chickens and a debt. Her flock grew year by year until she now has 10,000 chickens, has paid off her debts, purchased another farm for $4000 and paid for it, and he knew of a client of his who was paying her interest on a $12,000 mortgage—and it was all made from chickens. When I got to Petaluma I sought to verify the story, and found that it was even more than the stranger had told me. It transpired that the lady in question had a husband, but his tastes ran more to cattle and his name was seldom mentioned. The chickens were credited with making some $30,000, and that from a small beginning.



Fig. 1.—A California Poultry Farm in the Petaluma District.



Fig. 2.—Illustrating Intensive Poultry Culture in California.



Fig. 3.—A Small Town Poultry Enterprise of 1000 Hens.

Fertility of Eggs—Poultry Books.

To the Editor:—Kindly tell me (1) How long it is from the time the rooster is placed with the hens till the eggs are fertile? also (2) How long eggs can be kept under ordinary circumstances before being placed under the hen or in the incubator? and (3) Where can I get a good book on poultry?—Reader, Capell.

(1) From a week to ten days. (2) Eight or ten days. (3) The best California book on poultry is "A Practica Poultry Plant," by Captain Mitchell It can be had from this office for $1.25



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We can also furnish good Eastern books: "New Egg Farm," by Stoddard, for $1, and "Farm Poultry," by Watson, for $1.25; also "Poultry Appliances and Handicraft," by Fiske, for 50 cents.

Agricultural Review.

Butte

ORANGE GROWERS WILL ORGANIZE.—Sacramento Bee, Feb. 10: W. A. Beard, secretary of the Sacramento Valley Development Association, returned this morning from a trip to Oroville, made at the invitation of the committee appointed at the meeting of orange growers held some weeks ago. The committee is endeavoring to devise a plan of organization that will solve some of the perplexing problems of orange marketing, and will report to a general meeting to be held in the early future. An effort may be made to interest growers of other north-of-Tehachapi orange districts.

Colusa.

WILD ANIMALS KILLING STOCK.—Sacramento Bee: Not for years have the wild animals of western Colusa county given the stock raiser of that section as much trouble as they have during the past month. The very severe weather in the mountains possibly accounts for the boldness of the animals, especially of the brown and black bears, which have been seen in greater numbers than in many years. They have been killing many sheep, in some localities even attacking calves. A party of stockmen have organized and gone out with guns and a pack of bear hounds, for the purpose of exterminating as many of the animals as possible.

Glenn.

COSTLY ANGORA BUCKS. — Conklin Bros. of Newville, who have been trying to get an importation of Angora bucks from South Africa, will apparently soon be rewarded by success. The arrangements for the importation have been completed, the Government permits granted, and if nothing intervenes, the goats will reach quarantine in San Francisco about the middle of March. These bucks will be costly animals by the time they reach their new home, but will probably prove a decidedly profitable investment.

Kern.

BEST MONTH FOR SHEEPMEN IN YEARS.—A Bakersfield dispatch says sheepmen generally agree that the past month has been the best January for sheep that the country has known for a great many years. A large number of sheep that left early in the winter have returned, and, although there will not be so many sheep here at shearing time as last year, well posted sheepmen say that the spring clip will amount to upward of 100,000 fleeces. Wool gives promise of bringing a good price this spring and bidders are now offering 12½c for advance contracts. It is reported that Miller & Lux will use shearing machines this year and that forty of the new machines have been ordered for their Kern county ranches.

Orange.

BEET FARMERS HAPPY.—Santa Ana Blade: Crops are now assured upon upland and in valley; hay, grain and beet crops are a certainty, while the pastures are renewed after the worst drouth for twenty years. There is a demand for beet land which is greater than the supply, and it is safe to say that every available acre will be planted as soon as practicable. The busy scene will now be transferred from factory to fields in the production from the soil of the raw material for another campaign of sugar making.

San Joaquin.

ALMOND VS. CHERRY.—Stockton Record:—The Sacramento Chamber of Commerce is bragging that it will send the trunk of a giant cherry tree, grown in that county, to the Lewis and Clark Exposition. San Joaquin county will go Sacramento county one better at the same game. The Stockton Chamber of Commerce will send to the Exposition the trunk of an almond tree, grown on George Ashley's ranch, near Stockton, which is 3½ feet in diameter. That "lays it" on the Sacramento cherry tree by about a foot.

SPUDS DIDN'T DO WELL LAST YEAR. — Potato growers did not make fortunes in this county last year. Charles Moreing, who is probably one of the largest potato growers in San Joaquin county, states that he lost considerable money last year. His crops were poor. Mr. Moreing is a great believer in the spud as a money maker, and he hopes to make quite a stake this coming season. He has 5000 acres of island land. Mr. Moreing will plant 1000 acres to potatoes, and he has rented 1800 acres to a big Chinese company to plant to tubers on the percentage basis. Just now he is engaged in sowing 2000 acres to barley.

Santa Clara.

ALVISO TO HAVE A NEW FRUIT CANNING COMPANY.—San Jose Herald: Alviso is to have a fruit canning company. The promoters are W. M. Gallagher, James Shields, R. Trevey, H. J. Richards, Walter Meads, S. T. Nicholson, B. A. Herrington, George E. Nicholson and Fred Burrell, most of whom are residents of Alviso. The seven first named constitute the board of directors for the first year. The capital stock is $25,000, of which $7050 is subscribed. The purpose of the company is to carry on a general canning and preserving business, and incidentally to deal in real and personal property. The title of the corporation is "The Fruit Canning Company of Alviso, California," and its principal place of business Alviso.

Santa Cruz.

APPLES AND POTATOES.—Watsonville Pajaronian: The Earl Fruit Company of this city has handled potatoes this winter for the first time since the local packing house was established and has done an extensive business along that line. The big packing house was full of spuds for some time, but the stock has been reduced to about 2000 sacks at present and will soon be cleaned up. It is the intention of the firm to so arrange its apple business that the packing house will be in operation the year round. Manager W. H. White is shaping his plans in that direction. He has just purchased twenty-two tons of evaporated apples from the Sang Lung Company at Pajaro.

STRAWBERRIES. — Pajaronian, Feb. 2: This season has been an unusual one in the strawberry line. Mr. Orrin Eaton has lots of berries yet on his ranch. He says the recent rains have made them quite mushy, and consequently in a short time he will commence pruning the vines. During the holidays Mr. Eaton shipped to Los Angeles 147 crates, and in January shipped sixty crates to the southern metropolis.

Solano.

CATTLE THIEVES BUSY.—Benicia special to Sacramento Bee: The cattle owners of Green Valley township are complaining that cattle rustlers are again at work in the vicinity. Geo. Mason, a large stock owner, reports that some one has attempted to get away with some of his beef cattle from a drove which has been pastured in the Daby hills. An employe found a rope around the horns of one of the beeves, which goes to show the thief had evidently tried to capture the animal but had to let go of the rope. Two head of cattle belonging to Fred. Dittmer recently disappeared and no trace of them has been found up to this time. On several occasions during the past few years cattle and hogs have disappeared from the pasture lands. About two years ago a raid was made by the rustlers, and so heavy were the losses of the ranchers that a reward of $500 was offered for the capture and conviction of the party or parties.

Sonoma.

RAIN DOING DAMAGE.—Healdsburg Enterprise: Mr. D. Walgamott, from the Rock Pile ranch, reports that the recent heavy rainstorm did not do much good, and was particularly bad for the sheep, as the lambing season was now on. There are over 2300 sheep running on the range, and he said he expected an increase of from 700 to 900 lambs.

Stanislaus.

LAND SALES. — Modesto News: The Stanislaus Land and Abstract Co. report the sale of eighty acres of the McHenry tract to A. McClaskey of Los Angeles, the consideration being $52.50 per acre. The same company has just sold to E. Grimes, a newcomer from Illinois, eighty acres of what is known as the "Bank land" tract, a short distance west of Turlock. Mr. Grimes paid $27.50 per acre for the land. He is here with his family, stock and household effects and is to move onto the land immediately, building houses, setting out trees and making other improvements.

Sutter.

MAY SEED THE LAND LATER.—Yuba City Farmer, Feb. 10: M. A. Girdner was over from West Sutter the first of the week, and in speaking of the overflowed land in that section caused by the water from the tules, he stated that if the river and tules did not keep high until late in the spring, the land would be again seeded to barley and produce a crop. On that land, if the season is favorable, a crop can be matured in two months.

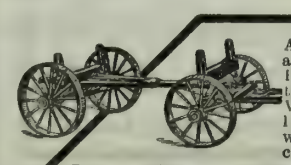
Tulare.

WILL EXPERIMENT WITH ALFALFA SEED.—Porterville Messenger: Some three weeks ago A. W. Lane sent to the Bureau of Agriculture at Washington for a sample package of nitrogen bacteria. The nitrogen bacteria is used to inoculate alfalfa seed in order to increase its productiveness, the increase said to be fourfold. The package that Mr. Lane procured is sufficient to inoculate the seed that will be used on a ten-acre patch that he will seed this spring.

PECULIAR CONDITION OF GRAIN FIELDS.—Times: J. J. Cairns, who is probably the most extensive grain grower in this county, reports a peculiar condition existing in the wheat fields in this district. He states that in many places the growing grain is 7 or 8 inches high, but that it is spotted, while alongside of the high grain and in what a few days ago were bare places, the grain is just springing out of the ground. Mr. Cairns says that one would naturally think that on what were the bare places the soil had not been sufficiently moistened to cause the grain to grow, which would be a reasonable conclusion to arrive at, but when he found grain just making its appearance above the ground alongside of that which is 7 or 8 inches high, it struck him as being peculiar, and he is a close observer of what happens in grain fields.

HOLSTEIN CATTLE.—Register: P. F. Wood has succeeded in interesting Messrs. Andrew and King of Los Angeles in this part of the country. He informs us that those gentlemen, who are extensive dairymen and butter manufacturers in the the southern part of the State, will unload 200 Holstein dairy cattle at Paige station, to be installed on the Hitchcock ranch.

LARGE ORANGES.—Visalia Delta: Manager A. E. Miot of the Tulare county exhibit received some very large oranges Friday from J. E. Barton at Three Rivers. Four of the oranges measure from 16 to 18 inches in circumference, and weigh eighteen and nineteen ounces.



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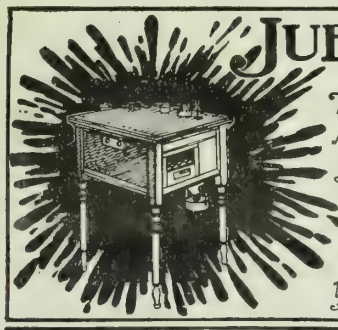
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Avoid Imitations.

The Home Circle.

Well Enough.

Down in the valley of "Well Enough"
men are careless and joyous and free;
They toil and they eat and they love a
bit, and they grow old happily,
While off in the hazy distance gleam the
peaks of the unknown, "Fame,"
And none that has traveled that difficult
steep can enter the valley again.

The way is o'er rocks, sharp and jagged
and cruel, through fierce heat, with
a deadening thirst,
While the water drips cool, far below in
the depths of the way that to him
is accursed.
How he longs, all in vain, for a friendly
hand clasp, for the smiles that were
ready and true;
But he may not turn back, so he strug-
gles along, with the joy of achieve-
ment in view.

And at last, oh, long journey! see torn
hands and feet, and face drawn and
wrinkled with pain,
He stands at the summit of great desire,
to dwell on his priceless gain.
And then—ah, the sadness of heartbreak!
was not that a man's cry of woe?
For he longs to return to the land he has
lost—to the "Well Enough" val-
ley below.

—Grace G. Bostwick.

The Enterprise.

I know an infant industry
Whose orders never cease,
The manufactured products sell
At just a cent apiece.

Within a building three feet high
The business has its home;
The gates are made of ivory,
And golden is the dome.

The factory runs all day long,
A most inspiring sight;
The heavy shipments mainly leave
By six o'clock at night.

It's been established just four years,
Of strikes is not afraid.
Small competition does it meet,
And loyal is its trade.

The owner, drummer, worker, all
Are found in one small miss
When Mabel perches on my knee
And tries to sell a kiss.

—McLandburgh Wilson.

The End of the Chase.

It was one of those dull, gray days of later autumn, which so often brings suddenly to its close a season of summer warmth and brightness. The woods resounded solemnly at every wind, the fields were a dull and expressionless green. There was that unmistakable look of change in everything which affects the sensitive nature as the subtle marks of age might do, noticed for the first time on some familiar and beloved face.

John Houston emerged from the woods and stood absently leaning upon his gun as he contemplated the long stretch of meadowland before him. He dreaded the tramp; undeniably he was growing old. His mirror had affirmed the fact beyond contradiction that very morning—the little square looking-glass before which he had shaved himself in his own room in the one inn of Mapleton. Why had he come to this place? he questioned. Ostensibly for hunting, but what did he care for hunting? The boys would have laughed to see his clumsy attempts at the game. He had been wise enough not to bring any of them along.

He was tired of his friends, wearied to the death of the club, worn to the verge of satiety with travel, and unreconcilable to his bachelor apartments—their hollowness was worse than the hollowness of the woods. He had not even brought his valet, the man bored him so with his automatic attentions. He wanted to go back to his youthful days again, when wealth had been only a dream, but there had been something infinitely better in his life. His physician had said that he was on the verge of a nervous collapse, and that he must have rest. He knew it was not rest he needed, but stir—the stir of life.

Often in these days he was tempted to adopt a child. When Sammy Houston's wife died he had made a high bid for the little boy—there was something in the child's eye that made him think of what he had lost out of life—but Sammy wouldn't let the baby go.

"I know I'm poor," the young man said, "but I can take care of my boy. He's all I've got to remember her by." He had not urged the matter, although he had felt his life would be more empty than Sam's without the child—Sam had the memory of his love.

He knew the men about town, the young men all envied him—longed to attain his position, his wealth and social standing. He hoped they would keep on doing so, and never know how small the whole thing seemed to him as he stood at the edge of the Mapleton woods this dark autumn afternoon.

It had been misting at intervals all day, and the thickly strewn leaves that in the morning had drifted on aromatic blasts, first this way, then that, were quiet now, and sodden. The wind was rising again, the mist becoming keenly palpable. John Houston knew it was setting in for a night of long-menaced down-pour. The rheumatic chills were creeping with icy clutches up and down his back. He felt he must be moving, for a siege of gout in a place like Mapleton would be unbearable. As he started forward, something—a gray, feathery thing—started up from a little pond just below in the meadow. He put up his eyeglass—it was a goose.

"But a goose is better than nothing," thought he. "I can't go back to that landlord with nothing in my bag." However, while he was collecting his scattered senses the goose flew away, making good time, as geese fly, over the meadow. John Houston started in pursuit. "All my life I have been on a wild-goose chase," he thought "I won't give up now." Over hillock, over bogs, now down in the oozy slush, now confronted by barbed wire fences, he kept up his chase after the gray goose. No one seeing this man now would have wondered at the concentration of purpose which had accumulated his immense fortune. Not one of them would have guessed that his purpose had failed in the one thing he deemed of moment in the world.

Suddenly he found himself up against a high board fence with a swinging picket gate in it—the goose had disappeared. It was raining torrents now. He opened the gate and stepped inside. There was a woman there—a tall, slender woman dressed in black, with a big flapping hat. She was feeding the geese. As John Houston looked at her he thought she might be thirty, or even forty, for the hair was a dead gray under the black hat. But she carried the grace and sprightliness of her prime in her lithe movements and vibrant voice as she called the geese about her.

"I beg your pardon, ma'am," said John Houston, "I—"

"Oh!" she said, turning sharply, "are you the man who frightened my geese so?"

"I'm afraid I am," said John.

"But you are wet," she said, quickly, noting the disheveled condition of the man. "It's a perfect downpour. Won't you come in and dry your clothes a bit?"

John Houston did not hesitate. Without realizing it, he was thinking of rheumatism and of the desolate room at the inn. He passed through the neat kitchen into the living-room. And such a room! He had never thought to see its like in Mapleton. Long, low, with a blazing fire at one end, it was filled with surprises of easy lounging places, divans and cushions.

"Make yourself at home," said the woman, motioning toward the blazing fire, "and I will have Sarah brew you a warm drink. You are chilled to the bone."

When she came back with a steaming cup on a little tray he was standing before the fire. He had thrown aside his cap and heavy hunting jacket, and was holding in his hand a picture he had picked up from the table. The darkness of night had set in, and with it the storm was increasing. The blaze leaped up from the open wood fire and shone on her as she entered. A woman never shows to better advantage than in the firelight. The gray hair was an illumination as it fell in girlish locks on each side of the face. The face was flushed with a delicate pink; her hospitality had been good for her—she looked almost young.

For a moment John Houston did not speak. There was a look in his face the men in Wall street would have been surprised to see. His lips were a little drawn and white, but when she advanced to set the tray on the table before him he managed to bring a kind of a smile. He took a step forward. "Agnes!" he cried, impetuously, 'Agnes, don't you know me?" The tray tumbled and the steaming liquid poured over the white hand, but she did not mind.

"John!" She was breathless. "John, where did you come from?"

"From chasing your old gray goose," he said. "All my life since you left me I have been on a wild-goose chase." They seated themselves. Explanations were in order. The hot drink was forgotten.

"Why did you run away from me, Agnes?" John Houston asked.

"Why? You must have known, John. Robert, my brother—he defaulted. We were so proud of him, mother and I. We paid every cent of that awful indebtedness—then Robert died. We came here to bury our grief and our shame. I was afraid of you—even of you, John—afraid of the disgrace."

John Houston rose and stood before the fire again. How handsome he looked—a man is not really old at fifty.

"I have been all my life on a wild-goose chase," he cried impetuously.

She rose, too, the old humorous tenderness on her face and in her eyes.

"But you have found your old gray goose at last," she said.—Grace Adele Pierce, in Los Angeles Times.

For Chapped Hands and Lips.

"These are the days when chapped hands and lips begin to be in evidence, and, as usual, I suppose most people will betake themselves to pure glycerine for a remedy," Mr. Edward Driscoll, chemist, observes to a St. Louis Globe-Democrat representative. "It is a mistake to presume that glycerine is a cure for this. Quite on the contrary, it is a distinct aggravant.

"One of the best remedies for chaps I know of is quite simple, and any one could compound it in their own home. Take ten grains of tragacanth and place in three ounces of moderately warm, not hot, water. It must then be allowed to stand for several hours, when the ounce of glycerine should be added. If it is desired to give the preparation a pleasant perfume, this may be obtained by adding a small quantity of oil of roses at the same time. The whole compound should then be mixed thoroughly, either by shaking it up well or stirring with a spoon, after which it is ready for use. This remedy is soothing, pleasant and an almost infallible cure after two or three applications. As a rule, unless the cracks in the skin are very much inflamed, an application of the compound just before retiring at night and another in the morning will generally have the desired result of healing them. It is also a fine preventive, and few will be troubled with chapped hands who rub it on the skin in the morning after washing."

Strength not Health.

Bulk fallacy, as we may call it, is noticable when a spectator praises and envies one set of hard local muscles, particularly those of the biceps, which are not elastic and flexible, but tough and fibrous, and, indeed, to speak accurately, are not all muscle, but to a large extent are connective tissue, which in literature we might call padding. Those who judge by sheer bulk err because they omit other considerations. When bulk helps, let there be bulk. When it does not help, when it is not wanted, let there be a smaller service and a better quality. Let there be always power to perform. Let there be increased health for nerves, character and intellect. Let there be asked a question. What will he do with it besides showing it? What good has he gained from having developed it? Is mere prominence of muscle of any use except to start a legitimate pride in the body? Is mere strength by itself of much use except for this and a few emergencies and feats?

That strength is health is an egregious fallacy. Some of the strongest men have died of consumption. Professor Dowd, the (theoretical) authority on physical culture, was a striking, or weight-lifting example. Those have not developed either their diaphragm or their common sense. Even all-round athletic success is not health. The man with a deadly disease may still be able to play a hard match admirably, owing to his eye, his constant practice, and perhaps even to the attraction of the system's poison to the one diseased part.

We must judge these performers not while they are performing, say up to the age of thirty-five, but when they are fifty years of age. How suddenly

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Your grocer tells you.
How does he know?
He don't.
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That's about how lamps are fitted with chimneys by people who don't use my Index; and they complain of bad chimneys! Lamp-Fits indeed! Do you want the Index? Free.

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do they consume! Merely to have used the muscles, as those and many others have, is not enough. Recently we have read in the writings of ten high authorities that walking is perfect exercise, because it brings all the muscles into play. For many it does not do so; it brings muscles into drudgery. Nor does it exercise all the muscles. For example, after abundance of walking practice try for a change to skate or to play cricket for all you are worth, or to play the piano.—Cassell's Physical Educator.

Food Value of Rice.

One charge against rice has been that it could never become popular with the masses because it takes too long a time and too much trouble to prepare it for the table; that the workingman, for instance, has to confine himself to food which is easily and quickly cooked. Rice can be cooked about as quickly as most articles of diet—as potatoes, for instance, one of the main factors in his meals. And it has a much greater food value than potatoes, its cost per calorie of food value, which gives physical strength and staying power, being only a trifle over one-half as much.

The Department of Agriculture is authority for the statement that "the accepted standard for a man at muscular work calls for 0.28 pound of protein and a fuel value of 3500 calories." Eleven cents worth of rice (at five cents per pound) would furnish the required fuel value, while the quantity of potatoes the same amount would buy would only supply 1980 calories. Both foods have to be supplemented to get the requisite quantity of protein—rice to a less extent, though, than potatoes, since for eleven cents one would get from rice 0.1840 pound of protein, and from potatoes only 0.1496. And the former will tax the system, in the work of converting it to the body's uses, not one-third as much as will the latter, rice being digested in one hour and potatoes taking 3½ hours.

The American workman, better paid than those of other countries, has sufficient means to buy good and ample food, and there is, therefore, no attempt made here to show him the least and cheapest food upon which he can subsist. The intent is rather to explode antiquated notions, founded in error, and to point out how good and healthful meals can be supplied and so save money, that, heretofore wasted through ignorance, can be applied to other needs of his family. The eating of meat and bread and potatoes, almost to the exclusion of every other description of food, under the supposition that these only make for the health and strength, is a costly practice, both for the purse and the physique. Rice, with a good deal less meat, and some of the legumes, would furnish a better rounded out meal, for a good deal less money, and much to the betterment of the family health.

In the purchase of a pound each of potatoes, wheat bread and beef (rib) as the constituents of a meal, there will be found an average of 13.6% of refuse, 47.2% of water, 7.6% of muscle-making ingredients, and 29.4% of heat and power furnishing material, while in a pound of rice there is no refuse, only 12.3% of water, almost as much muscle making ingredient, 6 8% and 77.7% of fuel value. As the pound of rice would cost about five cents and the average cost of the other articles of food would be about nine cents, it is easy to see that rice is much the cheaper, especially as only one-eighth of the pound of rice would have (practically) no food value, as against 61% of the other foods.

But the workingman would say that the difference in his relish for the latter over that for the lone dish of rice would amply repay him for the greater expense. He need not, however, confine himself to rice alone. The addition of the necessary meat and legumes would supply the appetizing features, and yet would not bring the cost up to that of the meal of meat, potatoes and wheat bread, while furnishing, and in better proportion, the necessary muscle making and fuel furnishing ingredients.

The Irishman is popularly supposed to exist exclusively on the potato, and to it is attributed his usually fine physique and great muscular power; but he owes these to the fact that he mixes a sour milk diet with the potato, and the former supplies muscle-making ingredients which the latter lacks.

In the rice producing countries rice is used as a substitute for the Irish potato and for wheat bread, being eaten alone or with a little dried fish or other seasoning. In China, Japan and Java the soy bean or its products, which is particularly rich in protein, is used to supplement the rice. Dr. S. A. Knapp says that while in Central India he observed that "the principal article of diet is rice used in connection with this bean, and the result is a fine specimen of physical manhood."

To workingmen, or any whose vocations or avocations render them liable to physical injuries, the further statement of the above-mentioned distinguished authority— "I also observed when abroad the effect of a rice diet upon the soldier, particularly in Japan, of whom it was said by the medical authorities that his wounds heal naturally, there being no such thing as gangrenous conditions and absolutely no fever in the blood; when he meets with ordinary injuries they heal without any particular attention, the same as would those of the wild animal in his native state—" should prove suggestive. —N. Y. Tribune.

Domestic Hints.

DRIED-APPLE CAKE.—Soak two cups of dried apples and when tender add one cup of raisins, one cup of molasses, one cup of sugar, a little cinnamon and cloves. Boil these to a syrup. When cool add one cup of sour milk, one cup of butter, two eggs and two liberal cups of flour carefully sifted two or three times. A teaspoonful of soda should also be added, either sifted with the flour or dissolved in the sour milk. Bake for two hours. This cake keeps some time and improves with age.

SPINACH SALAD.—Everyone knows that spinach is twice as good the second time it is heated, but not everyone knows that it is delicious eaten cold. A spinach salad is described in a new book of recipes, "101 Salads," by May E. Southworth. Take cold boiled spinach and season with butter, pepper, salt and lemon juice, and press into shallow cups. Put these on ice over night, if possible. Just before serving, unmold, hollow out little round places in the center of each, and fill with mayonnaise. Garnish the individual salad plates with watercresses and egg rings.

PORK GUMBO.—Cut into small dice two pounds lean pork. (In these recipes, where the pork is stewed or baked in tomatoes or water, salt pork may be used, provided it is well freshened.) Fry the pork a pale brown, add two sliced onions, and when these are brown add three bell peppers, sliced, and two quarts peeled tomatoes, with two teaspoonfuls salt. Let boil gently, stirring frequently, or 1½ hours. Peel and cut small one pint of young, tender okra pods and add. Cover again and boil half an hour longer. Cook in a lined saucepan, as tin will discolor the okra. With this serve a large dish of rice or hominy. Corn may be used in place of okra if the latter is disliked. The corn should be cut from the cobs and added half an hour before dinner time.

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California.

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The Markets.

San Francisco Produce Report.

San Francisco, February 15, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 16 @1 17	1 01⅞@1 00⅝
Thursday	1 16 @1 16	1 01⅛@1 00½
Friday	1 16 @1 16¾	1 00⅛@1 01
Saturday	1 16 @1 17	1 00⅜@1 01¼
Monday	*— @—	—@—
Tuesday	1 17 @1 18	1 01⅜@1 02

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	45¼@45	45⅛@45⅝
Thursday	45⅛@44¾	45⅜@46⅛
Friday	45⅜@45⅞	46⅛@46⅝
Saturday	45¾@46¼	46⅝@47
Monday	*— @—	—@—
Tuesday	46⅛@47¼	47 @47⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 50 @1 48¾	$1 29⅝@1 29½
Friday	1 48 @1 47	1 27⅝@1 28⅛
Saturday	1 47⅜@1 47⅝	1 28⅜@1 28½
Monday	*— @—	—@—
Tuesday	1 47⅝@1 48	1 29¾@1 29
Wednesday	1 47¾@1 48⅛	1 28¾@1 29⅛

*Holiday.

Wheat.

Business has been light in the wheat trade in this center since last review. There is not much offering, either spot or to arrive from any quarter. Bearish influences were at work part of the week, and speculative values were hammered down 2½@3c. per cental for no well defined reason. Trade was slow and, as is generally the case when there are few or no buying orders, prices are crowded downward in the speculative pit, as conditions then are most favorable for bears getting in their work. It costs little or nothing to "wash" the market down in dull periods. Effort was made to effect corresponding reductions in prices of spot wheat, but this was not attended with any noteworthy success. Where bears were able to dictate, the quotations for spot wheat were lowered, but buyers were unable to secure wheat of desirable quality at any appreciable decline from the prices which had been ruling. There was some recovery in speculative values on the report of poor crop prospects in France, and also discouraging advices from India. Local prices have been, however, above the parity of foreign values for some time past, owing to the shortage of home supplies.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.47@1.50.
December, 1905, delivery, $1 27⅞@1.29⅝.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.47¾@1.48⅛; December, 1905, $1.28¾@1.29⅛.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@—s	10@12½s
Local market	$1 35@1 40	$1 42½@1 47½

Flour.

There are no heavy stocks, especially of desirable qualities of recent make, and for flour of this description the market is firm at current rates, with little prospect of materially lower prices being experienced during the balance of the season. Trade on local account is of fair volume, but the outward movement is not of large proportions.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Although stocks in this center and throughout the State are light, a weaker feeling was developed in the barley market, the weakness being more pronounced in the prices of options than in actual values in the open market. May barley sold down to $1.17½ and Dec. option was crowded down to 90c., but these figures did not long remain current. Speculative prices averaged materially lower, however, than for previous week, with trading light. Business in the sample market was mostly in feed descriptions and on local account, with holders generally not disposed to sell at any marked cut in prices. Stocks in this vicinity, including Port Costa and Stockton warehouses, are less than 19,000 tons, as against 34,000 tons a year ago.

Feed, No. 1 to choice	$1 18¾@1 21¼
Feed, fair to good	1 16¼@1 18¾
Brewing, No. 1 to choice	1 22½@1 25
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

Receipts have been light, and with spot stocks of quite moderate proportions, the market has continued firm, especially for high-grade oats. Offerings are largely ordinary feed qualities. Strictly choice to fancy oats are not obtainable in a wholesale way and are hardly quotable.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

There are fairly liberal supplies of Eastern corn, straight and mixed, representing prior arrival purchases by local dealers. California product is in light stock. Values are ruling steady. There is some corn going to Central America and considerable local demand.

Large White, good to choice	$1 25 @1 30
Large Yellow	1 27½@1 32½
Small Yellow	1 60 @1 75
Egyptian White	—@—
Egyptian Brown	—@—
Eastern, sacked	1 25 @1 30

Rye.

Market presents a decidedly firm tone, inquiry being fair and stocks light.

Good to choice	$1 50 @1 55

Buckwheat.

Aside from supplies in the hands of millers, there is very little buckwheat here.

Good to choice	$1 75 @2 00

Beans.

For good to choice beans the market is strong, with light offerings of this description and increased inquiry for shipment. Movement has been mainly in Large White and Limas on Eastern account. Michigan is a great bean section, and nearly all of last crop in that State was badly damaged by wet weather at harvest time.

Pea, fair to good, 100 lbs	$2 90 @3 10
Small White, good to choice	3 15 @3 40
Large White	2 50 @2 75
Pinks	3 00 @3 50
Bayos, good to choice	2 50 @3 00
Red Kidneys	4 50 @5 00
Reds	4 00 @4 50
Limas, good to choice	4 00 @4 10
Black-eye Beans	2 50 @2 75

Dried Peas.

Market is quiet. Offerings are mostly more or less off in quality and for these there is little sale.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

Trade is not brisk in this center, nor are there advices of any great activity in Eastern and foreign centers. This time of year is almost invariably a dull period in the hop market. Stocks in the hands of brewers are reported to be light, and with supplies held by growers and dealers of quite moderate proportions, it is believed all the hops remaining will be required before the close of the season, provided the quantity consumed proves normal.

California, good to choice, 1904 crop	25 @28

Wool.

The local market remains much the same as previously noted, being inactive through lack of offerings, and dealers will likely aim to keep it much this way as they did last season, doing their purchasing mostly in the interior. Quotations are necessarily largely nominal. In Colorado heavy quantities of wool are reported contracted for at 17@19c., buyers paying down $1,000 or more on a contract to bind the same.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	21 @23
Middle County, defective	18 @20
San Joaquin and Southern, free	16 @18
San Joaquin and Southern, defective	14 @16
Southern lambs, as to quality	13 @17
Oregon, good to choice	21 @24
Nevada	16 @22

Hay and Straw.

Hay continues to be offered in more liberal quantity than is warranted by the immediate demand and market shows the same absence of firmness as for some time past. In quotable values there are no special changes to note, but sales at extreme figures are the exception and are confined to the very best qualities.

Wheat, good to choice	$11 00 @ 14 00
Wheat and Oat	9 50 @ 12 00
Tame Oat, fair to choice	9 00 @ 11 50
Wild Oat	8 00 @ 10 00
Barley	7 00 @ 10 00
Alfalfa	8 00 @ 10 50
Clover	7 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 14 00
Straw, ₱ bale	25 @ 55

Millstuffs.

Bran and Middlings are being quite steadily held, supplies being rather light and mostly in few hands. Market for Rolled Barley was slightly easier in tone but not quotably lower. Milled Corn products are offering at unchanged figures, with stocks of fair proportions.

Alfalfa Meal, ₱ ton	$21 00 @ 22 50
Bran, ₱ ton	20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 00 @ 26 00
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	32 50 @ 34 00

Seeds.

Business in this line is mainly of a retail character and at generally unchanged prices. There are no large spot stocks of any of the varieties quoted herewith.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13½
Canary	6¼@ 6¾
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

There is a moderate movement on local account and some small shipments are being made outward. Values are without quotable change, but dealers are desirous of reducing holdings and market is favorable to buyers, especially for other than most select. A carload of Comb Honey arrived from Nevada.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Demand is good for desirable qualities and market is firm at current rates.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Market is well stocked with Beef and is lacking in firmness, although not quotably lower. Receipts of Veal are not particularly heavy, but are ample for the demand at full current figures. Mutton is in good supply and market easy in tone. Choice Spring Lamb is not in large receipt and is bringing tolerably stiff prices. Hog market continues firm, particularly for the medium sizes, which are in request for fresh pork.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6 @ 6½
Beef, 2nd quality	5½@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5½@—
Hogs, large, hard, over 200 pounds	5½@ 5⅝
Hogs, small, fat	5½@ 5⅝
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	7 @ 9
Lamb, yearlings, ₱ lb	8½@ 9
Lamb, spring, ₱ lb	12½@15

Hides, Skins and Tallow.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@10	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@10	—@ 9
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@ 12½	—@11½
Dry Hides	17½@18	16½@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@1 75	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 50@—	
Horse Hides, salted, small	2 00@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Little doing in this department and no changes to note in quotations. Values for Grain Bags are ruling decidedly steady.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@6
Grain Bags, Calcutta, buyer June-July	6¼@6¼
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

There were fairly liberal receipts of Eastern poultry and moderate arrivals of domestic product, but there were no excessive offerings of choice young stock. Fryers in prime condition were in especially good request and met with a firm market. Turkeys were mostly rather poor, as is ordinarily the case at this time of year, and consequently were not much sought after. Fat Goslings were scarce. Choice Young Pigeons were readily placed at current rates.

Turkeys, Dressed, choice, ₱ lb	$ 20 @ 24
Turkeys, live gobblers, ₱ lb	18 @ 21
Turkeys, live hens ₱ lb	18 @ 21
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 6 50
Roosters, old	5 00 @ 5 50
Roosters, young (full-grown)	6 50 @ 7 00
Fryers	5 50 @ 6 00
Broilers, large	4 00 @ 4 50
Broilers, small to medium	3 00 @ 3 50
Ducks, old, ₱ dozen	5 00 @ 6 00
Ducks, large young, ₱ dozen	6 00 @ 7 00
Geese, ₱ pair	1 75 @ 2 25
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 00 @ 1 25
Pigeons, young	2 25 @ 2 75

Butter.

Market was weak and lower for fresh creamery and dairy, more particularly the former, supplies being heaviest of the highest priced stock. There is an active demand for cheap butter, both fresh and held, being wanted mainly for shipment East. The Eastern markets are strong.

Creamery, extras, ₱ lb	26 @—
Creamery, firsts	25 @—
Creamery, seconds	23 @—
Dairy, select	25 @—
Dairy, firsts	23 @—
Dairy, seconds	21 @22
Mixed Store	14 @16

Cheese.

There are no heavy stocks of domestic flats and current values are being well maintained on desirable qualities, with demand fairly active. Prices for Young Americas are ruling steady, but inquiry for this description is not brisk.

California, fancy flat, new	12 @—
California, good to choice	10½@11½
California, fair to good	10 @10½
California, "Young Americas"	10 @12½
Eastern	14½@15½

Eggs.

Prices in this market have been on the down grade, while values East have been booming, in consequence of freezing weather on the Atlantic side. Choice fresh were quoted up to 35c the past week in New York. Heavy shipments will probably be made from here in the near future, which will tend to more steadiness in local values.

California, select, large, white and fresh	24 @—
California, select, irregular color & size	23 @—
California, good to choice store	23 @23
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Stocks of most kinds of fresh vegetables were rather light and choice brought, as a rule, good figures. Peas and Tomatoes were in fair supply. Rhubarb was not plentiful, but moved rather slowly. Asparagus brought in small quantities 35@60c per lb. for good to fancy and 20@25c for No. 2. Onions were in moderate receipt, but were in the main firmly held, being mostly in second hands; 500 crates arrived from Australia.

Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	— @ —
Beans, Wax, ₱ lb	— @ —
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ₱ lb	10 @ 12½
Garlic, ₱ lb	8 @ 10
Mushrooms, ₱ lb	15 @ 25
Onions, Yellow Danver, ₱ ctl	2 50 @ 2 75
Peas, Green, ₱ lb	4 @ 6
Peppers, Bell, ₱ lb	10 @ 15
Peppers, Green, ₱ lb	4 @ 7
Rhubarb, ₱ lb	4 @ 6
Summer Squash, Los Ang., small b'x	65 @ 90
Tomatoes, ₱ box	75 @ 1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

River potatoes were in good supply and receipts from Oregon showed increase. There was a tolerably good demand, however, for strictly choice to select and market for best qualities was moderately firm. Demand for common stock was slow. Sweets were in ample supply for current needs.

Early Rose, ₱ cental	1 35 @ 1 50
Salinas Burbanks, ₱ cental	1 00 @ 1 50
River Burbanks, ₱ cental	65 @ 1 00
River Reds, ₱ cental	65 @ 75
Oregon Burbanks, ₱ cental	1 00 @ 1 30
Sweet Potatoes, ₱ cental	75 @ 1 00

Fresh Fruits.

There were further liberal receipts of Apples, mostly from the North, and coming on an already overstocked market, had a depressing effect. The bulk of the Apples now here represent prior arrival purchases by dealers and speculative operators. While the market lacked firmness throughout, common and medium qualities were most difficult to dispose of at satisfactory figures. Select Spitzenberg were salable up to $2 per box in a small way, but the figure was hardly warranted as a regular quotation. Fancy 4-tier Newtown Pippins, unwrapped, from Oregon, were sold at $1.50@1.65 per box.

Apples, fancy, ₱ 50-box	1 50 @ 1 75
Apples, good to choice, 50-lb. bx	1 00 @ 1 25
Apples, fair to good, ₱ box	75 @ 1 00
Apples, Lady, ₱ box	— @ —
Persimmons, ₱ regular box	— @ —
Strawberries, large, ₱ chest	— @ —

Dried Fruits.

Market for dried and evaporated fruits continues quiet, but firm in the main, with stocks of most kinds in few and strong hands and of too light volume to admit of any extensive wholesale trading. Prunes of the middle sizes are offering rather freely, but there are few of any

other sort, and buyers during the balance of the season will have to depend mainly on 60–70s. Apricots are in very slim stock and jobbers are asking an advance. Evaporated Apples are now almost wholly in second hands and are being very firmly held. Peaches are in quite limited supply and are mainly under control of a few houses, with every prospect that all this fruit will be required in the filling of Spring and early Summer orders.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4½@ 5
Apples, extra choice to fancy, 50-lb boxes.	6 @ 6½
Apricots, Moorpark	9½@11½
Apricots, Royal, good to choice, ℔ lb	8 @ 9
Apricots, Royal, fancy	9½@10½
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4¼
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Market is quiet and values are without quotable change. Present stocks and offerings are largely of the cheaper grades

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85 @——
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4 crown, 20-lb box	—— @1 30
Dehesas, 20-lb box	—— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¼@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

The Orange market has inclined against sellers most of the week, offerings being liberal and frosty weather operating against the demand. Lemons were held fairly steady, especially the better grades, but movement in them was not active. Market for Limes was firm, stocks of this fruit being light.

Oranges, Navels, ℔ box	75 @1 75
Oranges, Blood, ℔ box	——@——
Oranges, Seedlings, ℔ box	75 @1 10
Oranges, Cal. Tangerines, half box	75 @1 10
Oranges, Japanese Mandarins, ℔ box	75 @1 00
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 25 @2 00
Limes, Mexican, ℔ box	5 00 @5 50

Nuts.

Not much doing in either Almonds or Walnuts, offerings and demand being both of limited proportions. Stocks are mostly in jobbing hands.

Chestnuts, Italian, ℔ lb	7 @ 9
Nonpareil Almonds	14 @16
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	6 @ 7
Cal. Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

Market has developed no appreciable changes, so far as observable, since date of last report. Dry wines of 1904 are quotable wholesale at 14@17c. per gallon for fairly good to choice, San Francisco delivery, with movement light from first hands. Sweet wines of last vintage are held at 25c. per gallon at wineries, the buyer having to furnish all cooperage. Receipts of wine at San Francisco last week were 455,005 gallons, and for preceding week 509,250 gallons. The steamer City of Sydney, sailing Saturday last, carried 83,098 gallons and 74 cases, including 73,358 gallons for New York.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	66,516	2,982,685	3,712,869
Wheat, ctls	28,268	2,173,302	1,602 228
Barley, ctls	43,460	2,675,473	4,654,320
Oats, ctls	6,210	685,211	738,206
Corn, ctls	5,546	147,779	108,882
Rye, ctls	2,561	42,002	41,093
Beans, sks	12,877	480,337	577,190
Potatoes, sks	25,077	886,240	914,856
Onions, sks	2,236	97,666	110,509
Hay, tons	4,500	126,719	122,750
Wool, bales	83	40,263	35,466
Hops, bales	640	36,251	28,426

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	32,412	2,141,668	2,533,084
Wheat, ctls	511	799,988	740,071
Barley, ctls	8,186	1,680,619	3,694,200
Oats, ctls	467	51,042	16,119
Corn, ctls	2,917	69,958	12,527
Beans, sks	412	40,655	32,359
Hay, bales	5,761	178,514	115,435
Wool, lbs	....	830,690	1,848,923
Hops, lbs	19,271	297,139	525,718
Honey, cases	6	1,513	4,152
Potatoes, pkgs	1,862	72,485	77,397

Alfalfa Seed Growing.

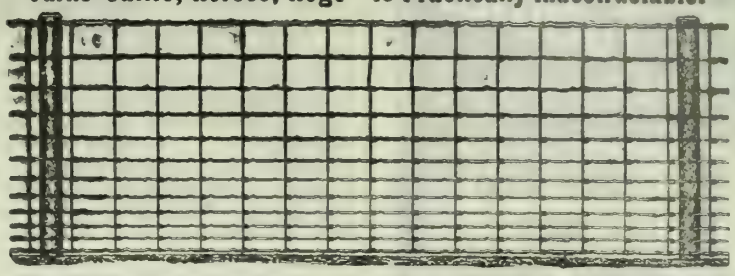
J. H. Butts of Hanford tells the Stockton Mail that in his region it has been found profitable there to sacrifice some of the hay in order to raise seed. It doesn't cost as much to ship seed as t does to send hay by rail, and those who have been growing seed make more than the people who get five or six crops of hay a year. When seed is produced, there is ordinarily one crop of hay preceding the seed harvest.

The seed is threshed with a regular clover thresher, along in August or September. The stalks have to be dry at the time. The alfalfa is mown in the old style and allowed to lie on the ground for awhile. In selecting seed, care must be taken to pick out a field that is entirely free from dodder, because dodder will cause no end of trouble if sown with alfalfa. After threshing, the chaff is eaten greedily by stock, as it is in better condition than before.

DRAGGED TO DEATH BY COW.—Lodi special to Sacramento Bee: This community was shocked yesterday by one of the most harrowing accidents ever occurring in the county. Twelve-year-old George Wilke was dashed and dragged to death by a cow. He tied the rope around his waist when the bovine was captured and attempted to lead it home. Around the pasture the cow went, dragging the youth's body. With the shaking of the cow's head the form of the boy was first carried into the air, then dumped hard upon the ground, where it came in contact with trees and grape vines. Bones were broken with every movement of the cow, and it seemed as though the poor boy would be torn to shreds. His clothing was raked off his body in a short time. His head struck trees, scattering his brains around the orchard. The almost unrecognizable form of young Wilke was picked up dead by loving relatives who were unwilling witnesses to the awful death.

Stands Like a Stone Wall

Turns Cattle, Horses, Hogs—Is Practically Indestructable.



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When you buy fence for present needs, are you thinking of ten—yes, twenty—years hence? It pays to think ahead—to study the fence question. The fence of greatest weight per running rod is American.

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for BUTCHERING, LIFTING HAY, WAGON BOXES, STRETCHING WIRE, ETC. Does away with the labor of two or three men. Guaranteed not to cut the rope.

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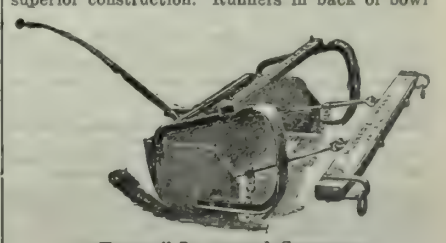
GOPHER DEATH

Destroys Gophers, Ground Squirrels, Prairie Dogs and other Rodents. Put up in morsel they love like children love candy, 1,400 tablets in a box. One will kill a gopher. Price $1.25. Warranted. Ask your druggist to get it for you now, so he will have it when you need it. If he don't, then send us price and we will forward it prepaid. Raticide Tablets for Rats 25c. Send for booklet. FORT DODGE CHEMICAL CO., Fort Dodge, Iowa.



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Not to be compared to the ordinary Fresno Scraper offered on this coast. Heavier material, stiffer and superior construction. Runners in back of bowl



"Fresno" Improved Scraper.

3½-foot, 4-foot and 5-foot.

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Only Bowl With Proper Bearing

All "bucket bowl" separators have incorrect bearings. **The bowl is set upon the spindle and held upright by rigid bearings.** Such bowls are top heavy, inclined to wobble, sure to bind.

Tubular bowls, only, are properly supported, being suspended from and turning upon a single ball bearing. A breath almost turns them. They cannot wobble or bind. Catalog L-131 tells all about them.

The Sharples Co. Chicago, Ill. P. M. Sharples West Chester, Pa.

THE VETERINARIAN.

New Quarantine Line.

Under the recommendations of Dr. Charles Keene, State Veterinarian, the authorities at Washington have issued a special order, modifying the cattle quarantine line in this State. The new line is as follows: Beginning on the Pacific coast where the north boundary line of San Luis Obispo county connects with the Pacific ocean; thence easterly along the north boundary line of that county, thence along the west boundary of Kings and Fresno counties to the western corner of Fresno county, thence along the western, northern and eastern boundary of Merced county to the southeast corner thereof; thence along the northern boundary of Madera county to the northeast corner thereof; thence along the eastern boundary lines of Madera, Fresno and Tulare counties to the southeast corner of Tulare county; thence along the southern boundary line of Inyo county to the eastern line of the State.

It is ordered that during the continuance of said line, no cattle originating in the quarantined area of the rest of the United States shall be moved or allowed to move into the counties of Kern, Tulare, Kings, San Luis Obispo, Fresno, Madera and Merced.

No cattle shall be moved or allowed to move from any of these counties (unless for immediate slaughter) to any of the territory in the State of California, outside of the quarantined district, except having been inspected and found free of infection by a duly authorized Inspector of the National Department, or of the State of California, and upon written permission by such officer.

No cattle can be moved from within the quarantined lines to other States or Territories, except under like provisions.

THE man who uses ordinary soap for shaving has his troubles and plenty of them. His razor pulls, the lather dries on his face, and when he has finished, his face smarts and stings and itches. Williams' Shaving Soap avoids all this. It makes a thick, creamy lather which softens the beard, makes it easy for the razor, and leaves the face cool, smooth and comfortable. The J. B. Williams Co. of Glastonbury, Conn., whose announcement appears in another column, will send a free trial sample of Williams' Shaving Soap if you write to them.

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G 355 Dearborn St., Chicago.
G 236 West 5th St., Los Angeles.

California Building at the Portland Fair.

The building which California will erect at the Lewis and Clark Centennial will be one of the finest and largest on the grounds and will cost $40,000. It will be of unique and appropriate design. The plans provide for a structure in the form of a cross, each wing to represent an old California mission. These missions are the Santa Barbara mission, the El Carmel mission near Monterey, the Dolores mission at San Francisco and the San Carlos mission at San Diego. Each wing will present an exterior different and distinctive, and the reproduction of the four missions will be faithful and exact as to detail. The building will be two stories high. In the central dome a chime of mission bells will be installed. Work on the structure will begin at once, and it will be completed in time for the opening of the Exposition, June 1.

California's elaborate and complete exhibit, which will be collected at a cost of $50,000, will be shown in this building. The exhibit will show in a comprehensive manner the resources of the State along the lines of forestry, mining, dairying, fruit raising, irrigation and fisheries. The exhibit will be under the direct supervision of Governor Pardee. J. A. Filcher will be commissioner in charge.

Farming Corporation in Canada.

A large corporation has been organized for fruit growing and general farming in the Annapolis valley, Nova Scotia. The company has secured options on thirty farms, with an aggregate acreage of 3000, in the heart of the fruit belt, and proposes to set out 40,000 new trees, put in a box and barrel factory, install a canning and vinegar plant, and engage in general farming, cattle, sheep and hog raising.

CRAMPS Colic, and all stomach troubles instantly relieved with Painkiller (PERRY DAVIS')

This famous remedy never fails to cure pain of both external or internal.

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Gets ALL the Cream. Complete separation in 60 to 90 minutes is made by circulation of cold water thro patented Center Column and Outside Jacket. Simple. Practical. Water and milk do not mix. "Equals a $150 machine." *60,000 Farmers use it.*

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New 50 H. P. Fairbanks-Morse Oil Engine.

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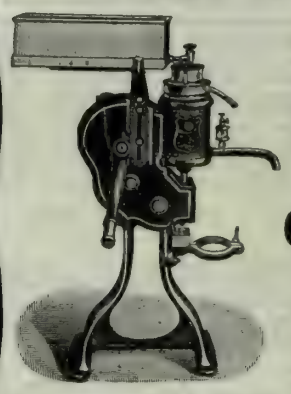
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NEVER EQUALLED BY ANY OTHER SEPARATOR

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LARGER THAN PLYMOUTH ROCKS.
A start with my stock will give you a flock of THE BEST.
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Percherons, Belgians, Shires, Clydes, French and German Coach, Hackney and Trotting Stallions.

At St. Louis Exposition World's Fair 1904 our record beat all other exhibitors, winning in open and special competition 34 prizes with 27 horses; also at Columbian Exposition in 1893, at Chicago, 35 horses won in open and specials 63 prizes.

For the Benefit of Our Pacific Coast Customers We Have Opened a Branch Barn at Folsom, Cal.

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FOR SALE—REGISTERED AYRSHIRE BULLS

At reasonable prices. For further particulars inquire of
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Won, at the St. Louis World's Fair Dairy Demonstration: Test A, economic production of butter-fat and butter, and Test B, economic production of milk for all purposes related to dairying, on

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We also own the following cows in the St. Louis Tests:

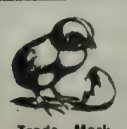
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Also, have a herd of Gernseys selected with great care.
Prize winning Berkshires.
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Write, stating what you want.
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EACH VARIETY THE BEST OF ITS KIND.

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Established 36 Years.

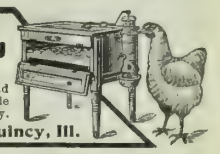
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Demand for young stock is good.
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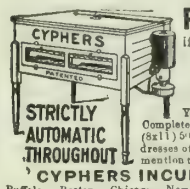


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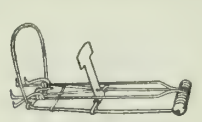


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FORESTRY.

The New Arrangements for Forest Control.

To the Editor:—The accompanying copy of a letter of instructions from the Secretary of Agriculture to the Forester is sent you in order that the change just accomplished in the control of the National Forest Reserves, and the policy of the Department of Agriculture concerning their management may be fully understood.

The "Forest Service" therein referred to is the new official title of the organization having immediate charge of all National forest work under the Secretary of Agriculture. It replaces the Bureau of Forestry in the Department of Agriculture, and the Division of Forestry in the General Land Office.

Gifford Pinchot, Forester.

Washington, D. C., Feb. 3.

To the Forester, Forest Service, Sir:—The President has attached his signature to the following Act:

"An Act providing for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture.

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Department of Agriculture shall, from and after the passage of this Act, execute or cause to be executed all laws affecting public lands heretofore or hereafter reserved under the provisions of section twenty-four of the Act entitled, 'An Act to repeal the timber culture laws, and for other purposes,' approved March third, eighteen hundred and ninety-one, and acts supplemental to and amendatory thereof, after such lands have been so reserved, excepting such laws as affect the surveying, prospecting, locating, appropriating, entering, relinquishing, reconveying, certifying or patenting of any such lands.

"Sec. 2. That pulp wood or wood pulp manufactured from timber in the district of Alaska may be exported therefrom.

"Sec. 3. That forest supervisors and rangers shall be selected, when practicable, from qualified citizens of the States or Territories in which the said reserves, respectively, are situated.

"Sec. 4. That rights of way for the construction and maintenance of dams, reservoirs, water plants, ditches, flumes, pipes, tunnels, and canals, within and across the forest reserves of the United States, are hereby granted to citizens and corporations of the United States for municipal or mining purposes, and for the purposes of the milling and reduction of ores, during the period of their beneficial use, under such rules and regulations as may be prescribed by the Secretary of the Interior and subject to the laws of the State or Territory in which said reserves are respectively situated.

"Sec. 5. That all money received from the sale of any products or the use of any land or resources of said forest reserves shall be covered into the Treasury of the United States and for a period of five years from the passage of this Act shall constitute a special fund available, until expended, as the Secretary of Agriculture may direct, for the protection, administration, improvement, and extension of Federal forest reserves.

"Approved February 1, 1905."

By this Act the administration of the Federal forest reserves is transferred to this Department. Its provisions will be carried out through the Forest Service, under your immediate supervision. You have already tentatively negotiated the transfer with the Commissioner of the General Land Office, whose powers and duties thus transferred I assign to you. Until otherwise instructed you will submit to me for approval all questions of organization, sales, permits, and privileges, except such as are entrusted by the present regulations to field officers on the ground. All officers of the forest reserve service transferred will be subject to your instructions and will report directly to you. You will at once issue to them the necessary notice to this effect.

In order to facilitate the prompt transaction of business upon the forest reserves and to give effect to the general policy outlined below, you are instructed to recommend at the earliest practicable date whatever changes may be necessary in the rules and regulations governing the reserves, so that I may, in accordance with the provisions of the above Act, delegate to you and to forest reserve officers in the field, so much of my authority as may be essential to the prompt transaction of business, and to the administration of the reserves in accordance with local needs. Until such revision is made, the present rules and regulations will remain in force, except those relating to the receipt and transmittal of moneys, in which case Special Fiscal Agents of this Department will perform the duties heretofore rendered by the Receivers of Local Land Offices in accordance with existing laws and regulations. The Chief of Records, Forest Service, is hereby designated a Special Fiscal Agent, and you will direct him at once to execute and submit for my approval a bond for twenty thousand dollars.

On December 17, 1904, the President signed the following order:

"In the exercise of the power vested in the President by Section 1753 of the Revised Statutes and acts amendatory thereof:

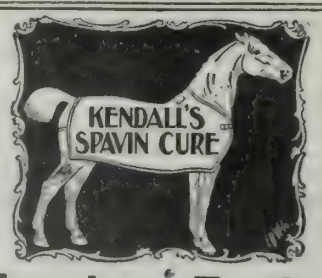
"It is ordered, That all persons employed in the field and in the District of Columbia in the 'protection and administration of forestry reserves in or under the General Land Office of the Interior Department' be classified and the civil-service Act and rules applied thereto, and that no person be hereafter appointed, employed, promoted, or transferred in said service until he passes an examination in conformity therewith, unless specifically exempted thereunder. This order shall apply to all officers and employes, except persons employed merely as laborers, and persons whose appointments are confirmed by the Senate."

This order classifies the whole Forest Reserve Service, now transferred, and places it under the civil-service law.

In the administration of the forest reserves it must be clearly borne in mind that all land is to be devoted to its most productive use for the permanent good of the whole people and not for the temporary benefit of individuals or companies. All the resources of forest reserves are for use, and this use must be brought about in a thoroughly prompt and businesslike manner, under such restrictions only as will insure the permanence of these resources. The vital importance of forest reserves to the great industries of the Western States will be largely increased in the near future by the continued steady advance in settlement and development. The permanence of the resources of the reserves is therefore indispensable to continued prosperity, and the policy of this Department for their protection and use will invariably be guided by this fact, always bearing in mind that the conservative use of these resources in no way conflicts with their permanent value. You will see to it that the water, wood, and forage of the reserves are conserved and wisely used for the benefit of the home builder first of all; upon whom depends the best permanent use of lands and resources alike. The continued prosperity of the agricultural, lumbering, mining and live stock interests is directly dependent upon a permanent and accessible supply of water, wood and forage, as well as upon the present and future use of these resources under businesslike regulations, enforced with promptness, effectiveness and common sense. In the management of each reserve local questions will be decided upon local grounds; the dominant industry will be considered first, but with as little restriction to minor industries as may be possible; sudden changes in industrial conditions will be avoided by gradual adjustment after due notice; and where conflicting interests must be reconciled the question will always be decided from the standpoint of the greatest good of the greatest number in the long run.

These general principles will govern in the protection and use of the water supply, in the disposal of timber and wood, in the use of the range, and in all other matters connected with the management of the reserves. They can be successfully applied only when the administration of each reserve is left very largely in the hands of the local officers, under the eye of thoroughly trained and competent inspectors.

James Wilson,
Secretary of Agriculture.



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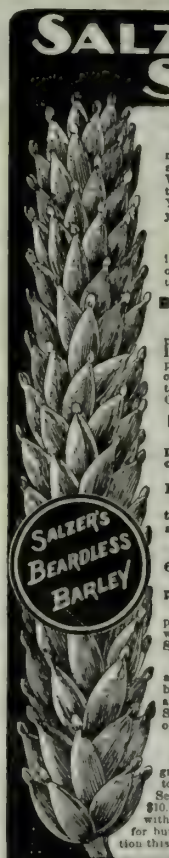
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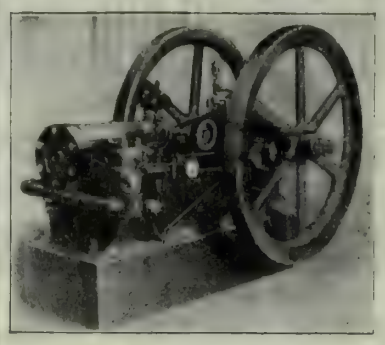
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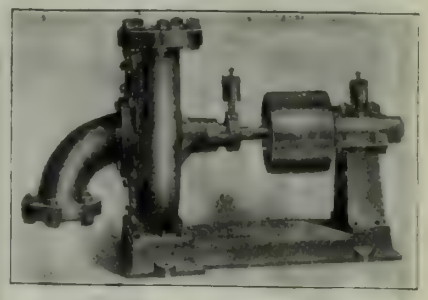
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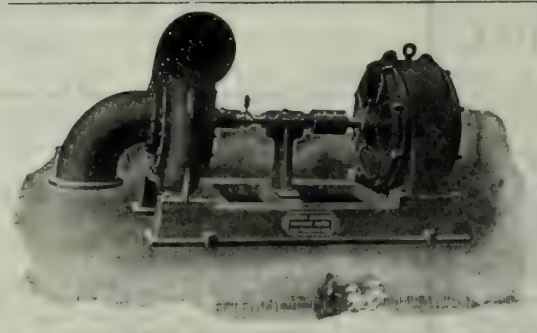
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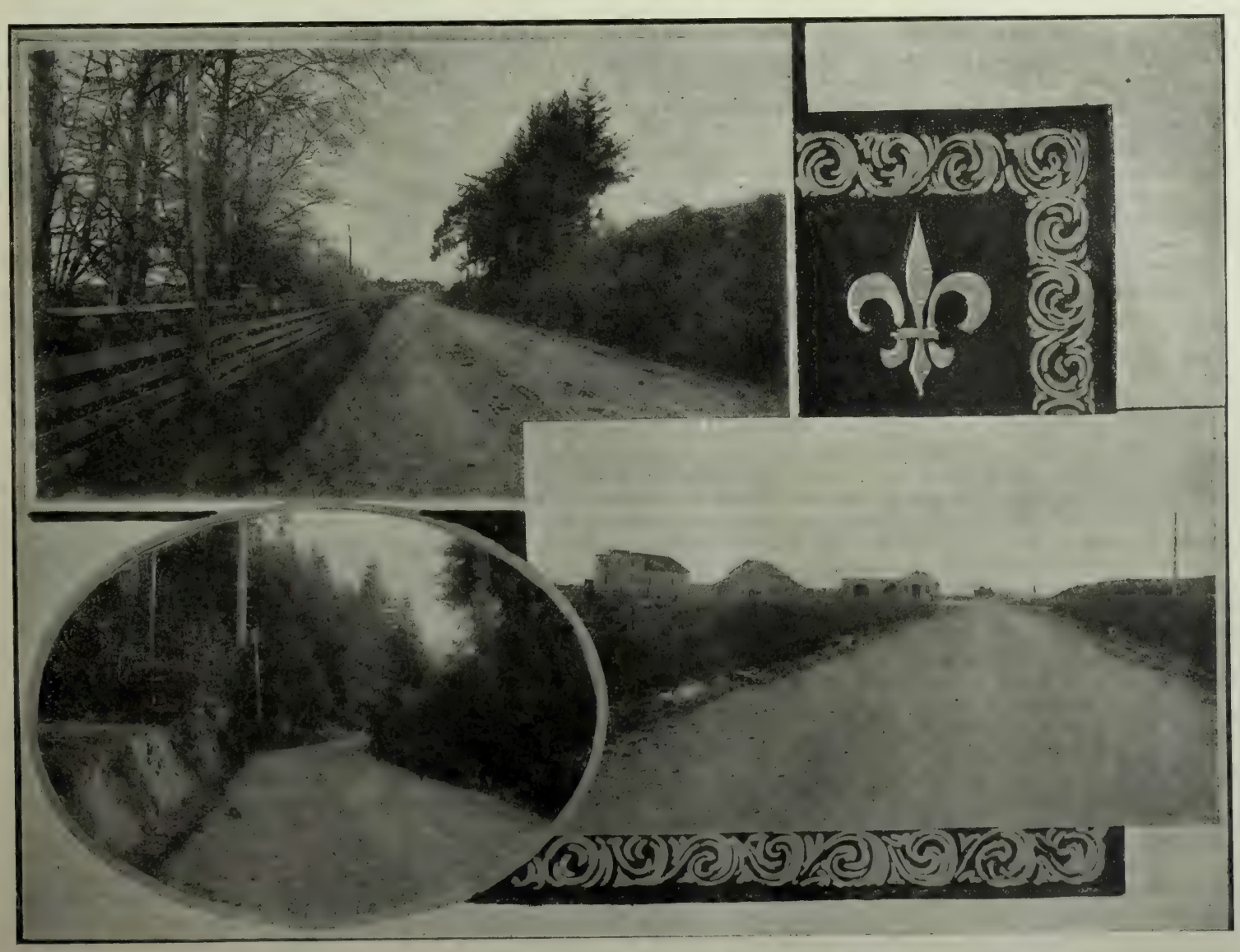
Vol. LX. No. 8. SAN FRANCISCO, SATURDAY, FEBRUARY 25, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Well-Graded Roads.

We use a group of pictures from Humboldt county to illustrate a matter which is very timely, now that we are in the midst of a very wet season, and that is the importance of proper grading in the laying out of even common dirt roads. Although the higher forms of road making, which secure a tight roof over the subsoil of the roadbed and thus prevent the entrance of water to soften it, should be secured as fast as is possible without creating too great burdens of taxation, it is also true that much improvement can be secured without going to such expense. We have been over roads in the interior valley during the last week where the stretch of surface set apart for travel looked like a canal carefully fenced in, so that no one could fall into it from the adjacent fields and be drowned. The dust wholly free from sprinkling or other treatment to check its lightness and portability had been blown from the highway during the long dry season preceding, until the roadbed was really the lowest piece of ground in the neighborhood, and into it all the surplus water flowed. This condition of affairs is well shown in one of the pictures on this page, where one of the traveling outfits of the State Highway Commissioner struck a frightful instance of neglect in road building during a road survey of Kern county. Of course, there is some excuse for Kern county, because it is an immense county, with a very light rainfall, and probably an exceptional storm induced the condition of affairs which the picture shows. The same sort of a picture could, however, have been secured last week in nearly all the counties of the State, and in many of them, because of regularity of heavy rainfall, the possibility of it should be provided against. Even on common dirt roads, except, perhaps, the worst clay districts, such a swamping of the roads and such depth of mud could be prevented by the very commonest precaution—a proper grade and outflow of drainage into channels.



The Sort of Road Which Results From Lack of Grading and Drainage.



Glimpses at Properly Graded Roadways in Humboldt County, California.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, FEBRUARY 25, 1905.

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The Week.

That peerless exponent of the salubrity of the climate of northern Sonoma county, the Cloverdale Citrus Fair, is opening its doors as we go to press on Wednesday, and will continue to delight local residents and visitors from abroad during the balance of the week. Citrus growing at Cloverdale is a particularly delightful affair, because it is largely an amateur affair and is attended by all the enthusiasm of the amateur, who need not measure his success by commercial limitations. For this reason the Cloverdale Citrus Fair is one of the most interesting events of the year on the social side of horticulture, and has a spirit of pure delight about it which one does not find anywhere else in California at the present time. It always reminds us of the joyful displays at Riverside a quarter of a century ago, when commercialism had hardly arisen in the citrus interest and the growers looked upon the fruit with something like the ecstacy with which Adam regarded his Edenic product before the question of horticulture for a livelihood entered into his experience. We hope there will be a great throng at Cloverdale this week to see such masses of glorious fruit grown so near to San Francisco, to form the acquaintance of the dwellers of one of the most delightful rural communities in California, and to enjoy the warmth of their hospitality, and to join with them in expressions of satisfaction with life in California.

Spot wheat here is steady and unchanged, while futures have fluctuated but slightly, though a little lower tone is discernible for the coming crop. Chicago is higher for May and July, though the talk there is weaker. For charters 20s is bid for the United Kingdom and 22s 6d for Europe. Barley is rather weak for spot and futures have sagged, probably due in part to the refusal of a ship loaded to run the blockade to Vladivostock. The grain, however, is transferred to go to Japan. There is also barley here from Kansas at $1.12½ for export, having come through on a cut rate for that purpose and not open to local sale. Oats are firm in absence of receipts, and both corn and rye are higher. Beans are strong with an active demand for shipping. Bran and middlings are quiet and steady. Hay is rather worse and not helped by throwing back a large shipment bought for Russia. Beef and mutton are unchanged and quiet, while hogs and lamb are strong—the latter in small supply. Butter has improved and the higher grades are now firm at the recent decline and lower grades scarce. Cheese is very firm, and stocks light. Eggs are weaker and shippers are not buying, waiting for a drop. All desirable poultry is strong. Potatoes for table and seed are in good demand for choice to select, but others in full supply and slow. Onions are firmly held, but there is not much movement. Receipts of asparagus are large enough to be seen—at 25 to 40 cents per pound. Oranges are in good supply and fair demand, but at rather a low range. Tangerines are in small supply. Pomelos are doing better. Lemons are quiet and barely steady. There is little doing in dried fruit and stocks are small. One shipment of 47,000 pounds, three-fourths prunes, has gone to Winnipeg. Nuts are slow and unchanged, and honey is quiet and weak. Hops are slow and more disposition to sell. Eastern and foreign wool markets are firm, but there is nothing to do with here.

It is very interesting to note the Pacific Rural Press has been chosen by the officers of the State Grange of California as the official organ of the order in this State, and that by this appointment a considerable accession of new names comes to our lists. The officers of the Grange have wisely concluded that there is much advantage in affiliation with an agricultural journal of recognized standing, age and respectability, which reaches tens of thousands of readers and is welcomed by them all. We feel that the position we have attained by decades of conscientious effort in promotion of the interests of the agriculturists of California will be of much value to the order in general and to the subordinate Granges in their efforts to build up their membership and make their influence more widely felt in the community. The order of Patrons of Husbandry was in a large measure planted in California by the Pacific Rural Press more than thirty years ago, and we are glad to return to closer official connection with the Grange than has existed during the last few years. Though our columns have always been open to Grange writers who could offer something of such wide interest as our circulation justly requires us to set forth, the members of all subordinate Granges, as well as the officials of the State Grange, should feel that the way is now wide open for the declaration of their best thoughts, and for accounts of their most interesting and important transactions. We have no space for trivial personalities, which are merely for the passing moment, nor have we any liking for the pessimism and narrowness which some almost unconsciously fall into. Let us have plenty of Grange writing which is accurate in facts of interest and helpfulness, which is broad and progressive in views. Such things as these lie at the foundation of Grange advancement and such things are in thorough harmony with the spirit of the order. It has suffered from prejudice, from prejudgment from either ignorance of facts or blindness to them. Let us have plenty of exhortations to Grange extension free from all these evils and full of courage and confidence, and we can do something for the Grange with the rising generation.

Speaking of the Grange, it is interesting to note the progressive work which a distinguished California granger, Mr. David Lubin of Sacramento, is doing for industrial organization abroad. The telegraph the other day told of Mr. Lubin's success in attracting the attention of Italian statesmen and economists, including the personal interests of the king himself. An Italian newspaper says: "We cannot refrain from manifesting our pride as Italians in a fact which will make the name of King Victor Emanuel applauded from the Italian frontier to the country of George Washington." Mr. Lubin credits the Italian King with the initiative in international organization of agriculturists which will be of supreme importance. The purpose of the International Chamber of Agriculture is not to create abnormal conditions, but to bring about and maintain as normal conditions which are now normal. No consumer should object to pay normal prices, even if some of them be higher than those now prevalent. If consumers understood the reason for this they would not only consent to pay normal prices, but would eagerly desire it, as in the end prices would become equalized. This he conceives can not be done by the Government of any country, but must be by international agreement. The thousands of documents and facts from throughout the world are too numerous to be mastered by a Minister of Agriculture, he having no means at his control to establish the authenticity of the facts, his jurisdiction being bound by his own nation and his powers being limited and prescribed by law. He also has no power to influence other nations which act and react upon his own nation. For instance, in America the Department of Agriculture is unable to abolish the evil tendencies of trusts, combines and mergers, which made American agriculture lose $700,000,000 last year. But an international chamber can do more than this, and this is the end toward which Mr. Lubin strives through the initiative now taken by the King of Italy. Let the subordinate Granges secure from Mr. Lubin a full statement of his plans and reasons for them and give the matters thorough discussion.

QUERIES AND REPLIES.

Cover Crop for Ventura County.

To the Editor:—Can you give me some information as to the best plant for a cover crop suitable to our district? There is a strong feeling here that our soil needs fertilizing, as much for the loosening of the land as for the benefit of the crop from the standpoint of manure, but with the uncertain rainfall it would be necessary to irrigate it in a dry autumn to secure the growth of the cover crop, which we should want to plow under in the early spring to ensure it rotting before planting time. Lima beans is the principal crop, and is planted in May and sometimes as late as June, according to temperature of soil.—Reader, Ventura.

What is finally to be the best cover crop for winter growing in California cannot yet be determined. Many plants have been tried. Some of them are promising, but some others may prove on further trial to be better. On the whole, the plants which seem to be best so far are common burr clover and field peas—either the common field pea of California or the Canadian field pea, both of which are hardy enough to make good winter growth. One would think, however, that the growth of Lima beans, which are themselves nitrogen gatherers, would give your soil sufficient of that element, and that experiments in the line of phosphoric acid and potash fertilizers would be desirable to make, but the mechanical effect upon the soil of plowing in a winter grown crop is, of course, important.

Palms and Umbrellas.

To the Editor:—We wish to set out trees in our schoolyard and desire that some of these be palms—as rapid growers as will do well here. We would like some fern palms and some fan-leaved palms. Will you kindly inform me of the name of the best kind for us? Also, which umbrella tree has the most dense top?—Teacher, Shasta county.

The most hardy of the pinnate leaf palms is the Phœnix canariensis, commonly called Canary Island date palm. This is undoubtedly the best for your planting, for, if this will not endure, none of the fan-leaf palms will. The best fan leaf palms are the California fan palm (Washingtonia robusta) and the Japanese fan palm (Chamærops excelsa), both of which are quite hardy. You can get all these palms from any of the larger nurseries which carry such plants, because they are so widely used. The best umbrella tree is the Texas umbrella tree (Melia azedarach umbraculifornis). This is entirely different from the other species and has an umbrella shape with very dense foliage and is the tree which is most abundant in the region of Fresno.

Reclaimed Lands.

To the Editor:—Kindly inform me of the risks from overflow on the island lands near Stockton. Are those that have been worked a number of years safer than those that were reclaimed last year? Would like to rent 100 acres for potatoes, if safe, with a purpose to buy a small piece if favorable.—Inquirer, Soquel.

Naturally an old reclamation, with levees tested and settled and repaired more or less as needed, would be considered a safer proposition than a new reclamation, which has these tests and repairs still to be made. But there still remains the question of the height of the river, the erosion, the wind and a number of other matters, and some of these things have caused the flooding of some districts even after the levees had stood well for years. All levees are, however, made now in much better style than formerly, and the risk in taking up a new reclamation is less. It is, however, a business risk which each one has to size up and act upon for himself.

Unprofitable Oranges.

TO THE EDITOR:—I have ten acres of oranges, five planted fourteen years ago to Washington Navels and five planted twelve years ago to Mediterranean Sweets, but which were budded four or five years ago to Navels also, making the ten acres Navels. I have always paid for first-class care, and for the past five or six years have spent about $750 for fertilizers, mostly stable and sheep manure, but up to the present it has not paid expenses. The land is rolling, with a southern and eastern exposure, and has a sort of natural ditch running through it, which drains it pretty well. The trees, as a general thing, are large, fine and thrifty looking. Of course all the trees that were cut back four or five years ago are only just coming into bearing again, and from the balance of the trees (about 350 to 400) I got about 425 boxes this year. A carload of these I sold at the East, but when they arrived here they were disappointing. First, they were too large; second, they were too tough in skin; third, they were too thick in skin, and fourth, although they boast in the northern citrus belt that they grow and ripen oranges from three to six weeks earlier than in southern California, yet they were too green for the retail Christmas trade and greener than the southern product. Was this because of the stable or sheep manure making too rank a growth to yield a fine orange? The flavor was all right at Christmas when a little green, better than the southern article, but I find it is the appearance that sells the orange. Possibly I ought to explain I know nothing whatever about orange growing except what I have read in books. From my experience with the carload of fruit I had here this season I find I must learn to grow a smaller orange, a smoother orange and a thin skinned orange, and more of them in order to be successful, and if you can help me in any way to do this you will be conferring a very great favor on me.—SUBSCRIBER, New York.

Judging wholly by the points submitted in your letter, for we have no other knowledge whatever of the conditions of the trees, etc., we should say that you had indulged altogether too freely in the use of fertilizers. This treatment, in connection with the cutting back of the trees, which you mention, would act together to make the fruit coarse, oversize and late in maturing. We believe that as your trees overcome too rank vegetative growth the fruit will be better in the respects you mention. As the trees begin to carry more fruit on the new outfit of Navel branches this, too, would have the effect of making them smaller, finer skinned, etc. Orange trees on good soil, properly cared for in the district where yours are situated, would be profitable, but it must be confessed that absentee ownership of such property is generally less satisfactory than actual personal participation in the work. It is, perhaps, almost as unreasonable to expect that one skillful in dry goods should be a successful orange grower as to expect that a thoroughly informed and energetic orange grower would be successful in dry goods. Horticulture is a skillful pursuit and success depends upon doing just the right thing at just the right time, and it is very difficult to hire assistants who will exercise such insight and energy as a skillful owner will in his own interest. Still it must be admitted that some people living continually on their property sometimes make as great mistakes and have to pass through the same disappointments that you have experienced. There is still much to be learned about the conditions which give the best Navel oranges.

Red Scale of the Orange.

TO THE EDITOR:—I mail you some cuttings from an orange tree infested by scale of some kind, and also some leaves (the yellow ones) showing effect of same. The leaves on the tree all turn that color, then drop off, leaving the tree perfectly bare, then in a little time the wood of the tree begins to die, and soon the bark on the body of the tree begins to get black and the tree dies. I have tried several kinds of sprays, but none seem to cure the trouble. I have about thirty trees, and up to a year ago had done nicely—at that time this scale made its appearance, and I have lost three trees.—GROWER, Colusa county.

You have a bad case of the red scale of the orange. This is one of the hardest to kill of all the scales and one of the most destructive to trees and fruit. At the south fumigation with hydrocyanic gas is the only treatment relied upon, and it is hard to keep down with that. If your trees are small and you want to fight for them, spray with resin wash about once a month, as we presume your interest hardly warrants fumigation, which requires both experience and an outfit of some cost. If yours is the only case of the kind in your region, it would be a public benefit to burn up the whole plantation.

Growing Legumes on Summer Fallow.

TO THE EDITOR:—I notice comments on a variety of Mexican peas that are being used in Colorado as a feed to fatten lambs and sheep. It occurred to me that if these peas would thrive in California they might prove valuable to be sown on summer-fallowed land to be pastured before seeding in the fall. It is probable, though, that our climate may be too hot and dry for them. They are grown in San Luis valley, southern Colorado, at an altitude of 7500 feet. We have sometimes sowed Egyptian corn on summer-fallow land, but the idea prevails here among farmers that it exhausts the land and hurts the following crop of grain when allowod to make heads, although that has not been my observation, especially where pastured. Would like to get what information I can on these points.—FARMER, Colusa county.

We know nothing definite about the Mexican peas. If you should write to the Colorado Experiment Station, Fort Collins, Colo., they might send you information and possibly a little of the seed for trial. It is, of course, a question whether you should spare enough moisture from your summer fallowing to grow such a crop; also, whether a pea would do well during the hot and dry midsummer, for as a rule peas grow better in California during the winter season. There is no way to arrive at a demonstration of this matter but to try on a small scale, perhaps. The use of Egyptian corn on summer fallow would certainly exhaust the land of moisture, and in that way interfere with the chief purpose of summer fallowing, which is to combine what you can of two years' rainfall in one crop, but that the growing of sorghum would injure the land particularly aside from the moisture content of it, we do not believe. On light land, however, not only would the sorghum itself take out such moisture, but the trash of the sorghum plowed in would tend to make the land dry out still more and therefore make it less productive for the following crop of grain. The growth of the peas would, of course, rob your summer fallow of moisture in the same way, and thus act against the chief end for which bare fallowing is done in California.

Catalpas, Dates and Acorns.

TO THE EDITOR:—Can catalpas be grown by sowing the seed in the open or must they be sprouted under shade and afterwards transplanted. If the latter, can the seed be planted now and the young trees potted and set out this summer? Will seeds of the edible dates grow? If so, will they make a tree worthy of cultivation in this locality for ornamental purposes? Could not one have one oak to the acre in alfalfa fields without material reduction of the alfalfa crop? It seems to me such a combination would be ideal for hog raising. Can you give an estimate of what the yield per acre of acorns is? It seems to me that it is much more than wheat or corn.—FARMER, Merced county.

Catalpas grow readily from the seed and an abundant start of seedlings can be had in the open ground, if conditions come just right, but much better results can be had by growing seedlings in protected beds or boxes and planted out afterwards. Seedlings grown from such planting now will be ready for planting out next winter. Date palms will grow readily from seed taken from dried dates, and make fine ornamental plants. The fruit may be good, but in most cases it will be inferior. You can have an oak to the acre of alfalfa, if you think the shade worth more to the hogs than the loss of crop under the tree. This loss will not be wholly from the shade. The hogs will kill as much or more from their use of the space as a recreation ground. It strikes us you do not need one oak to the acre—a good, big oak to ten acres would be enough—unless you are going to count on the acorn crop as a part of the product, and we do not believe you can afford to grow acorns on land good for alfalfa. We do not know what an acre crop of acorns would be.

Bordeaux and Blooms.

TO THE EDITOR:—Will the Bordeaux mixture (five pounds each of lime and bluestone to forty gallons of water) injure peach blossoms? If yes, can I spray after peaches are set and still do effective work against the curl leaf?—GROWER, Fresno county.

The chances are that the spray would kill the blossoms, which it strikes just at a certain condition before the pollen acts upon the stigma. After pollination has taken place, even before its full work is done, probably no harm would result. Therefore you might use the spray and still blossoms enough remain unhurt to make all the crop you want if no injury comes to them from frosts, etc. Spraying after pollination may still hold the curl in check to a considerable extent.

Peach or Prune.

TO THE EDITOR:—We have quite a number of trees that were originally almonds, but have been grafted to prune. Would it do to graft them to Muir peaches, setting the graft in the prune say about 1 foot above the almond stalk?—SUBSCRIBER, Wasco.

Yes: measurably well, providing the trees are not very large and are thrifty. We would, however, prefer a straight planting of thrifty, young Muir trees.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 20, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear and cold weather continued during the first part of the week, with drying north winds and severe frosts, followed by warmer weather and rain, which prevailed at the close. In some sections the frosts quite seriously injured almonds and early vegetables and checked the growth of grain and feed. Early sown grain is in very good condition except on some of the low lands, where the soil is too wet. Late sown grain has not made much growth, but is in fair condition. The acreage in grain in some sections is reported 50% greater than last season's, and the prospect for large crops was never better. Work in hop fields is backward on account of the continued rains. Almonds, peaches and apricots are in full bloom. Pruning is completed in some sections.

Coast and Bay Sections.

Clear and frosty weather prevailed at the beginning of the week, followed by generous rains and warm, favorable weather. The rainfall for the week averages over one inch, and was very beneficial in the southern districts. Plowing and seeding were again suspended in the central and northern sections. Early sown grain is in excellent condition and making fair growth. Barley is 2 feet high in San Luis Obispo county. Crop prospects in all sections are more than usually good, and the acreage in grain and hay is above the average. Green feed is plentiful and stock are in good condition. Deciduous fruit prospects are excellent, the frosts having caused no material damage. Early fruit trees are in bloom in many places. Pruning is nearly completed.

San Joaquin Valley.

Partly cloudy, warm weather with frequent showers prevailed during the past week. These conditions were favorable for all growing crops, trees and vines. Grain has made rapid growth and is in excellent condition. In some sections seeding continues and the acreage will be larger than for several years. Green feed is plentiful and stock are healthy and in good condition. Pruning and cultivating orchards and vineyards continues. Fruit buds are swelling rapidly. Large hay shipments continue to southern California and Arizona. Severe frosts occurred the first part of the week, but no damage is reported.

Southern California

The brief period of cold weather at the close of the preceding week was followed by higher temperature and heavy rains, which continued until near the close of the week. The following seasonal rainfalls are reported: Poway, 13.31 inches; Upland, 15.16 inches; Los Angeles, 12.15 inches; San Diego, 10.29 inches. During the present month the rainfall at Poway has been 7.02 and at San Diego 5.53 inches—the greatest amount for February since 1884. The heavy rains have caused some damage, but will result in great good to all farming interests. Early grain is in good condition and growing rapidly. Plowing and seeding are progressing. The only definite report of the severe frost of last Monday is from Upland, where tender plants were killed, but oranges and lemons were not injured.

EUREKA SUMMARY.—Plowing and seeding are being rushed and many farmers have this work finished. Gardening is progressing favorably. Seed has such good growth that only the most severe frosts can do it any material damage. Some fruit trees are being pruned.

LOS ANGELES SUMMARY.—Reports state that careful investigation fails to show injury to citrus fruits or trees by the late cold snap; only young growth and tender vegetation were hurt.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 21, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.38	33 03	34 64	30 87	66	42
Red Bluff	.96	25 35	18 25	18 63	68	30
Sacramento	.86	14.74	9 13	13.63	66	46
San Francisco	.90	16 92	11 41	16 72	64	42
Fresno	.10	8 03	2 57	5 96	70	40
Independence	05	1 68	1.26	3.06	62	36
San Luis Obispo	2.05	16 33	6 43	14.61	72	44
Los Angeles	1 30	12 15	2.52	11 43	76	50
San Diego	1.16	10.29	1 75	5 57	72	54
Yuma	1.72	4.05	0.66	2.42	76	52

THE DAIRY.

The Dairy as an Adjunct to the Orchard.

By Mrs. Minna E. Sherman of Fresno at the University Farmers' Institutes in Southern California.

[SECOND PAPER.]

It is surprising how much cattle food a piece of land will produce if planted to fodder for soiling instead of being pastured and the weeds allowed to occupy a large portion of the field. When we read of the Rev. Mr. Deitrich's success on fifteen acres of land and of his feeding seventeen head of cattle on the roughage it produces, it should make us blush with shame, to think that on the poor soil of Flourtown, and in the severe climate of Pennsylvania, where six months is a long summer season, so much can be done, while in California we do so little with our land under the long seasons. Mr. Dietrich uses the silo for winter feeding, so must we use it, for the summer and fall, excepting in a few favored places where water is very abundant. The weeds and wild grasses that spring up in the orchard can go into the silo, while corn, sorghum and alfalfa, wheat, barley, oats, cow pea tops, bean straw will all help to fill it up, then with a few beets and pumpkins for variety will make plenty of feed for the cows. When Dr. Wheeler's "man of gumption" comes to California, he will see the need of the small orchardist and make the silo a commercial proposition, putting up the silage in quantity and delivering it in small lots as needed. In many places the ten-acre orchardist can buy brewers' grains and have them delivered for the cows and pigs.

Around Fresno the vineyardists plant the turn way of the vineyards in alfalfa as well as the borders of their places; they also grow corn and pumpkins in every corner. The custom of planting the roadsides with alfalfa adds to the beauty of the driveway and fills the eye with a pleasant green of grass. These small fruit growers produce their own butter, where ten years ago they bought their butter for want of feed for a cow; they now manage to keep two or three cows in good condition, and the stable fertilizer is used for the vineyards, and not to fill holes in the roads. So highly is stable manure thought of in Fresno that negroes regularly haul manure from town to the vineyards, making it a means of livelihood.

Fertilizing.—There are always a few men in every community that think the soil is rich enough—for a time it was and all thought it inexhaustible—yet we found that something must be returned to it. When China and Australia poured on to us a horde of scales and pests, then came the expensive operations of spraying; but the trees failed, particularly the peach, because of their exhausted condition. They had borne heavy crops of fruit and were not fed by additional fertilizers. When I went to Fresno county, peach orchards were being dug up because of pernicious scale. When the weakened trees had all died off; the pernicious scale was not feared for the young and vigorous ones. The lands cleared of trees were planted to vines, when the surprise came that things did not grow as easily as they used to, and the use of commercial fertilizers began. But more was needed, for these did not improve the mechanical condition of the soil, and when used year after year the land seems to be parched even when copiously irrigated—the water does not remain in the soil. One of my neighbors uses 100 tons of bone meal year after year on a 100-acre vineyard. This vineyard is heavily subirrigated and so does not dry up, yet with all this expensive fertilizing I can not see that this vineyard produces as well as my own under the use of stable manure.

After we use all the manure produced on the ranch, we buy considerable in town. This year we had 400 tons sent out on the cars, the cost 60 cents a ton loaded in Fresno, $5.75 per car for freight on fifteen-ton cars. To every wagon load we put a couple of sacks of gypsum. The manure is spread on every other row of the vineyard or orchard, beginning just as soon as the crop is harvested. When the pruning begins the men throw the brush into the unmanured rows; the brush burners have a clear space to work in. By doing the work in this way the teams are spreading manure before they are needed for other work and by heavily manuring every other row and reversing the order each year the entire land is covered in two years.

The oil cake and heavy grain feeding of the cows give us the butter free of charge, for these grains do not cost as much as the fertilizers, and, after going through the cows, the value of the material to the soil is not lessened. Therefore, with good cows receiving plenty of feed, one buys grain and oil cake, instead of bone and blood meal, and has a profit of the butter, while the skim milk and the calves will often more than pay the milkers' board and wages. When we had our large herd of dairy cows the accounts were carefully kept for five years. The average production was 358 pounds of butter fat per cow, or 53,700 pounds of butter fat yearly; the net price left, after deducting the expenses of running the separator and making and delivering butter to customers, was 16 cents per pound for butter fat, or $8592 a year—certainly a good profit to be picked up from a by-product.

Effect on the Soil.—On the rich, but rough, red soil of Fresno, that bakes and runs together into plow pan, strawy manure works a cure; while under commercial fertilizers the conditions do not improve. The Home ranch had been wheat-farmed for years and never plowed more deeply than 4 or 5 inches. When I started to plant a vineyard, I found at less than 6 inches the ground was so hard that it turned the plow points and edges of the shovels. The planting was stopped and six big horses were put in with a large single-sulky plow; presently eight horses were drawing it; then a subsoiler was put in to follow it. We aimed to mellow that land at least 24 inches deep. The ground was so hard that the plows went to pieces and the horses pulled themselves out of the harnesses. However, we persevered and finally had the land in fine shape, planted it to vines and felt happy. The next year the plows would not run any deeper than the cultivator had gone— about 6 inches. The land had run together again under the summer irrigation, and there was that plow pan again formed. This was discouraging; but, after all, there is always a cure for everything if we can only find it. Then I remembered seeing an Eastern farm drained with tile. The rolling hillsides were trenched and filled with long rye straw, then covered, and the tiles were only used to carry the water down the slopes, where it might wash on the more level land. My uncle explained to me that the straw would render the soil porous and establish a natural drainage before it was all rotted. This early lesson on soils came to me, and it looked reasonable that this might keep the soil of a Fresno county ranch open, it acted so well on that Eastern red brick clay. The land was then trenched and each trench filled half full with strawy manure, and when that ran out alfalfa hay was used; the trenches were filled by plowing them in and the land smoothed up with revolving harrow. This was done early in December, and the land was let alone to settle until February, when it was regularly plowed and cultivated. The plow pan has not formed again, and now, after fifteen years, at any season of the year, it can be dug down to water level without difficulty. This was an extreme case, to be sure; yet where strawy manure is used yearly the soil grows more mellow and holds the moisture better.

Will you not be convinced and this year buy a cow or two? Try feeding them, instead of buying so much commercial fertilizer. The cows will increase the profits; for when the hard-earned dollars buy all the fertilizers used, the money is paid out before the returns come in; then, if it proves a dry year, or an untimely frost nips the fruit, or high winds have blown away the pollen and left the blossoms unfertilized, to wither away, the money expended for enriching the soil is tied up for another year. Now, if the herd had furnished the manure, the butter and milk would have paid for it, and the bank account would not have been so slim. Yes; it is wise to balance the orchard with a dairy. Then let us wake up this year, and, instead of blaming all our woes on the commission man and the railroads, be able, like the great establishment of Armour, to say we run the vineyards and orchards on the by-products of the dairy, making the money do double duty. Let us think for ourselves. Suppose no one had ever given thought about the soils, the trees and the vines, but always gone along doing as dad or granddad did. The old way may be good, yet there may be a better way, if we think for ourselves.

The Arabs are supposed to have accidentally discovered how to make butter. Now, suppose no one had thought any more than most of us do as to the way of butter making, we would to-day still be tying up milk into skins and sending it away on camel back to be swung and jolted into butter; or had we even remained where we were thirty years ago, we would still be eating butter made from the milk raised on pans, the cream exposed to contaminations of the air during twenty-four hours of the rising off the milk. Now our butter is made from the clean separator cream that can be so easily kept from bacterial taints. The dairyman readily accepted these improvements. Now let us, as vineyardist and horticulturist, accept all the new agriculture has to offer us of scientific aid. Let us then grow our soiling crops that, by bacterial aid, may enrich the soil by nitrogen; then, by feeding these soiling crops to cattle, returning again the manure to land, making it doubly rich.

Other helps are coming to us daily from the universities and experiment stations. Let us be ready to welcome them. The application of electricity as a destroyer of weeds may become practical any day. Let us study nature with sympathy and wake up to the glorious possibility of life around us, leave the ruts to those that like to crawl along and be happy that we can see into the future where life will grow more and more interesting, as man masters the great forces of the earth and uses them for his needs.

Let us, above all, be happy and love our work and our lives as tillers of the soil, seeing with awakened interest all the life around us, finding the simple wayside flowers as divine as the highest stars in the clear skies of a warm summer night.

THE IRRIGATOR.

Water Rights in California.

NUMBER VIII—CONCLUDED.

Written for the Pacific Rural Press by Samuel C. Wiel.

There is an abandonment of whatever runs waste after use. When the owner has made all the use of the water he wants, and lets the waste run off, the waste is abandoned, and the owner no longer has any right to it. If it finds its way by natural channels into another creek, the owners there have a right to it (3 Cal. 249). If he digs a ditch to drain away the water because it interferes with mining the bed of the stream, he has no more claim to it (21 Cal. 374). But it is always a question of intention. If such discharge of water is made not because it is waste, but for convenience in handling it, intending at the time to recapture it at some lower point, it is not abandoned. For example, water can be discharged into a stream as a link in a ditch line and taken out again, though there are prior appropriators on the same stream. It is not abandoned where there is an intent to recapture it. (C. C. 1413, 11 Cal. 143.) "In the case at the bar the channel of the south fork of Jackson creek is used as a connecting link between the Amador county canal and the ditch of the defendants. The water from the canal is emptied into the fork with no intention of abandoning its use but for the sole purpose of supplying the ditch. There may be some difficulty in cases like the present, in determining with exactness the quantity of water which parties are entitled to divert. Similar difficulty exists in the case of a mixture of wheat and corn, the quantity to be taken by each owner must be a matter of evidence. The courts do not, however, refuse the consideration of such subjects, because of the complicated and embarrassing character of the questions to which they give rise. If exact justice cannot be obtained, an approximation to it must be sought, care being taken that no injury is done to the innocent party. The burden of proof rests with the party causing the mixture. He must show clearly to what portion he is entitled. He can claim only such portion as is established by decisive proof. The enforcement of his right must leave the opposite party in use of the full quantity to which he was originally entitled." (Butte C. & D. Co. vs. Vaughn, 11 Cal. 143.)

An abandonment of waste covers, however, only the specific water that has been actually allowed to run to waste. The incoming water still remains at the entire disposal of the owner of the water right, who may so use it that none of it thereafter runs off as waste at all, or so that it runs off in a different place where the lower claimants no longer can get it. The latter have no right by estoppel to have the abandonment continued, even if they built expensive flumes to catch the discharge (30 Cal. 290, 80 Cal. 181, 108 Cal. 72). Of course, it must be remembered that this applies to claimants basing their rights on use of abandoned waste only. Those who, below stream, have rights of appropriation to a surplus of the natural stream itself, instead of claiming only waste, will be protected, as has been set forth elsewhere.

2. Adverse use. By one allowing another to divert all or part of the water for five years, the right is correspondingly lost to the former and acquired by the latter (32 Cal. 26, C. C. 1007). The adverse use must be made with a claim of right, hostile to the true owner (27 Cal. 360); it must be open and in plain sight, so that one has a chance to prevent it; it must be uninterrupted (27 Cal. 360, 32 Cal. 26). In such a case it is said that a grant will be presumed to have been made to the man who has been so using the water (25 Cal. 392, 104 Cal 140); though that is merely a fiction of the law. It is not really a grant as a reward of adverse diligence; it is merely that the law will not look into claims that are "outlawed," a punishment for delay.

3. Eminent domain may justify the taking of the water right by the State for public use, on the payment of a just compensation, but it can not be taken without compensation, nor for a use that is not a public use (Cal. Constitution Art. 1, S. 14). Irrigation is such a public use, if the irrigation is for the benefit of extensive farming neighborhoods, and statutes authorizing the taking of streams for such purpose were upheld in Lux vs. Haggin (69 Cal. 255). Use for water supply is a public use (Cal. Constitution Art. XIV, S. 1). On the other hand, mining is not a public use, and the Legislature could not authorize water to be taken from private owners to run a group of mines (63 Cal. 72). This difference is probably a sound one, for irrigation builds up the State permanently and makes new gardens and homes out of waste; but mining, it must be acknowledged, is precarious; the more the mines are worked the less there is left; the tendency is to temporary benefit as against the permanent filling out of the State that we see following irrigation on all sides to-day.

Riparian Rights.—It would not do to close an outline of this subject to-day without some words on riparian rights. The law of appropriation is now being more and more crowded by the other system. The two come in contact in many places, some of which we have pointed out, such as the right to ap-

propriate the surplus over what belongs to an upper riparian owner, the right of lower riparian owners to the surplus over a prior appropriation, the right of occupants of land always to be protected in their riparian right against later appropriators. The field is an old and extensive one, on which there is far more decided law than on appropriation; yet here, viewed only as an accessory to the latter, a few words must suffice.

Unlike an appropriation, riparian rights need no act of the owner to acquire them; they attach to the land bordering on the stream of their own accord. The right thereto is a natural right. In ancient times when the law was being shaped the use for drinking purposes was in mind, and to deprive the land owner of that was not to be thought of. It is a natural right, similar to the right to support from land adjoining, uninterfered with by excavation such as would cause it to cave, a natural attribute of the land itself in its natural state—natural in the sense that it is part and parcel of the land, acquired by virtue of ownership of the land, without any special formalities of any kind (69 Cal. 255 at 390, 126 Cal. 135).

It is usufructary solely and independent of title to the water or the bed of the stream, though the riparian owner usually owns one-half of the bed of the stream. That is, this natural right is one to use the water, not to own it (69 Cal. 255). The kinds of water to which it attaches are, in general, water-courses, lakes and, in California, percolating water (Katz vs. Walkinshaw, 141 Cal. 116). Though it may be necessary to use some other name for the landowner's right in the last case, the principles are the same. Probably the right to-day extends to subterranean streams also (132 Cal. 204), though there is some doubt as to this (53 Cal. 578). But the rights do not extend to mere diffused surface water (69 Cal. 255).

The characteristic feature of riparian rights is that the purpose, amount and manner of use is limited in all directions, so as to be within the reasonable needs of the land to which it attaches.

Reasonable uses include two great classes, ordinary uses and artificial uses (113 Cal. 182). The former includes household use, drinking purposes, watering of domestic animals, etc. For these purposes it is reasonable to take all there is, and lower claimants cannot complain (69 Cal. 255; 116 Cal. 587). It is to supply the ordinary needs of life on the land. But unusual needs, it must be noted, are not within this; watering large bands of cattle are not within the ordinary uses for which the whole can be consumed (69 Cal. 255 at 407). The artificial uses are more restricted in the extent allowed. They include such things as irrigation and the running of machinery. For these it is never reasonable to take all (77 Cal. 66). What is a reasonable amount for such purposes is a question to be decided in each case. The surplus over what is actually consumed must be restored to the stream (69 Cal. 255, 126 Cal. 135).

If the water is not enough for continual use by all, no one of the owners has a right to deprive the others of it on that account for any of the artificial uses; unlike appropriators, the riparian rights of all owners through whose land the stream flows are equal in this. A court of equity will in such a case apportion the water so that each can use all for a time, or assign to each the continual use of his share only, of what there is (113 Cal. 182, Miller vs. Dondero, 146 Cal. Dec. 211). It is said that this will be done with percolating waters as well as other kinds. (Katz vs. Walkinshaw, 141 Cal. 116)

The use is not only limited to the reasonable needs of developing the land, but it must be the land to which the right attaches that it is used for—not for neighboring, distant, or, as it is called, "non-riparian lands." Water cannot, under the doctrine of riparian rights, be used to irrigate non-riparian lands merely because their owner also owns riparian land (77 Cal. 66). What lands are so far from the stream as to cease to be riparian is a question in each case. It is certain that lands beyond a watershed, whence the water could not flow back to the original stream, are non-riparian; and no such use taking water beyond a watershed is sanctioned by the common law of riparian rights (113 Cal. 142, 126 Cal. 135).

The manner of using it must likewise be reasonable. It must not so accelerate or diminish the flow or change the quality that it prevents a reasonable use by other owners, for all are equal in this respect. For example, in 137 Cal. 39 it is said that if trees are cut and thrown into a stream, decaying and unfitting the water for domestic use, the lower riparian owner can have an injunction. Any unreasonable use is actionable immediately, because it violates the natural rights of others, even if they are not using the water themselves (117 Cal. 539). No one has a right to use another's property without his consent, however little use it may be to its owner.

Riparian rights may be lost by adverse use, in the same way as an appropriation may be (126 Cal. 135; 101 Cal. 242). They are also subject to a taking by the State, under the power of eminent domain, in the same way (69 Cal. 255). But they cannot be lost by abandonment, because of the essential difference between appropriation and riparian rights. The former is conditional on continued beneficial use, but the latter is absolutely attached to the land. The former arises from a special grant by the Government; the latter from the land itself, as a natural right. And so, riparian rights remain though the water is put to no use at all (108 Cal. 72). And even if a later appropriator lower down has made use of the water, he cannot complain when the riparian owner starts to use it thereafter (126 Cal. 136).

Many features of the law of riparian rights are elaborately considered in the leading case of Lux vs. Haggin (69 Cal. 255).

Conclusion.—The law of water rights in California shows, more than any other branch of the law, the changes through which California has gone and is now going. It shows how in the early days the miner dominated in the view of the law, getting the then new right to ownership by appropriation established in his favor because the lack of water in mining regions demanded it. How then this new right developed as a favor from the Government, held only so long as beneficially used, an instrument developing the State itself. How the State has more recently grown in other lines, no longer so strongly dominated by mining interests, and has been limiting its indulgence to them; as the rule that a parol sale is ipso facto an abandonment shows, constructing the law of appropriation more and more narrowly. How the common law of riparian rights has gained the ascendant with the growth of agricultural interests, and causes the rule which is in derrogation of it to be less liberally dealt with. Curiously enough it shows the agriculturist favored on the very same grounds that originally were used to favor the miner — public policy founded on the scarcity of water in California. Judge Heydenfeldt's opinion in Irwin vs. Phillips, 5 Cal. 140, establishing the law of appropriation, and Judge Shaw's in Katz vs. Walkinshaw, 141 Cal. 116, applying the principles of riparian rights to percolating water, are founded both on public policy arising out of the scarcity of water in California, yet reaching almost opposite conclusions.

Taken altogether it shows that the law develops not because the old rules meet with unforeseen natural obstacles, but because they meet with a new development of the people themselves, fitting a natural scarcity of water which has remained unchanged, to the new pursuits in which the people at large engage. But this readjustment should be guarded so as not to unwarrantably interfere with mining, as the new law of underground water, especially, threatens to do.

THE APIARY.

Bees, Birds and Fruit in California.

By C. W. Dayton of Los Angeles Co. in the American Bee Journal.

Five years ago last July a man came into my honey-house, and while I was filling his pail with honey, casually remarked with a smile: "Mr. Williams, up there, who owns the big orchard, is badly worked up because of the bees working on his apricots, and is making all kinds of threats."

"Is that so? I did not know that 'cots were ripe yet," I answered.

"Yes, they are ripening pretty fast. I suppose on account of the four or five days of hot weather we have just had. I was up there yesterday and got some."

As he stepped out of the door I remarked, "I guess I also will have to go up and hit Mr. Williams for some apricots some time to-morrow."

About 10 or 11 o'clock I called on my wife for the largest pail in the house, as I was going after some 'cots, and, I assure you, it was not slow in forthcoming.

Near the side of the orchard I inquired of a picker where I could find Mr. Williams, and was directed up a road toward the middle of the orchard, where I found him and some 50 or 75 boxes of fruit from which he was sorting out the occasional mutilated ones which had been mistakenly thrown in.

"Good morning, Mr Williams. I came up to get a few 'cots. You seem to be getting an abundant crop of fruit this year."

"Good morning, sir; good morning. Yes, we will get a good deal of fruit if we succeed in getting it off the trees before the bees do."

"Indeed," said I, "it does look that way."

"May I inquire your name? I do not remember having seen you, although I am acquainted with nearly all the neighbors around here."

"My name is Dayton, but I am quite commonly known as the honey-man, but possibly bee-man would be easiest for you to recollect."

"Dayton—Dayton," he repeated; "I do not remember having heard your name."

"I live a quarter of a mile below the post-office, and own those white hives you may have noticed; and since I have more bees than any one else about here, I suppose most of these in your orchard came from my hives."

"Well—yes; I believe I do remember the place; and—how many apricots did you wish to get, Mr. Dayton?"

"I guess I will take the pail full."

When he had poured out of one of the boxes of marketable fruit enough to fill the pail about one-third, I said to him, "That will do of that kind, Mr. Williams. If it will be agreeable to you, I would prefer to fill up the pail with those which the birds have pecked."

"Birds!" he exclaimed. "We have not seen any birds around, as I know of."

"Well, I always supposed the mutilation of fruit in this manner was the work of birds."

"John—John!" called he, to the spokesman of a band of five or six Chinamen, "have you seen any birds in the orchard?"

"Nope—na, no any." After a long pause, he added, "Yick, yick. Two four, six placee" (meaning nests). "Ober 'im cook 'ouse. Us eat 'im 'fore'efix' 'im wing out. Muchee gone."

After a good laugh by several bystanders had subsided, I ventured, "If you will listen closely, Mr. Williams, I think you can hear a chatter of birds in that row of eucalyptus along the side of the orchard." After listening a moment, he said, "Yes, I wouldn't wonder if there were a thousand birds up in those trees."

As he turned around to fill my pail from the box of mutilated apricots, which were lately sorted out, I interrupted him with, "Mr. Williams, if it would still be as agreeable to you, I should prefer to go out and pick the mutilated ones from the ground and trees."

He said, "Yes, take your pail and pick up as many as you want. We do not consider them as worth anything."

As I started out, thinking that he might conclude that I possessed about as much "cheek" as my bees, I returned, "That is, from your standpoint; but from my position they are worth even more than the marketable ones, and I shall be quite as glad to pay for them."

When I returned and had paid for them, he gave vent to his curiosity by saying: "If it is a fair question, I should like to know the reason why you prefer the mutilated apricots?"

"Well, Mr. Williams, there are several reasons instead of one. Had these in my pail not been mutilated you would have picked them for market, partially green, several day ago. And, again, if the bees had not removed the fermenting portion wherever it occurred, they would now be entirely spoiled. Also, they are the largest and sweetest in the orchard. As you well know, the earliest and largest apricots grow low down on the tree. Their blossoms came out earliest, last February, and by the last of March were the size of hickory-nuts, while those which are beginning to ripen out towards the ends of the limbs could scarcely be seen. They did the most of their growing during the moist weather of winter and spring; and they grew to the limit, so when hot summer began there was not much else to do but hoard up sweetness for the time of ripening. Being down in partial shade their skins are tender, while those more exposed are thick-skinned and tough, like soggy potatoes; while those in the pail are so mealy and tender that they can readily be broken into a bowl of milk, together with two slices of bread and one-half pound of granulated honey; just makes a meal."

"Well, I declare," said Mr. Williams, "I don't think I should kick very hard against a dish like that myself. Guess I'll bring out the children to-morrow and have them pick a box of that kind. Those that I have always taken home were out of the market boxes, but our folks did not seem to care much for fruit."

"As to these mutilations which the bees are working at, some were mutilated yesterday morning, but more of them the morning before, and considerable several days ago.

"Now, most persons think that bees choose the sweetest, but in my experience this is a mistake. Sugar is sweeter than honey, and yet they choose the honey. They are attracted to fermented juices in preference to unfermented. In fact, a person can prove this to his satisfaction by simply walking out amongst these trees. We often see a cluster of bees which entirely hides an apricot, and if we attempt to examine it it will be found to be so rotten that it can not be handled, while the freshly mutilated ones on the trees are scarcely noticed by the bees.

"Those which were picked into this morning are still sweet, but those of yesterday, after being exposed to the sun, and then the dew falling on them during the night, are now beginning to ferment, and if you should taste of such a one you would say that it is gone beyond all hope of redemption But not so with the bees. When a bee alights on a mutilated apricot, or peach, or fig that is still sweet, it does so by mistake, and thrusts its tongue in only long enough to taste, then runs all over the apricot to see if there is not another opening; and, if not, it goes to another apricot, and so on until it finds one of the right flavor, or, sourness.

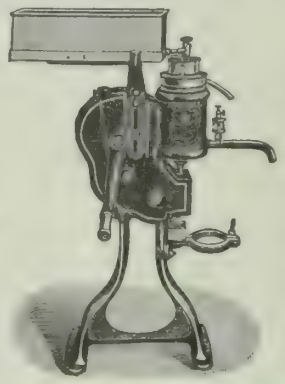
"An apricot, or peach, or fig does not ferment all through at once, but only at the exposed and ragged edges of the mutilation, and if there is not more mutilated fruit than the bees can manage, they will remove the fermented portion just about as fast as it forms, so that a mutilated apricot will be eatable so long as a remnant remains. To maintain that bees bite into fresh fruit while there is decaying fruit lying about, is as unreasonable as to say that a rooster continued to jump up against a cornstalk with the hope of once in a while knocking a kernel out

The Cream Separator World's Record

It has come to our attention that the representatives of our "Would-be competitors," in order to bolster up their sales, are claiming that the

United States Cream Separator

did not make a World's Skimming Record at the Pan-American Exposition at Buffalo. The United States Separator did make that record, and beat out the De Laval Separator, and every other separator that dared to enter the contest.



We Will Give $5,000.00

to any State Dairyman's association before whom the De Laval Separator Co. can prove that the U. S. did not beat them, provided the De Laval Co. will give $5,000.00 if the U. S. did beat the De Laval Separator in that contest—the amount to be distributed in premiums.

Again these "Would-be competitors" are claiming they were awarded a Grand Prize at Paris in 1900. We have made them own up in the papers in days gone by that they did not get such a prize, but they start up now, thinking, no doubt, that the public has forgotten that admission. They advertise lots of other things not in accordance with the facts. It troubles them immensely because the **United States** is beating them in all contests.

The United States Separator has beaten the De Laval Separator in every National or International Exposition, where contests have been held for the last ten years.

The **United States** is better made, gives better results, is less trouble to clean, and needs less repairs than any other separator on the market.

The U. S. Holds the World's Record

THE VERMONT FARM MACHINE COMPANY, Bellows Falls, Vt.

Warehouses at Chicago, Minneapolis, Omaha, La Crosse, Wis., Portland, Me., Kansas City, Mo., Buffalo, N. Y., San Francisco, Cal., Montreal and Sherbrooke, Que., Hamilton, Ont.

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of the ear, when the ground around about was strewn with better corn already shelled.

"But if you should walk along beneath those trees over there, Mr. Williams, those birds would become as hushed as a flock of quails; because they may mistrust you had come to demand the return of your fruit. Those birds are like domestic fowls—they want their breakfast as soon as it is light enough to see, and this is some two or three hours earlier than any one comes into the orchard to work; and, besides, it is difficult to see the birds working on fruit, because they are enough like quails to put out sentinels. These are the red-breasted fellows which perch on the topmost twigs and appear to be singing, but, in reality, are only chirping to their brothers and sisters which are creeping from branch to branch among the leaves in the densest part of the trees, selecting the tenderest and sweetest apricots. If you get within ten rods they chirp out that a suspicious biped is stalking down through the orchard at an unusual time of day, and the birds begin to sneak out singly from the far side of the trees and go to the far side of the orchard or to some secluded place; but the sentinels continue to chirp on until even you begin to disappear under the outer branches of the very tree they are perched upon."

"Well," said Mr. Williams, "I will bring out a cot and blankets and stop here nights and see what is going on in the orchard in the early morning."

I have not seen Mr. W. since; but as he has allowed some bee keeper to keep an apiary in his orchard throughout the past and one other fruit season, it can be pretty certainly guessed what his conclusions were.

THE ORNITHOLOGIST.

The Depredating Linnet.

By Mr. Charles E. Jenny in the Fresno Republican.

These February mornings you will find hopping around your door-yard or perched in the shrubbery a pair of fluffy, handsome little birds, really about the size of a canary or shorter, but with their feathers so fluffed out as to appear considerably larger and resemble a ball with a beak at one side and a tail at the other Their beaks are very short and stout, conical with a greater diameter at the base than the length. The male bird has red on its throat and breast, on the forehead, and when he lifts his wings you will notice red on his rump; the back is dark gray and the wings streaked with dark lines. Underneath he is light gray streaked with dark brown lines. The female has no red on her; her head is drab, back and wings brown with faint stripes and below light brown streaked with dark brown I do not know that it is necessary to describe so fully one of our commonest birds, that nearly every one knows at sight—the house finch, or as it is much more commonly known, the red linnet, Carpodacus mexicanus frontalis. No member of the sparrow family, unless it be the English sparrow in the East, is so universally declared a nuisance. Particularly exasperating has it been to this valley since it became a fruit producing region.

He begins in February. If you have sowed fine vegetable or plant seed in the open ground, you will find him in your seed beds these early mornings, scratching like an old hen. When he has got all he can reach he waits until the seeds begin to come up, pulls them up and nips off the seed ends. You will find the fine white stems of your lettuce or pansy seedlings lying all over the ground and not a plant to live. Then he gets into the almond trees and pecks ruthlessly at the tender blossoms with his stout bill. Between pecking and fluttering clumsily around he knocks about half of them off. When strawberries begin to get ripe he knows to a minute just when each berry will be ripe enough and eats it half up the minute before. If your patch is a small one he claims the whole of it; if a large one, he leaves what he can't eat of the greener berries for the owner. So he passes away the time until apricot time. Then you will find his trade mark on the sunny side of one-half of your Royals and Moorparks. The Linnet Brand is a familiar one to fruit growers. In peach time he has become more fastidious. He only eats a very little from the sweetest and best flavored. If you want to know the acme of flavor in peaches, take a bite next to the linnet's. As the peach crop is a large one in this valley there is thus some left for the market.

Do you think I have exaggerated his depredations? Ever since I have lived here the farmers have been in arms against him. No kind of scarecrow or strings or fluttering rags will frighten him. The shotgun is effective, but injures the trees and would keep a pot-hunter busy all his time. Poison grain works, but is dangerous to poultry or to pet animals that might eat the dead birds. Destroying the nests is practiced, but still the linnets flourish and build their nests in the apricot trees and lay their three or four eggs, blue specked with black around the larger end, under the very nose of the farmers. Or they may show even more confidence and build in the rose vine on your porch or in a shrub in front of your window. They like human association. Before the settlement of the valley they probably lived on the seeds of grasses and weeds and the berries that grew naturally along the streams; but they at once appreciated the advantages of civilization and cultivation.

The complaints from the California fruit-growing districts against the linnets became so loud and frequent that the United States biological survey began an investigation of the habits and diet of the birds. The results as tabulated from the examination of many stomachs showed the bulk of the food to consist of seeds, while at certain seasons of the year it ran to about 25% fruit and the insect food amounted to less than 4%, so there is no rebate to the credit of the linnet on that account. Now it stands to reason that traces of a fruit diet, that may mean no more than a sip of juice or a taste of dissolvable pulp, would be more obliterated than seeds, so doubtless the actual per cent of fruit consumed would run much higher. This the investigators realized and admitted in the report that the damage was often serious; that the early crops were the most affected; and that while in large orchards the damage might not be noticed much, in small ones it often amounted to the whole crop! In their report on the seed eating, they returned on grain only, which was so small as to be beneath consideration, but bulked the rest of the seed as those of weeds, evidently overlooking the fact that in thickly settled communities, at least, quite a percentage of these will be found to be cultivated garden seeds.

And yet to look at the cunning, fluffy little fellows you would not take them for such blackguards. But I have given Tom, the cat, leave to catch all he can, which I think will not protect my berries much. It is not uncommon just now to see a female attended by two males, she evidently not at all embarrassed by the crowd, but quietly making up her mind which will be her mate.

The Danish Egg Trade.

The Frankfurter Zeitung cites the egg trade of Denmark as an example of how, through combination and systematic efforts, an industry may in a comparatively short time become one of great importance. Up to 1867 nobody in Denmark thought of exporting eggs, and very little attention had been paid to the raising of poultry. From that time on efforts in this direction were made with surprisingly good results, and in 1895 a company for the export of eggs was formed. In 1896 the value of exported eggs was nearly $2,000,000, and reached $6,000,000 in 1902 the number of eggs exported in the latter year being 36,000,000 dozens. The dividends paid to the members of the association were more than $1,000,000 in 1902. This Danish company has now 33,500 members and 500 local branches, which are under the direction of a central office. Each local branch collects the fresh eggs in its district and ships them to a certain export port. From the moment they leave the collecting district all expenses are defrayed by the company, which also guarantees to the purchasers the fresh quality of the eggs. Each local branch has at least ten members. The eggs collected must be shipped within four days. At the central station the eggs are weighed and divided into groups, of which the lowest weighs 14.3 pounds and the highest 19.8 pounds per ten dozen. The eggs are also tested as to their freshness and are afterwards packed in pine boxes, which bear the mark of the company, the number of eggs, and a sign denoting their quality.

New Patents.

Dewey, Strong & Co.'s Scientific Press Patent Agency, 330 Market street, S. F., has official reports of the following U. S. patents issued to Pacific Coast inventors:

For the week ending January 31, 1905.

781,123.—Newspaper Wrapping Machine—J. L. Boyle, Harrisburg, Or.
781,181.—Telephone Mouthpiece—W. K. Brackett, Alameda, Ca.
781,591.—Razor Strop—J. S. Burk, Prosser, Wash.
781,331.—Oil Burner—J. H. Davis, Oakland, Cal.
781,501.—Door Securer—W. P. Dobson, Grants Pass, Or.
780,985.—Lock—A. O. Fossum, Tacoma, Wash.
781,284.—Oil Burner—S. T. Johnson, Vallejo, Cal.
781,534.—Jar Cover—J. A. Landsberger, Alameda, Cal.
781,614.—Conveyer—W. L. McCabe, Seattle, Wash.
781,543.—Street Cleaner—D. G. McClay, Santa Ana, Cal.
781,093.—Hydraulic Weir—W. S. Post, Los Angeles, Cal.
781,361.—Door Closer—O. Rice, Oakland, Cal.
781,095.—Logging Apparatus—H. R. Robertson, Portland, Or.
781,096.—Logging Apparatus—H. R. Robertson, Portland, Or.
781,369.—Hat Holder—W. L. Scott, San Francisco.
781,240.—Rendering Oils Limpid—E. A. Starke, Alameda, Cal.
781,242.—Manufacture of Gas—J. C. H. Stut, Oakland, Cal.
781,380.—Manufacture of Gas—J. C. H. Stut, Oakland, Cal.
781,243.—Foldable Truck—S. Thompson, Eureka, Cal.
781,477.—Hatch Cover—T. Walker, Portland, Or.
781,578.—Car Brake—H. H. Warner, Tacoma, Wash.
781,253.—Knitting Machine—G. D. Whitcomb, Glendora, Cal.
781,255.—Fire Brick—F. A. Widdows, Stockton, Cal.
781,262.—Vehicle Wheel—Z. Xevers, Santa Cruz, Cal.

For the week ending February 7, 1905.

782,097.—Dress Shield—N. F. Anderson, Los Angeles, Cal.
781,864.—Evaporator—W. C. Anderson, San Jose, Cal.
781,993.—Circuit Closer—W. J. Bell, Los Angeles, Cal.
782,100.—Railway Signal—W. C. Bethel, Seattle, Wash.
782,117.—Exhaust—C. J. Edwards, Stockton, Cal.
782,195.—Trolley Pole—C. V. Greenamyer, Los Angeles, Cal.
781,943.—Paper Box—W. J. Griffin, San Francisco.
782,128.—Wheel—C. B. Haney, Olex, Or.
781,827.—Heater—L. Houze, Stockton, Cal.
782,139.—Swinging Door—R. H. Jones, Portland, Or.
781,835.—Switch—J. P. Lowe, Seattle, Wash.
781,836.—Gas Apparatus—L. P. Lowe, San Francisco.
781,837.—Gas Apparatus—L. P. Lowe, San Francisco.
781,838.—Cleaning Gases—L. P. Lowe, San Francisco.
782,151.—Bottle Stopper—E. J. Lowry, Republic, Wash.
782,201.—Nipple Chuck—McGahan & Ascher, Los Angeles, Cal.
781,840.—Pin Holder—A. C. Minghetti, Los Banos, Cal.
782,018.—Tree Protector—J. A. Peron, Los Angeles, Cal.
781,906.—Music Leaf Turner—G. Ponarouse, San Francisco.
781,787.—Apparatus for Recovering Minerals—F. S. Prouty, San Francisco.
781,912.—Stamp Mill—R. Schorr, San Francisco.
782,069.—Bracket—V. Sjostrom, Los Angeles, Cal.
782,181.—Wireless Telegraphy—G. O. Squier, San Francisco.
782,085.—Rotary Engine—C. R. Twitchell, Dayton Heights, Cal.
781,700.—Drag Saw—G. O. Walker, Walker, Or.
781,855.—Feeding Blanks to Can Machines—S. E. Walker, San Francisco.
37,320.—Design—J. Daehler, Los Angeles, Cal.

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The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*
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Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid**, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Agricultural Review.

Alameda.

IDEAL LAMBING SEASON.—Livermore Herald: Sheep men are jubilant over the results of the lambing season which is now drawing to a close with a higher percentage of lambs than was ever before known since the industry was started. John Mulqueeney, who is the pioneer in this line in this section, states that he had never seen as good a season in the thirty-five years he has been engaged in sheep raising in this section. Not only has the weather been mild, but the feed is well advanced and possesses unusual strength for the season, so that the ewes are strong and the lambs are consequently well nourished. Patrick Connolly came down from his Corral Hollow sheep range Sunday and stated that of the number of lambs marked he averaged better than 120%, which means that there are 120 lambs for every 100 ewes. This is regarded as a phenomenal record, the only season which approached it in results being in 1886. He reports that his neighbors are doing equally well.

Butte.

ORANGES YIELD WELL.—Gridley Herald: H. S. Brink of Biggs has 1½ acre of Navel oranges which yielded 500 boxes of fine fruit the past season.

Glenn.

COW DOES DOUBLE DUTY.—Orland News: On Thursday a peculiar outfit passed through Orland northward. It consisted of a covered wagon drawn by two thin horses, driven by a man accompained by his wife. Following this was a buggy with a milch cow hitched between the shafts. The cow was driven by a good-sized boy, and traveled along under the guidance of lines and a whip. Bringing up the rear was a couple of boys driving about a dozen head of very thin cattle. The party was from Texas and came to California to take up the Government land. They started several months ago with several more horses, but these had been lost on the road and they were forced to put the cow to work.

Humboldt.

A BIG TREE.—Eureka Times: A redwood tree blew down a short time ago on the lands of the Dolbeer & Carson Lumber Co., about 400 feet from the shingle mill of H. A. Poland. It was left by Carson's loggers because they could not fell it and save it. It broke at 130 feet, where it measures 19 feet in diameter. As it will pay better to manufacture it into lumber than into shingles, that course will be pursued, and all but the broken part will be made into lumber. It is estimated that it will cut 70,000 feet of clear lumber, 60,000 feet of merchantable, 150 cords of shingle bolts and 100 cords of wood. A splinter was shivered from the tree when it fell and it will make about ten cords of shingle bolts. It will not be attacked until the weather settles in the spring, and any one may see it until that time. A photograph will be taken of the fallen giant. It will cost about $400 to move it to the railroad, which is about 400 feet from where it now lies.

Kings.

NEW INDUSTRY.—Hanford Sentinel: Alfred Dinon, from Los Angeles county, will establish a new industry here. He has had long experience as a hog feeder, and has bought five acres of land near Hanford, and there will open a place where hogs can be fattened and prepared for the market where the feed grows. Mr. Dinon is an acquaintance of P. L. Bonebrake, the local representative of the Cudahy Packing Co., and Mr. Bonebrake says it will be of interest to those who are breeders of hogs for the market to watch the progress of the feeding plant which Mr. Dinon is going to establish.

Los Angeles.

A PROMINENT ORCHARDIST FINED.—Covina Argus: Derius Overholtzer, a prominent rancher, was arrested Thursday upon a complaint sworn to by Road Overseer Brunjes for allowing his irrigation water to run upon the highways, which is contrary to a county ordinance. Mr. Overholtzer admitted the offense and was given the minimum fine of $10 by Justice Glover of Azusa, before whom the case was heard in the absence of Justice Parker. The excuse offered by the defendant was that it was impossible at this season of the year to irrigate his orchard and prevent the water from running off his ranch onto the road. The road overseer states that he has repeatedly warned Mr. Overholtzer and considerable damage had resulted through defendant's negligence in the matter. This is the first case which has been prosecuted under the ordinance in this district.

Modoc

SHEEP MEN VS. CATTLE MEN.—Alturas special to Sacramento Bee: A bitterly contested case, involving points of controversy between the cattle and sheep men in the vicinity of Lookout, has just been decided by Judge J. E. Raker, of the Superior Court, at Alturas. As is usually the case where cattle and sheep men graze their stock over the same range, some bad feeling existed. This feeling led to the arrest of several sheep men by the name of Brown for trespassing on certain grounds claimed by the cattle men. The first trial was before a Justice of the Peace, and resulted in a hung jury. A new trial was then secured in the same court and resulted in an acquittal. Again the same men were brought to trial in the same court and this time a conviction was secured. From this decision an appeal was taken to the Superior Court on the law points involved in the case and a decision has been handed down in favor of the defendants, the sheep men. This practically ends one of the hardest-fought cases in the last two or three years. The lands on which the trespass occurred were open, or unfenced, lands which the defendants did not know were claimed or owned.

Placer.

ALMONDS SLIGHTLY INJURED.—Newcastle special to Sacramento Bee, February 13: Reports of temperature considerably below the freezing point are heard of, but with the exception of a few almond trees nothing has been injured. In fact the cold is welcomed as it will have the effect of retarding the opening of the blossoms which were coming forward faster than was considered desirable.

San Joaquin.

A BIG EGG.—Stockton Mail: W. E. Javete, of the firm of Stewart & Javete, has an egg which breaks the record for size. It is 7 inches around in one way and 8 the other, and was laid by a black Minorca hen. Mr. Javete has a number of these fowls and all of the eggs obtained are remarkably large. The one spoken of weighs as much as two ordinary eggs.

Santa Cruz.

NEW FRUIT CANNERY.—Watsonville Register: The Los Gatos Canneries of Los Gatos, of which George H. Hooke is proprietor, have quietly made arrangements with the Prettyman & Wolf Company to establish a branch of the business in Watsonville, and the size of the plant will depend entirely upon the quantity of canning fruit which can be obtained in the vicinity of Watsonville.

Shasta.

TEAMSTER INJURED BY FALLING TREE.—Sacramento Bee: As Frank Dalton was driving a six-horse team yesterday along the road to Redding, a large dead tree by the roadside fell, quartering across the highway, striking one of the wheel horses and felling it to the ground. The others took fright and Dalton fell from his seat in front of the prostrate wheeler. The runaway team dragged the tree forward so that it held both animal and driver pinioned to the ground. The others, struggling to run, broke a singletree and prevented further damage. George Larison, who was following along the road with a four-horse team, rescued Dalton from his perilous predicament. He hitched his four horses to the fallen tree and dragged it from Dalton and his wheeler. Dalton was bruised and scratched, but no bones were broken.

ANGORA GOATS.—Free Press: Misses Birdie and Nina Champenois, who live in the vicinity of Ludwig gulch, about 5 miles from Cottonwood, have the reputation of being the most successful goat raisers in the north, and, while they have sold most of their Angoras, they still have an interest in a large band of goats. And at the shearing of these goats, just completed, the Misses Champenois were the sole overseers of the job. Twelve hundred head of Angora goats were sheared. The goats averaged four pounds of mohair apiece, which can be sold at Anderson at 32c. a pound. At that rate each goat produced $1.28 worth of mohair at this shearing, the whole band, $1536. The Misses Champenois think they can do better, and at their suggestion the wool will be shipped. Fifteen years ago Mrs. Champenois and her daughters started to raise goats. They began with thirty head of common stock and bred up until they possessed over 2000 head of the best Angoras. They made a fortune with their goats. The girls were the shepherds.

Sonoma.

ANOTHER PARASITE HAS COME TO LIGHT.—Santa Rosa Democrat: Horticultural Commissioner Bremner liberated a colony of new parasites in some vegetable gardens near Healdsburg on Wednesday. They were the first colony to be imported into this country and Mr. Bremner secured them from State Expert George Compere, who brought the beneficial insects from Europe. The parasite will destroy the pest known as the cabbage butterfly, whose special food in this country is cabbage and alfalfa. Its new enemy is a fly in its chalcid state and it is an internal parasite. The pest has done considerable damage in the vegetable gardens of California and throughout the country, and the experiment tried here will doubtless be passed all over the United States.

Sutter.

PACKING FIGS.—Marysville Democrat: The Rosenberg packing house in Yuba City has more than a score of women employed packing figs in fancy boxes for Eastern trade. Large orders recently received are being filled and the bins are being cleared for the coming season.

Tehama.

EGGS FROM THE WORLD'S BEST HENS.—Colusa Sun: James Scoggins a few days ago received from the yards of W. K. Hays of Henleyville fifty White Wyandotte eggs. These eggs are from the hens that twice took the premium at the International laying contest for the world's championship at Australia.

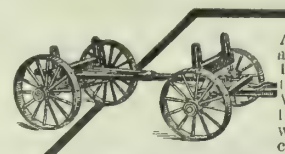
Tulare.

MAMMOTH CAULIFLOWER.—Times: Some large bunches of cauliflower have been brought to the exhibit headquarters by Albert Henry, manager of the sewer farm, and grown at that place. Two bunches measure—without the leaves—34 inches in circumference, and two bunches one on top of the other fill a 19-inch jar, 36 inches in circumference. Some China radishes that measure 10 inches in length and about 12 inches in circumference are also on exhibition.

BIG TREE WOOD FOR PENCILS.—Times: Henry Alles, from Atwell's mill on the Mineral King road, states that he is about ready to ship a carload of pencil wood from Exeter. The destination of the wood is France, where it will be used in the manufacture of lead pencils of a cheap variety. It is big tree wood and is used as a substitute for cedar, which is becoming scarce. The wood is shipped in boxes about 5 feet long, 3 feet wide and 18 inches deep. Shipments of pencil wood have been made from Sanger for several years, but the shipment being made by Mr. Alles to-day is the first carload to go forward from this county.

Yuba.

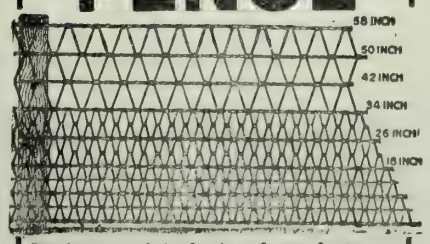
RIPE CHERRY PLUMS.—Marysville special to Sacramento Bee, Feb. 15: Mrs. Ella Hall of the Brown's Valley district brought to town ripe cherry plums grown on a tree at her place. The blossoms appeared in October last and the several branches now show the fruit in green, yellow and red, as the process toward ripening takes place.


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The Home Circle.

A Common Thought.

Humanity, when measured in the mass,
A swarm of Nothings, bound for Nowhere, seems.
Sprung from the ground, its energies repass
Into material monuments. Earth teems
With glories turned sepulchral. She is decked
With mocking ruins, architectural dreams
Of Wealth and Empire never to be wrecked:
From which the scholar gains conjectural gleams—
What more?—of races lost; the vile, the brave,
The wise, the beautiful, in one vast grave.

If this, that seems, were true; if human life
Stops here; comes here, in cerements to be hid;
If the first spadeful on the coffin-lid
Sounds the last note; if the heart's mighty strife
Against the dogma of Eternal Death
Is vain—as 'gainst a breeze an infant's breath;
Natheless, 't were well to live; to hold the hand
Of Love still closer; to upbuild the earth
Into new forms of Beauty and expand
The Mind with Art, with Music and with Mirth.

—Henry Austin.

A Piney Farmer's Soliloquy.

Oh, they call me a homely Jake,
And I own the title's true,
And I never undertake
What your solemn roosters do.

I'm just an old scrub oak,
Set in a sandy plain,
With a few pale flowers and blueberry vines,
And a lonesome dozen of yellow pines,
And the old, old wind and rain.

But because I'm dusty and plain,
Don't melt with pity for me;
The mountain pine's a majestic bloke,
And your maple pets are a pretty folk,
But I'm more jolly and free.

My faded coat's an easy old chap,
And agrees with whatever I do;
And my old slouch hat without a band
Is a fellow that I can understand,
For his language is straight and true.

And I'm losing no sleep at night
For envy of Smythe or Browne,
And I wouldn't swap my free estate
With the hide-clipped fine, and the tall-cropped great,
For the best jackknife in town.

And my soul is full of glory,
For my heart is full of love,
For the tender flowers and pale sweet grass
That my rough boughs shelter from storms that pass,
And the fierce old sun above.

Oh, the tall lone pine's a majestic chap,
But I'm I, and he is he;—
If you'd see my hide in a tan-yard
You'd know that it was me!

—O. C. Auringer.

"Them Pants."

"Yew talk about fool things," said Cy' Cobbler, "'bout the foolishest I ever heard on happened up the street in one of the pretty bright families; want ter hear 'bout it?"

We were sitting in the blacksmith shop at Fryeburg, waiting for the afternoon mail, so I said, "Certainly." Cy' squatted down on his heels, and reached for a sliver in the floor, and pulling it out, began to whittle it.

"Wal, you know Charles Fitch, don't yer?"

I nodded.

"Wal, yer know he is tolerable good sized 'round the waist, an' not long ago he had a nice pair o' pants made down to Portland, an' brought 'em home, an' told his wife that those pants would be jest what he should want when it come a little cooler in the fall. She agreed with him, an' laid 'em one side, in a drawer in the spare room buro. There they laid until it come fall, an' Charles half forgot about 'em.

"'Bout that time they had company to his house, Charles' cousin, Sam Shaw and his wife from somewhere down Biddeford way. Sam is a slenderer man than Charles is, by a good deal. They come up to spend a week or a fortnit, and Sam an' Charles wuz goin' fishin,' an' the two wimmin could set roun' home, an' do housework an' chatter away at one 'nother, as wimmin do. Well, they come; an' Mis Shaw, she put their duds away in the closit an' buro in the spare chamber where they wuz to sleep, an', as luck would have it, she never noticed them pants of Charles', but piled a lot of her stuff rite in on top of 'em. Then she went off an' forgot about 'em.

"By an' by, when she an' Sam wuz settin' in their room, she happened to dig out them pants, an' says she to Sam, says she, 'Sam, I never knew you had these pants,' an' Sam never lookin' up said, 'Oh, yes, I got them jest before I come away,' an' went rite on with his readin'.

"Wal, Mis Shaw took them pants, an' begun to pester Sam to try 'em on, an' finally she got him to pull off the ones he had on, an' get into them new ones. Wal', sir, you should have seen the look that came over him, leastwise they said you ought to; them pants no more fitted Sam than so many meal bags wou'd. They wuz too big for him everyway; they bagged at the knees, an' they sagged at the seat, an' they more than come half way 'round him. Oh, he wuz a site.

"'Fer goodness gracious, what happened to ye', says Mis Shaw, 'I never knew you'd fell away like that; ain't you feelin' well, Sam?' Sam said he thought he wuz al' rite, but he hadn't been feelin' quite up to the scratch for a few days.

"Wal, you can never wear them pants lookin' like that,' said Mis Shaw. 'I'll fix 'em for you rite away.' So that afternoon, when Sam and Charles had gone huntin', Mis Shaw took them pants an' set down to rip 'em up an' fix 'em on. Miss Fitch never knew the diff'rence, for she'd forgotten all about them pants, of Charles', an' so she set down, too, and helped rip 'em up an' sew 'em over again. They did a tolerable good job between 'em that afternoon, an' when the boys got home at nite, when they went to bed, she had Sam try 'em on again. This time they fitted first rate.

"But that wa'n't the end, not by a darned site. Mis Shaw wuz possessed to have Sam go to dosin'. She said that it wuz plain he wa'n't well, an' I'll be darned if she didn't make that man go to takin' Cod Liver Oil, an' such drugs, till he wuz almost real sick. He wore them pants only onct, tho', while they wuz there.

"When the Shaws come to go home, Sam discovered that them pants wuz not his, an' told his wife so; an' instead of tellin' the Fitches about it, they left 'em jest where they found 'em in that buro draw'r.

"It wa'n't long after that that Charles remembered them pants, an' fetched 'em out an' tried to put 'em on one nite 'fore he went to bed, an' there wuz another scene. He couldn't no more make his great fat legs go down thro' them little pant legs without squeezin' than I could crawl thro' that winder, an' as fer getting the pants to button round his waist, he couldn't do that neither. He begun to get scairt, an' his wife too; he thought he wuz gettin' fat, or that he had a touch of dropsy, or some kind of a disease had got hold of him. I tell you, he was scairt for some time, all because of them pants. Then the wife took 'em an' looked at 'em, an' see that they had been took in a good deal in the legs, an' that the waist-band had been built over some; an' then she remembered that she had helped Mis Shaw make 'em over for Sam.

"I tell you, Charles was mad for a while, but he couldn't help laffin' at the blunder, an' he come right down town the next day an' told about it. He said he wuz goin' to rite to Sam an' make him send him a fresh pair, an' I guess he did, for when Sam come up here in the winter some of his cronies round here used to say 'Pants' to him, an' he would always set up the cigars to keep 'em still."—John S. Barrows in American Cultivator.

Things Worth Knowing.

That a piece of charcoal thrown into the pot in which onions, cabbage, etc., are boiled will absorb the unpleasant odor.

That salt is not to be added to oatmeal until it has boiled about fifteen minutes.

That a lump of butter dropped into boiling molasses or maple candy will prevent it from running over.

That a piece of lace or thin muslin, starched and put over the holes or worn places in lace curtains, will show very little and improve the looks of the curtains.

That a handful of salt, thrown into the tepid water with which straw matting is wiped up, will make it look extra fresh and clean.

That the yolk of an egg gives richness to the milk you pour over asparagus; beat it well, add butter, salt and pepper as usual.

That an ounce of alum stirred into hot milk makes a fine bath for parts affected with rheumatism. The curds which form when the mixture gets cold make an excellent poultice to put upon the parts over night.

That salt and soda, a pinch of each, put into tepid water makes as fine a dentifrice as one could wish.

That white wool articles are thoroughly cleansed by rubbing with dry flour. Shake well afterwards.

That a silver spoon, knife or fork put into a glass jar or dish will temper it so that it can be filled with anything hot, even to the boiling point.

That a raw egg, swallowed, will usually detach any foreign substance, like fishbone, if lodged in the throat.

The ink spots on linen can be removed by dipping the article in pure melted tallow. Wash out the tallow and the ink will come with it.

That a teaspoonful of ammonia in the water in which silver is washed will keep it brilliantly bright.

That fresh lard will remove tar from either hand or clothing. Wash with soap and water afterwards.

That it takes less sugar for fruits and preserves if put in after they are well cooked.

That wet cooking soda, spread upon a thin cloth and bound over a corn, will remove it.

That a paste made of equal parts of brimstone, saltpetre and lard, if bound about a felon, will cure it. Renew as soon as it gets dry.

That a few drops of lime water, added to milk, will prevent it from souring on the stomach.

That a cloth covered broom will wipe the dust from papered walls and ceilings.

That a cloth rung out of tepid water will not injure the most delicate woodwork, if wiped with it.

That indian meal and vinegar, used on hands when roughened by labor or cold, will heal and soften them.

That a little powdered borax will make washing look extra glossy when ironed, if thrown into the starch.

That a scraping of raw potato, laid upon a soft cloth and bound over sore eyes, will cure them.

That coarse brown wrapping paper soaked in vinegar and placed on the forehead and eyes is good for sick headache.

That powdered borax strewn over places frequented by ants, cockroaches and other vermin will drive these pests away.

That one teaspoonful of pure, sweet oil, taken three times a day, after meals, will cure the worst case of dyspepsia.

That hot lemonade is one of the best remedies for a bad cold.

That crushed cubeb berries, smoked in a clay pipe, will cure catarrh.

That a preparation of fat oil varnish and rectified spirits of turpentine, if applied to iron, steel and other metal articles will prevent them from rusting.

That the dullest scissors can be sharpened if you try to cut, as it were, a coarse sewing needle with them.

That a layer of sugar over preserves, jellies, etc., will prevent them from gathering mould.

That a pinch of salt will improve the flavor of apple sauce.

That a preparation of one ounce of flower of sulphur and one quart of soft water, if applied thoroughly to the scalp, night and morning, will remove every trace of dandruff and render the hair rich and glossy.

That slices of bread toasted in the oven until a golden brown are far more wholesome than those toasted in a toaster before an open fire.

That a teaspoonful of burnt sugar will give an amber color to soups made from white meats.

That a diet of tomatoes will ward off a bilious attack.

That it is true economy to begin the dinner with soup of some kind.

That fish may be scaled much easier by first dipping them into boiling water for a minute.

That a teaspoonful of sugar added to pancake batter will make the cakes a golden brown.

That fresh meat, beginning to sour, will become sweet again if placed out of doors over night.

That a glass of buttermilk taken the last thing at night will cure stomach troubles.

That kerosene will soften boots and shoes that have been hardened by water.

That a spoonful of raw cornmeal, moistened with water, taken on an empty stomach, will cure constipation, if persisted in for some time.

That a teaspoonful of turpentine put into the boiler with white clothes will aid the whitening.

That clear boiling water poured through tea stains will remove them.

That salt will curd new milk; hence in preparing dishes containing milk, the salt should not be added until they are cooked.

That wetting the hair occasionally in a solution of salt and water will keep it from falling out.—Exchange.

Domestic Hints.

Puffed Potatoes.—When nearly baked, cut a small piece from the end of the potatoes, scoop out the inside, mash and season with butter, pepper and salt. Refill the skins with this, allowing the filling to complete the form of the potato. Set in a hot oven just long enough for the souffle part to become well browned, then serve.

Oyster Shortcake.—Make a rich, light baking-powder biscuit dough and bake in layer cake tins. Split and butter each as it is taken from the oven. Scald the strained liquor drained from a quart of oysters. Rub two tablespoonfuls of butter smooth with two tablespoonfuls of flour, and stir into 1½ cups of scalded milk. Cook and stir until it thickens; add a tablespoonful of butter to the oyster liquor, season to taste with salt and cayenne, and let get hot. Add the oysters and cook "until the edges curl. Then lay the oysters on the layers of buttered shortcake, add the liquor to the sauce, blend thoroughly and pour over the oysters; then add another layer of the shortcake, then one of the oysters, and pour sauce over the whole. Sprinkle with a little minced parsley and serve very hot. This is delicious.

Jellied Apples.—A rich and attractive compote of apples is made of firm tart apples baked in the oven and served with brandy. To make it, peel, core and quarter the apples and put them in a porcelain-lined dish, with just enough water to prevent their burning. About a cupful will be required for a quart of apples. Add about a cup of sugar and the yellow rind of half a lemon cut into bits, being careful to cut away all white inner skin. Cover the apples with a china plate and let them cook for about an hour. When the apples are nearly transparent, thoroughly done, but not broken, take them out carefully and put them into the dish in which they are to be served. Cook a little of the juice, and if it is not yet a jelly boil it down to one. For this amount of apple add a tablespoonful of brandy to the jelly and pour the jelly over the cooked apples. Let the compote stand for twenty-four hours in order that the jelly around the apples may become thoroughly set. It is perfect served with cream.

Facts About Fish Diet.

The strike of the employes of the great meat packers will undoubtedly increase the demand for fish. The price of fish may go up as that of meat did as soon as the strike went into effect, but there is one consoling fact about this condition—the fish can be obtained when the meat cannot.

Fish, with few exceptions, is far below meat in nutritive value in proportion to bulk, but the same elements are contained in both. It is only necessary to eat enough fish to secure the same amount of essentials. The nutrients of the human body are protein, fat and carbohydrates. Besides these all foods practically contain a large percentage of water and a small percentage of mineral matter.

The fish containing the most nutriment are Spanish mackerel, salt water eels, salmon, shad, shad roe, salted mackerel, salted and dried cod, "boneless codfish," caviare, salted, smoked and dried herring, salted, smoked and dried halibut, and of the canned fish, sardines, salmon, fresh and salt mackerel, tunny, haddock, lobster, crab and shrimp. Nearly all of these mentioned are equivalent in nutritive value to an equal amount of veal. Salmon, No. 1 salted mackerel, caviare, salted, smoked and dried halibut, canned sardines, canned salmon and canned salt mackerel are equivalent to the average of beef, veal and mutton. Caviare, indeed, contains twice the nutriment of almost all meats and is almost equal to side pork, which contains the highest amount of nutritive elements of any meat. The large proportion of the nutriment in pork, however, it may be incidentally remarked, is fat, it being the lowest in the scale as regards protein, the most valuable nutriment.

According to Government publications based on investigations by Prof. W. O. Atwater, the percentage of actual nutriment in preserved fish is much larger than in the corresponding fresh fish, while canned fish, which in effect is cooked fish, compares favorably with fresh fish.

Shellfish resembles meat and food fish in general composition. A quart of oysters, roughly estimated, contains about the same quantity of actual nutriment substances as a quart of milk, or three-fourths of a pound of beef, or two pounds of fresh codfish, or a pound of bread. Oysters come nearer to milk than almost any other common food material, as regards both the amounts and the relative proportions of nutrients. Many oysters are "fattened" after being taken from the beds and before being sold by floating them about forty-eight hours in fresh or brackish water. By this process the oyster acquires plumpness, and its bulk and weight are profitably increased. Oyster-men commonly believe that the oyster, by this process, actually does become fatter and gains in flavor.

Careful experiments indicate that what the fresh water actually does is to dissolve the salt from the tissues of the oyster and distend them with water. This increases the weight and reduces the nutritive material from one-eighth to one-fifth. Many consumers think the improvement in flavor compensates for the decrease in nutritive value. The "fattening" also decreases the vitality of the oyster. Green oysters are not injurious, as some suppose. This color is due to the green plant life on which oysters sometimes feed.

Experiments indicate that in case of man, fish and beef are about equally digestible, and that salt fish is less thoroughly digested than fresh fish. Most physiologists regard fish as a particularly desirable food for persons of sedentary habits. The widespread notion that fish contains a large proportion of phosphorus and is, therefore, especially valuable as a food for the brain, is not accepted by many physiologists. There is no experimental evidence to warrant this assumption.

There are several species of fish which are actually poisonous, but few of them are found in the United States, and the chances of their being offered for sale are small. Fish may contain parasites, some of which are injurious to man. Thorough cooking, however, destroys them. To insure freedom from ptomaine poisoning, care should be taken to eat fish only when it is in perfectly good condition. Fish which has been frozen, and after thawing, kept for a time before it is cooked, is especially likely to contain ptomaines. Canned fish should never be allowed to remain long in the can after opening, but should be used at once.

Just before the last total eclipse of the sun Percival Lowell, the astronomer, told an old negro acquaintance that if he would watch the chickens at his place the next day he would see them go to roost at eleven o'clock in the morning. The negro was plainly skeptical—in fact, looked upon the prophecy as a good joke. But when the event came to pass, as the astronomer had said it would, the darkey was not only puzzled but decidedly impressed. "How long, sah, did you know 'bout dis?" he asked the astronomer. "Oh, a long time." "Did you know dey would go to roost a year ago?" "Yes; fully a year ago." "Well, dat beats all," said George, in an awed voice; "dem chickens wusn't hatched a year ago."—Exchange.

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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, February 21, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 18 @1 19⅞	1 01½@1 02¾
Thursday	1 18¾@1 21½	1 01⅝@1 02¼
Friday	1 21 @1 18⅜	1 02 @1 01⅝
Saturday	1 18⅜@1 19⅞	1 01¼@1 01⅜
Monday	1 18⅝@1 18½	1 02⅛@1 01⅞
Tuesday	1 18⅜@1 18⅝	1 01⅜@1 01⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	46¾@47⅜	47⅜@48⅛
Thursday	46½@47¼	47¼@47¾
Friday	46⅜@46¼	47¼@47
Saturday	46⅜@46¾	46⅞@47⅜
Monday	46⅝@46¾	47¼@47⅝
Tuesday	46¾@46½	47 @47⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 48¾@1 49⅛	$1 28¼@1 29
Friday	1 48⅜@1 48⅞	1 28¼@1 28⅜
Saturday	—@—	—@—
Monday	1 47⅝@1 48¼	1 28¼@1 27½
Tuesday	—@—	1 27⅝@1 27¼
Wednesday	—@—	—@—

*Holiday.

Wheat.

There was considerable bearish talk sent afloat the past week from the prominent speculative pits of the country, but prices were not depressed to any noteworthy extent in consequence, either for options or spot wheat. As a matter of fact, Chicago futures touched slightly higher levels than preceding week. In the local market there was little fluctuation in speculative prices for either May or December wheat, values keeping close to best figures of previous week, but trading was light. One bear statement was that foreign markets were weakening on account of heavy offerings from Australia. This is contrary to reliable advices received here lately from Australia, stating that the charter market there for ships was very weak, owing to the heavy supply of idle tonnage and difficulty in securing wheat cargoes, as farmers were storing much more wheat than they were offering for sale, not being satisfied with the prevailing prices. Spot wheat in this center has ruled steady, with offerings decidedly limited. Nothing doing in charters. For new crop loading, usual option of European ports, 20s is bid, and 22s 6d asked.

California Milling	$1 57½	@1 62½
Cal. No. 1 shipping, alongside	1 42½	@1 45
No. 1 Oregon Club	1 42½	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.49⅛@1.47⅞.
December, 1905 delivery, $1 29@1.27¼.
Tuesday, at the forenoon session of Exchange for May, 1905, wheat $1 47¾ was bid; December, 1905 sold at $1.27½@1.27¼.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@15s	10@12½s
Local market	$1 37½@1 42½	$1 42½@1 47½

Flour.

Stocks are not of large volume, especially of recent makes of well and favorably known brands. The outward movement is rather light, but local trade is of fair average proportions. Values are without quotable change, but for desirable qualities are being well maintained at the current range.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley

The general tone of the barley market has shown no pronounced change since last report. Spot offerings are light, otherwise some weakness might be developed, as new barley will likely be on market inside of four months. There is an increased acreage in barley and present prospects could not well be better for the coming harvest. The steamer Brinkburn, sailing from here on 2nd inst. for Vladivostock, via Comox, B. C., and carrying forage supplies for the Russian army in Manchuria, part of the cargo being 2,000 tons barley, has been ordered back from Comox to this port to discharge, on account of owners fearing seizure by the Japanese, the previous forage shipments from this port for the Russian forces having been captured by the Japs. That the unloading of this barley on the local market will cause much depression is not probable. A steamer has been chartered to load barley for Japan.

Feed, No. 1 to choice	$1 17½	@1 20
Feed, fair to good	1 16½	@1 17½
Brewing, No. 1 to choice	1 23½	@1 25
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 22½

Oats.

Market is lightly stocked with all descriptions and is firm at prevailing values. Strictly fancy oats are in such slim supply as to be hardly quotable. There is no probability of offerings of this cereal being of other than small proportions during the balance of the season. About 100 tons shipped for Asiatic Russia has been returned here on the steamer Brinkburn, the owners of the vessel not caring to take the chances of running the blockade.

White oats, fancy feed	$1 52½	@1 57½
White, good to choice	1 47½	@1 52½
White, poor to fair	1 40	@1 45
Milling	1 45	@1 55
Black oats	1 35	@1 65
Red, fair to choice	1 35	@1 55

Corn.

Tendency of the market has been to more firmness, especially on Eastern product, which constitutes the bulk of present offerings. Markets in the Middle West have been stiffening in consequence of special freight rates to the Atlantic seaboard on corn destined for Europe. Some corn is going outward from here, all Eastern, the California product being at present too damp to export.

Large White, good to choice	$1 30	@1 35
Large Yellow	1 32½	@1 37½
Small Yellow	1 75	@1 90
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 30	@1 37½

Rye.

Market is firm at a further advance, stocks being decidedly light.

Good to choice	$1 52½	@1 60

Buckwheat.

In the absence of noteworthy offerings, there is little opportunity for business in this cereal. Demand for seed is expected to take all the buckwheat on this market.

Good to choice	$1 75	@2 00

Beans.

Market is showing more activity and more firmness, as foreshadowed in previous review in the PACIFIC RURAL PRESS. Not only was the last Michigan crop very badly damaged by rain, as was also the crop in this State, but stocks of foreign beans in Eastern centers are insignificant, while a year ago they were heavy. Instead of beans being imported in the East from Canada and Europe, there is an export demand for domestic. Good beans of any variety are not likely to go begging for custom during the balance of this season.

Pea, fair to good, 100 lbs	$3 00	@3 25
Small White, good to choice	3 25	@3 50
Large White	2 60	@2 80
Pinks	3 30	@3 60
Bayos, good to choice	2 75	@3 25
Red Kidneys	4 50	@5 00
Reds	4 00	@4 50
Limas, good to choice	4 35	@4 60
Black-eye Beans	2 50	@2 75

Dried Peas.

Choice are scarce and wanted. For off qualities there is little inquiry at any figure.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 75	@2 25

Hops.

The local market is exceedingly quiet, with values not clearly defined, in consequence of the existing dullness. The New York Producers' Price Current says: "A dull and dragging market has characterized the hop trade. We hear of offerings from the coast of prime hops at 25c there, without finding any takers. In New York State there is absolutely no business and the market is at a standstill. Dealers are not in need of any State hops and therefore not making any offers for anything. Some of the holders of long stock are anxious to unload and are offering brewers' State hops at 30c and Pacifics as low as 27c. Contracts for 1905 growth are being offered in large quantities by Pacific dealers to brewers at 20c. Reports from Germany and Austria indicate that in both countries the result of the crop was placed at too low a figure, in consequence the amount of stock left in dealers' and growers' hands is a surprise to every one. Prices have declined about 15 marks. The English market is reported as dull, with no inquiries from brewers. To meet present conditions there is a further cut in our quotations."

California, good to choice, 1904 crop	25	@27½

Wool.

Little doing here, owing to the market being almost bare of stocks. Quotations are necessarily largely nominal for the time being, but there is a firm tone, with prospects that this year's wool will meet with an active demand at good prices. The decrease in the production of wool last year in the British colonies and Argentina is reported to approximate 300,000 bales. An increase of 150,000 to 180,000 bales is predicted for coming season in Australia, and lighter gains in South Africa, but no material increase is looked for in the output of Argentina.

SPRING.

Northern, free	22	@24
Northern, defective	18	@21
Middle County, free	20	@23
Middle County, defective	17	@19
San Joaquin and Southern, free	15	@17
San Joaquin and Southern, defective	13	@14
Southern lambs, as to quality	13	@16
Oregon, good to choice	20	@23
Nevada	16	@22

Hay and Straw.

The hay market remains weak, with supplies ahead of the demand, and indications are not favorable for any special improvement in the near future. The shipment of 39,688 bales by steamer Brinkburn for the Russian army in Asia has been returned, by order of the owners of the vessel, as all previous shipments for the Russian Government were captured by Japanese warships.

Wheat, good to choice	$11 00	@13 50
Wheat and Oat	9 50	@11 50
Tame Oat, fair to choice	8 00	@11 00
Wild Oat	7 00	@ 9 50
Barley	7 00	@10 00
Alfalfa	7 50	@10 50
Clover	6 00	@ 9 50
Stock hay	6 00	@ 7 50
Compressed	11 00	@13 50
Straw, ₱ bale	25	@ 50

Millstuffs.

Demand for Bran and Middlings is not particularly active, but stocks are rather light, mostly in few hands and are being in the main steadily held. Current values on Rolled Barley and Milled Corn are being well maintained.

Alfalfa Meal, ₱ ton	$21 00	@22 50
Bran, ₱ ton	20 50	@21 50
Middlings	25 00	@28 00
Shorts, Oregon	20 50	@22 50
Barley, Rolled	25 00	@26 00
Cornmeal	30 00	@30 50
Cracked Corn	30 50	@31 00
Oilcake Meal	32 50	@34 00

Seeds.

Market is quiet for most kinds of seeds quoted herewith, values for prime to choice remaining practically the same as previously noted. Some papers are quoting Alfalfa seed at a decidedly low range of values. Prime to choice is commanding the figures we quote. There is some inferior seed on the market, largely Sweet Clover, and this sort is hardly quotable; the same would prove dear to growers at almost any figure.

Flax	$1 75	@2 25
Mustard, Yellow	3 50	@4 00
Mustard, Trieste	4 50	@5 00
	Per lb.	
Alfalfa	12	@13½
Canary	6¼	@6½
Rape	1¾	@2¼
Hemp	3½	@—
Timothy	5	@5½

Honey.

Not much inquiry, either for shipment or on local account. Market shows in the main an easy tone, especially for Comb and the ordinary grades of Extracted. Supplies of uncandied water-white Extracted are not heavy, and for this description tolerably firm figures are being realized in a limited way, mainly on local account.

Extracted, White Liquid	6	@6½
Extracted, Light Amber	4½	@5½
Extracted, Amber	3¾	@4¼
Extracted, Dark Amber	3	@3½
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

Desirable qualities are in limited stock, and more than is offering could be readily placed at full current rates.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Values for Beef remain quotably as last noted, with demand fair for prime to choice. Veal of desirable size is not in very heavy receipt, and in good request at full current figures. Mutton is in rather liberal supply and market not particularly firm. Spring Lamb is in light receipt; choice is meeting with prompt custom. Few Hogs coming forward and market is firm at last quoted advance.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6	@6½
Beef, 2nd quality	5½	@—
Beef, 3rd quality	4½	@5
Mutton—ewes, 6½@7c; wethers	7	@7½
Hogs, hard grain, 130 to 200 lbs	5½	@—
Hogs, large, hard, over 200 pounds	5⅛	@5⅜
Hogs, small, fat	5⅛	@5⅜
Veal, large, ₱ lb	6½	@8
Veal, small, ₱ lb	7	@9
Lamb, yearlings, ₱ lb	8½	@9
Lamb, spring, ₱ lb	12½	@15

Hides, Skins and Tallow.

Market for wet salted hides is quiet and slightly lower. Prevailing values on dry hides are being well maintained. Pelts and tallow are in moderate request, prices remaining without quotable change.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11½	— @10
Medium Steers, 48 to 56 lbs	— @10½	— @9½
Light Steers, under 48 lbs	— @10	— @9
Heavy Cow Hides, over 50 lbs	— @10	— @9
Light Cow Hides, under 50 lbs	— @10	— @9
Stags	7 @7½	6 @6½
Wet Salted Kip	—@10½	— @9⅝
Wet Salted Veal	—@11	— @10
Wet Salted Calf	—@13	— @11
Dry Hides	— @18	— @17
Dry Kip and Veal, 11 to 16 lbs	— @16	— @14
Dry Calf, under 4 lbs	— @20	— @18
Pelts, long wool, ₱ skin	1 25	@1 75
Pelts, medium, ₱ skin	90	@1 10
Pelts, short wool, ₱ skin	50	@ 75
Pelts, shearling, ₱ skin	15	@ 40
Horse Hides, salted, large prime, each	3 00	@—
Horse Hides, salted, medium	2 50	@—
Horse Hides, salted, small	2 00	@—
Horse Hides, dry, large	1 75	@—
Horse Hides, dry, medium	1 50	@—
Horse Hides, dry, small	1 00	@—
Tallow, good quality	4	@4¼
Tallow, poorer grades	2¼	@3¼

Bags and Bagging.

Trade in this line is light at present. Grain bags are being very steadily held, dealers anticipating an active demand the coming summer.

Bean Bags	$	4¾@5
Fruit Sacks, cotton		6½@7¼
Fruit Sacks, jute, as to quality		5¾@7
Grain Bags, Calcutta, 22x36, spot		5¾@6
Grain Bags, Calcutta, buyer June-July		6¼@6¾
Wool Sacks, 4-lb		32 @—
Wool Sacks, 3½ lb		30 @—

Poultry.

Arrivals have been rather light the past week, both of California and Eastern poultry, and market for most kinds showed decided firmness, more especially spurless Young Roosters, Fryers, large Broilers, large Young Ducks and fat Goslings. Young Pigeons in fine condition also sold to good advantage, being in light receipt. Turkeys were mostly poor, as is generally the case at this time of year, having what is termed a "grassy" flavor, and did not receive much attention.

Turkeys, Dressed, choice, ₱ lb	$ 20	@24
Turkeys, live gobblers, ₱ lb	18	@20
Turkeys, live hens ₱ lb	18	@20
Hens, California, ₱ dozen	5 00	@5 50
Hens, large	6 50	@7 00
Roosters, old	5 00	@5 50
Roosters, young (full-grown)	6 50	@7 50
Fryers	5 50	@6 00
Broilers, large	4 00	@4 50
Broilers, small to medium	3 50	@4 00
Ducks, old, ₱ dozen	5 00	@6 00
Ducks, large young, ₱ dozen	6 50	@7 00
Geese, ₱ pair	2 00	@2 50
Goslings, ₱ pair	3 00	@3 50
Pigeons, old, ₱ dozen	1 00	@1 25
Pigeons, young	2 25	@2 75

Butter.

Choice to select fresh is in fairly liberal supply and market tending in favor of buyers, although at inside figures there is a tolerably good demand for shipment. Cold storage supplies are about cleaned up. Common store butter is scarce and sought after.

Creamery, extras, ₱ lb	26	@—
Creamery, firsts	25	@—
Creamery, seconds	23	@—
Dairy, select	25	@—
Dairy, firsts	23	@—
Dairy, seconds	21	@22
Mixed Store	15	@17

Cheese.

Domestic flats have been in active request for shipment, and market in consequence is quite firm, present stocks being very light. Small sizes are in fair supply and the demand for them only moderate.

California, fancy flat, new	12	@—
California, good to choice	10½	@11½
California, fair to good	10	@10½
California, "Young Americas"	10	@12½
Eastern	14½	@15½

Eggs.

Owing to tolerably free shipments outward, not many eggs were carried over from previous week. Fresh arrivals proved more than ample, however, for the local demand, while most of the buyers on outside account were holding off for heavier accumulations and an easier market. Values continue at a very narrow range.

California, select, large, white and fresh	23	@—
California, select, irregular color & size	22	@—
California, good to choice store	21	@22
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Fresh vegetables showing prime to choice condition were in light receipt. Peas and String Beans arrived rather freely from the southern section, but were mostly of ordinary quality. Tomatoes were scarce and high. Asparagus arrived in sufficient quantity to warrant regular quotations. Onions were steadily held, but did not meet with active demand at full figures.

Asparagus, fair to choice, ₱ lb	25	@40
Beans, Lima, ₱ lb	—	@—
Beans, String, ₱ lb	10	@15
Beans, Wax, ₱ lb	—	@—
Cabbage, choice garden, ₱ 100 lbs	50	@60
Egg Plant, Los Angeles, ₱ lb	—	@—
Garlic, ₱ lb	8	@10
Mushrooms, ₱ lb	—	@—
Onions, Yellow Danver, ₱ ctl	2 50	@2 75
Peas, Green, ₱ lb	4	@7
Peppers, Bell, ₱ lb	10	@15
Peppers, Green, ₱ lb	7	@10
Rhubarb, ₱ lb	4	@6
Summer Squash, Los Ang., small b'x	75	@1 25
Tomatoes, ₱ box	1 00	@2 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Offerings of choice to select Burbanks were not heavy and were favored with a tolerably firm market. Common qualities were in liberal supply, as compared with the demand for this sort. There is considerable inquiry for seed potatoes, desirable stock bringing comparatively good prices.

Early Rose, ₱ cental	1 35	@	1 50
Salinas Burbanks, ₱ cental	1 00	@	1 50
River Burbanks, ₱ cental	65	@	1 00
River Reds, ₱ cental	65	@	75
Oregon Burbanks, ₱ cental	1 00	@	1 30
Sweet Potatoes, ₱ cental	75	@	1 00

Fresh Fruits.

Apples continued in heavy supply and market lacked firmness, especially for other than most select. A few favorite varieties, if of very superior quality, were salable in a limited way at a moderate advance on quotations.

Apples, fancy, ₱ 50-box	1 50	@	1 75
Apples, good to choice, 50-lb. bx	1 00	@	1 25
Apples, fair to good, ₱ box	75	@	1 00
Apples, Lady, ₱ box	—	@	—
Persimmons, ₱ regular box	—	@	—
Strawberries, large, ₱ chest	—	@	—

Dried Fruits.

Market has been exceedingly quiet the past week, but with light stocks of most kinds, there has been little effort to press goods to sale. The extremely cold weather experienced East has operated against shipments being made in that direction, but with the opening of the spring season there is likely to be considerable inquiry on Eastern account, as dealers East are reported carrying no large quantities of any sort. Prunes of the medium sizes continue plentiful. Evaporated Apples are in quite limited supply, as are also Apricots, Peaches and Pears of desirable quality. The steamer Senator, sailing Saturday, carried 47,000 lbs. dried fruit, including 31,300 lbs. Prunes, 5000 lbs. Apricots and 5000 lbs. Peaches, mostly for Winnipeg.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4½@ 5
Apples, extra choice to fancy, 50-lb boxes	6 @ 6½
Apricots, Moorpark	9½@11½
Apricots, Royal, good to choice, ₱ lb	8 @ 9
Apricots, Royal, fancy	9½@10½
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ₱ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Stocks are largely of the cheaper grades and are not receiving much attention. Quotable values are without change and are based on asking figures.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4 crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel		3¼@3½c	
3-Crown Standard		3¾@4 c	
4-Crown Standard		4¼@ —c	
Seedless Thompsons		—@4¼c	
Seedless Sultanas		—@3 c	
Fancy, 16-oz. Seeded		6 c	
Choice, 16-oz. Seeded		5 c	
Fancy, 12-oz. Seeded		4⅞c	
Choice, 12-oz. Seeded		4½c	
Bleached Sultanas, Woodland Dist., 50s		4¼@4¾c	
Bleached Thompsons, Woodland Dist., 50s		5½@8 c	

Citrus Fruits.

Demand was fair for Oranges, but offerings were in excess of the requirements and market for Navels and Seedlings was quiet. Tangerines were in rather light stock. Lemon market was slow at quotably unchanged values. Limes were in scant supply.

Oranges, Navels, ₱ box	75	@1	75
Oranges, Blood, ₱ box	—	@—	
Oranges, Seedlings, ₱ box	75	@1	10
Oranges, Cal. Tangerines, half box	1 00	@1	25
Oranges, Japanese Mandarins, ₱ box	75	@1	00
Lemons, California, select, ₱ box	2 50	@2	75
Lemons, California, good to choice	1 75	@2	25
Lemons, California, fair to good	1 50	@2	50
Grape Fruit, ₱ box	1 25	@2	00
Limes, Mexican, ₱ box	5 00	@5	50

Nuts.

Trade at present is dull in nuts of all descriptions. There is little other than asking figures upon which to base quotations.

Chestnuts, Italian, ₱ lb	7 @ 8
Nonpareil Almonds	14 @16
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

The wholesale market for wines in this center is ruling steady but very quiet. Dry wines of desirable quality are not offering in great quantity from first hands. Last year's vintage of dry stock is quotable at 14@17c per gallon for fairly good to choice, San Francisco delivery. Sweet wines of 1904 are obtainable at 25c per gallon at wineries, buyers furnishing cooperage. The steamer Costa Rica, sailing Saturday, carried 29,884 gallons, all but 827 gallons being for New York. Receipts of wine at San Francisco last week were 411,300 gallons, and for preceding week were 455,005 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904	Same time last year.
Flour, ¼ sks	68,239	3,050,924	3,795,731
Wheat, ctls	35,035	2,208,337	1,617,024
Barley, ctls	24,794	2,700,267	4,682,065
Oats, ctls	7,143	692,354	764,869
Corn, ctls	4,263	152,042	112,757
Rye, ctls	683	47,685	42,108
Beans, sks	19,516	499,883	588,988
Potatoes, sks	26,116	912,356	937,023
Onions, sks	3,261	100,927	112,702
Hay, tons	3,601	130,320	124,756
Wool, bales	13	40,276	35,583
Hops, bales	98	36,349	28,625

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904	Same time last year.
Flour, ¼ sk	32,100	2,174,768	2,534,768
Wheat, ctls	449	800,487	740,468
Barley, ctls	8,689	1,689,308	3,706,534
Oats, ctls	107	51,140	16,957
Corn, ctls	2,200	72,158	13,862
Beans, sks	758	41,413	32,584
Hay, bales	3,691	182,205	121,640
Wool, lbs	....	830,691	1,848,923
Hops, lbs	1,016	298,155	545,048
Honey, cases	51	1,564	4,154
Potatoes, pkgs	5,991	78,476	78,973

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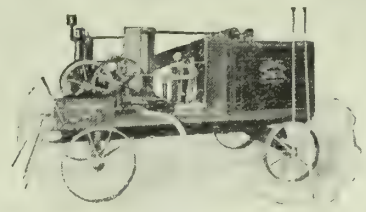
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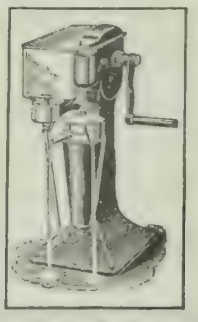
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THE POULTRY YARD.

Hints on Poultry Industry.

Mr. A. W. Robinson, an experienced poultry man well known to our readers, gives the Napa Register some hints which are applicable beyond the parish which he particularly addresses. Interest in matters pertaining to poultry raising in the vicinity of Napa is increasing. There is more inquiry for suitable sites for poultry farms, large or small, than at any former period. For the most part the area desired by new comers is from five to ten acres. The largest poultry enclosure in the valley is undoubtedly at the State hospital near Napa, comprising twelve acres of land, which for beauty of situation and for adaptation to the use to which it is put cannot be excelled in California (of course) elsewhere.

Petaluma is the poultry center of this State and the industry there has reached large proportions. It is estimated that there are 800,000 hens, young and old, that pay tribute to the business of that progressive town. Napa has many advantages for the successful prosecution of this business of which Petaluma cannot boast, notably the absence of cool, harsh sea breezes. Our climate is far more equable and it is the opinion of not a few unbiased persons well qualified to judge, that the climate of Napa valley is peculiarly well adapted to the successful raising of poultry of all kinds.

Land suitable for a poultry farm should be first and foremost well drained and preferably rolling. If it is partially shaded, so much the better. Our adobe lands are too level and will prove too wet and muddy in the rainy season for the successful yarding of poultry. In the immediate vicinity of Napa there is a large area of land that cannot fail to satisfy the most exacting poultryman. This fact is becoming better known, as is evidenced by an increased call for tracts thus situated.

While in the neighborhood of Petaluma land for poultry plants, large or small, commands from $100 to $200, and even more, per acre, far better locations can be obtained in this valley for from $60 to $70 and $80 per acre. These tracts are gradually being purchased and it cannot be expected that one can forever secure such bargains.

What gave Petaluma much of her fame as a poultry section was, undoubtedly, the establishment there of an incubator factory. That gave a great impetus to the business of egg farming. Now there are three such manufactories in that prosperous town. From that locality incubators and brooders are sent all over the coast, to distant Eastern States and to far away lands across the oceans.

On an average $3000 daily in clean cash is paid by the merchants of Petaluma for eggs and poultry brought them from the surrounding country. If Napa could assure herself one half that sum it would mean more prosperous times for all classes of our citizens. Keep this in mind.

Breeds.—Rhode Island Reds are said to be the coming hens in the Eastern States. Certainly they are rapidly gaining in popularity with the poultry loving public. But here in California the White Minorcas are rapidly forging to the front and are, in many localities, holding their own and more, with the White Leghorns, which is saying a great deal. The White Minorcas are prolific layers, their eggs are very large, pure white, and of an attractive appearance. One poultry dealer, who for several years has raised many varieties of our most popular breeds of fowls, informs the writer that the demand for these hens is unprecedented. There is also a standing demand for White Leghorn laying stock, well bred pullets easily commanding $1 apiece. It is rare that one can purchase them at this or any other price, for there is money in poultry.

Egg Laying.—For several years the Maine Experimental Station has freely and widely disseminated much useful knowledge appertaining to poultry raising. By careful breeding through a score of years the managers of the poultry department of the station above named have produced a strain of hens that lay over 200 eggs per year. One hen is said to have laid 251 eggs during the period named. It may be possible, in the not distant future, to develop a hen which will equal the record set by that notable fowl of "Old Grimes," who lived a century or two ago. Said hen is asserted to have laid continuously "two eggs a day and Sundays she laid three."

On an average hens lay about eighty eggs per year. Any one can readily see that it pays to develop a good laying strain of fowls. It costs more to keep a poor laying hen than a good one. It is economy for any one to possess the best stock possible of any kind.

The poultry farmers of Australia have for a long time taken great interest in their flocks. Two international egg laying contests have already been held there. In the last, which recently closed, seventy pens of six hens each competed with the following results: White Wyandottes, 1308 eggs; Black Orpingtons, 1274 eggs; Blue Andalusians, 1233 eggs; White Leghorns, 1225 eggs; Brown Leghorns, 1203 eggs. Cost of feeding all hens, $590.64; market value of all eggs, $1808.90; profit, $1218.32 on 442 hens, or $2.75 per hen.

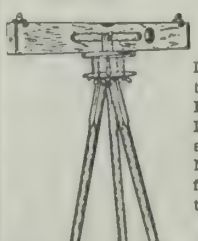
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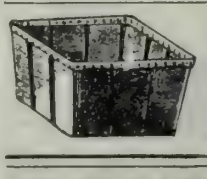
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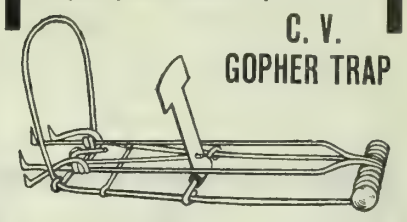


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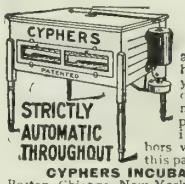
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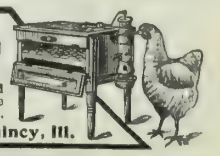
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HUNT WILD BULLS.—Santa Rosa Democrat: Charles Wolgamott of Geyserville and a friend had an exciting hunt on the old J. I. Parsons ranch in the hills some distance from Geyserville. The ranch during the time it was owned by Mr. Parsons was used as a stock range principally. The present owner has also kept it as such, and two bulls have been running on the range for several years. Some time since the animals became dangerous and were designated as "wild bulls." Wolgamott and another hunter went into the hills to hunt for the bulls. They searched all day without success, and just at night they suddenly became aware of a noise in the thick brush near them and a series of angry snorts. A bull—the largest of the two sought—came tearing towards them. Both men stood their ground and it took four bullets to kill the beast. After the first bullet struck him the bull became more enraged and charged again and again. Finally he rolled down over an embankment and in a few moments was dead. The other bull was not seen and there is another hunt in prospect.

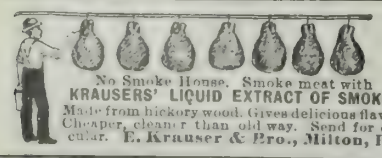
BAD TIME FOR SQUIRRELS.—Porterville Messenger: Water has begun to come down Tule river with a good head, and we are told that this will be a blessing to the alfalfa grower, as it will enable the rancher to flood his fields and drown out the squirrels, which at this time of year do a whole lot of damage to the alfalfa crop. It is said that when a field is flooded the squirrels will remain in their holes just as long as such a thing is possible and then they will come to the top and swim for high ground. A good dog will kill more squirrels at this time in a day than a man with a smoking outfit will kill in a week. It is said that on one field not far from this city an average of 100 squirrels to the acre were killed during the flooding season last year.

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Write to-day for free circular describing process of preparing sheep manure so that it is readily assimilated by plant life. No better fertilizer for impoverished soil.
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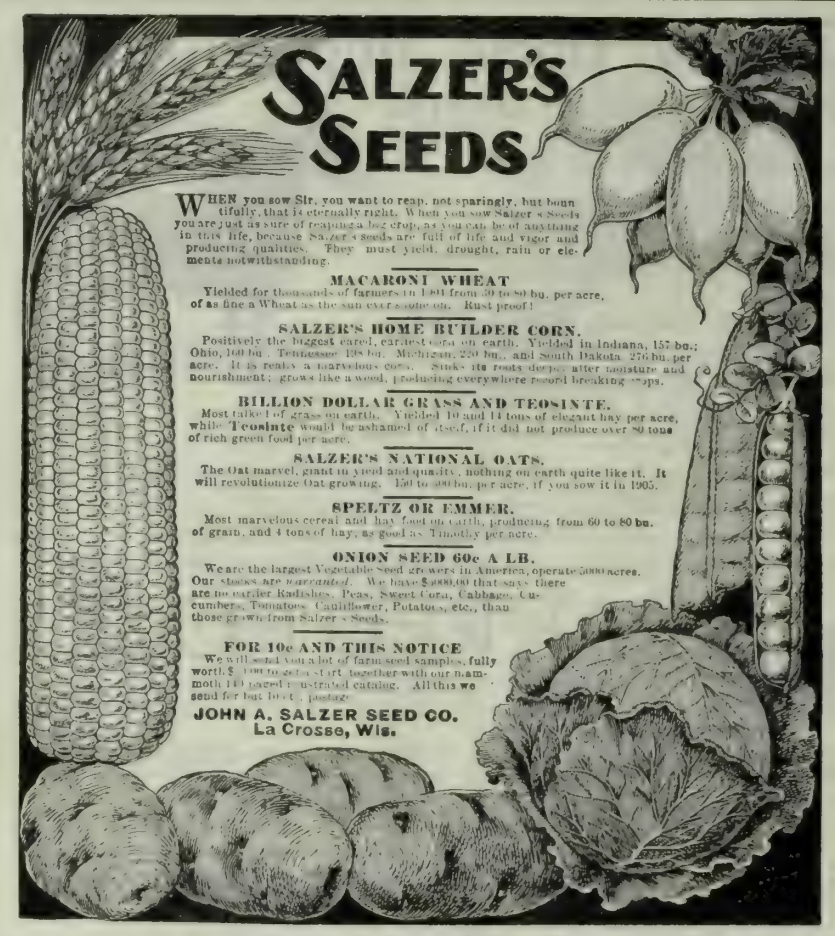
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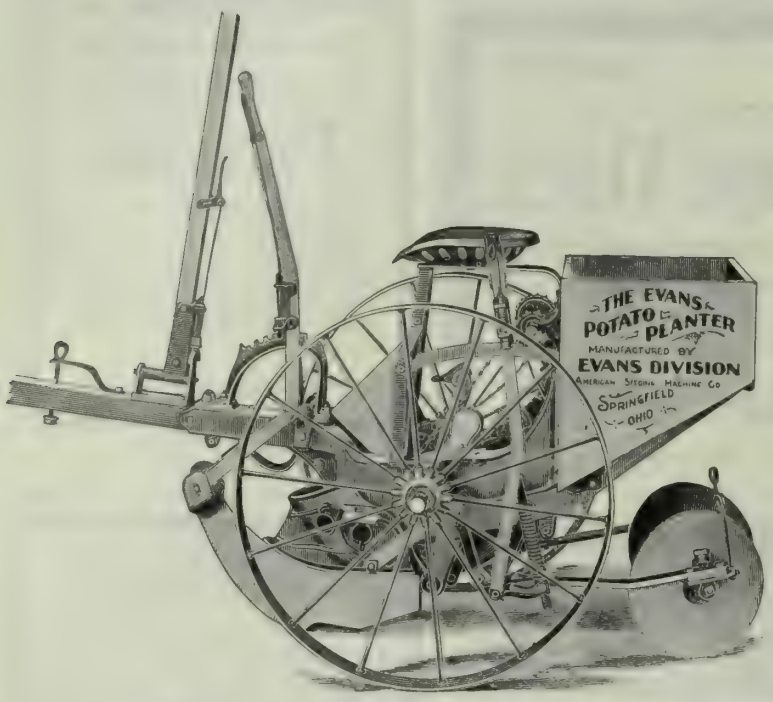
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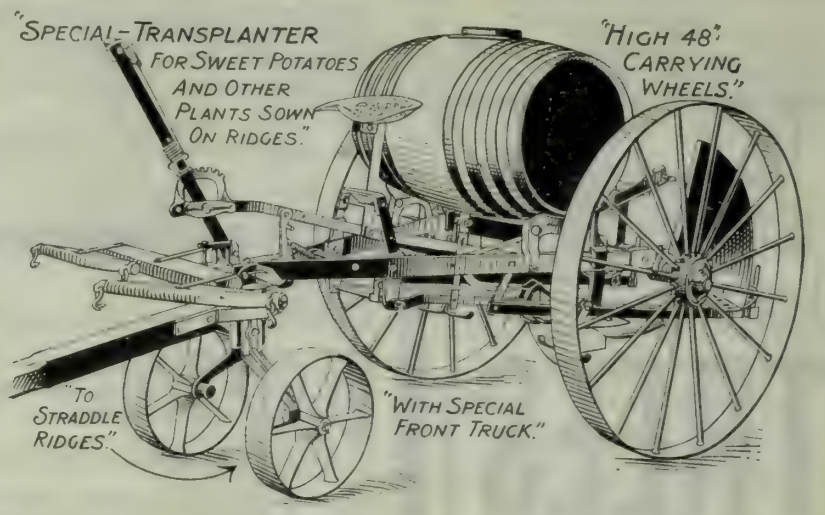
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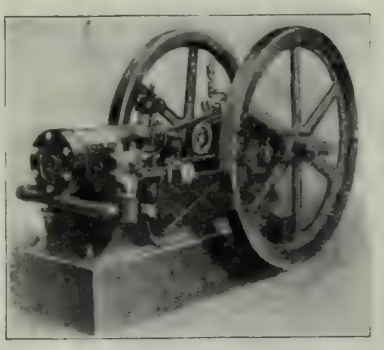
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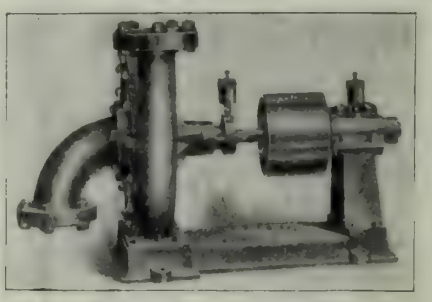
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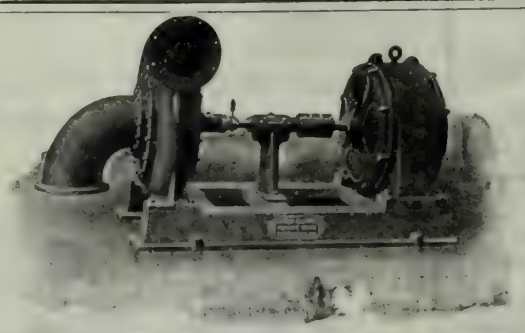
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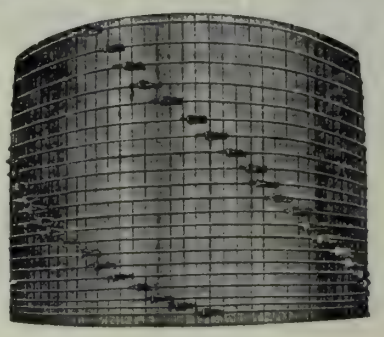
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AN ILLUSTRATED CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 9. SAN FRANCISCO, SATURDAY, MARCH 4, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Two Good Plants.

Two good plants which should be more widely used in California, although they are now familiar to many, are shown in the pictures on this page, being reproduced from the Seed Annual of the Cox Seed Company of this city. First is a native plant worthy of wider use as a hedge plant and more satisfactory than others which are better known. It is the native evergreen cherry (Prunus ilicifolia), the specific name given because its leaves are ilex-like; and as holly is the common name of an ilex, this plant is also called the holly-leaved cherry. It is perhaps better known for garden purposes at the East and in Europe than here, which bears out the scriptural precept about the neglect of a prophet in his own country. A writer for the Rural New Yorker speaks of the plant as "one of the several handsome evergreen shrubs or small trees indigenous to the California coast region, which is known also as the Spanish wild cherry and Evergreen mountain cherry. It is neat and compact in growth, bears rather conspicuous white flowers in spring and large purple or black fruits, in racemes of three or more, in autumn. The leaves are glossy, somewhat crinkled and armed at the margin with spines somewhat like our eastern holly, but are duller in color. The tree is not hardy in the Atlantic States. Forms with larger, smoother leaves and more showy fruit are found in the islands off the southern California coast. The best of these is known as the Santa Catalina variety. This holly-leaved cherry is a close relative to the European evergreen cherry laurel (P. laurocerasus) and the wild or mock orange of the Southern States (P. caroliniana). Both have glossy ornamental evergreen foliage, small white blooms and black, inedible fruits."

The other plant is the Boston ivy—so called because, after its introduction from Japan, it was first largely used in the bean city. It is a great improvement on the old Virginia creeper, because it clings closely without any assistance to a stone or brick wall or a wooden surface. It is widely planted in California, where it succeeds admirably and is much admired. It preserves the outline of the wall and thus heightens architectural effect.



California Evergreen, Holly-Leaved Cherry (Prunus Ilicifolia) as a Hedge Plant.



Japanese or Boston Ivy (Ampelopsis Veitchii).



Nevada Flock Industry—The Finished Mutton Product Ready for Shipment.

Nevada Mutton Product.

We have had much about Nevada sheep during the last year, following the reports upon the wool industry of Nevada by Prof. P. Beveridge Kennedy of the Agricultural Experiment Station at Reno. A fitting finish for the present is a view of the mutton contingent of the flocks ready for shipment. Months before the dry ewes and wethers are herded by themselves and are brought down to the home ranches near the railway in August. In September the ewes which have raised lambs are also brought to the same points, and those which have poor teeth are culled out, as their range days are over. From all these classes the mutton product is gleaned. The wether bands are started to be shipped about the middle of August and continued until all are shipped. Those shipped before October 1st usually go to the San Francisco market direct, while those shipped after are put on alfalfa pasture in the vicinity and later fed hay, about 100 000 sheep from eastern Nevada being fed on the Lovelock pastures every fall. These sheep are kept for the winter market and shipped as occasion demands.

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SAN FRANCISCO, MARCH 4, 1905.

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The Week.

The greatest agricultural event of the week is the passage by both houses of the Legislature of the bill providing for extension of agricultural instruction along practical lines at the State University. It is a victory for the rational constructionists as against the destructive separatists, who have attempted to ignore the agricultural foundation provided at the State University and the building which has been done upon it during the last thirty-five years. The rational view was, of course, to associate science and practice in the agriculture of the University, as it should be associated in all other progressive undertakings, and to extend the teaching staff so as to cover the new subjects. This is what the Legislature has now determined to do by enacting a law which provides that a University farm shall be selected by a commission consisting of the Governor of the State of California, who shall be the president of said commission; the President of the University of California; the Lieutenant Governor of the State of California; the President of the State Board of Agriculture, and the State Commissioner of Horticulture of California. It rests with this commission to determine where the farm shall be and the size of it, the choice being with due reference to the purposes for which it is to be used. It must be first-class tillable land, and its soil, location, climate and general environment be typical and representative of the best general agricultural conditions in California, and be capable of successfully producing the general crops of the State, and as many as may be of all of the crops and products successfully grown in California. It is provided that no site or tract shall be chosen, one-half of which at least is not susceptible of irrigation, and for which a water right is not purchased or procured at the time the land is selected. Undoubtedly there will be many eligible sites meeting these conditions, and the Commission has quite a task entrusted to it. Concerning the duties of the University in the use of the farm, we shall speak later after the Governor of the State shall have approved the bill, which it is understood he is fully disposed to do. It will be a great thing for the agriculture of the State that this new and needed equipment has been generously provided for the University.

Wheat has been less agitated here than elsewhere during the week. In Chicago, owing to the abandonment of a contemplated deal it is said, May wheat ran down 4½c and recovered half of it while July dropped 3c and recovered ½c. Here futures have remained stationary, while spot wheat is quiet but rather firm with light offering. There have been no clearances nor charters and no ships are now on the engaged list. One cargo of barley has gone to Japan and two more are to follow, rates being $4@4.50 per ton freight. Kansas barley is going to Japan via the northern ports. Local barley prices are firm, and minor grains are also firm and in light receipt. Beans are mostly bought up and are being boomed by owners, with Limas leading in the advance. Bran and middlings are quiet, unchanged and easier in tone, as there is so much green feed. Hay is no better. Hogs are higher—all other meats steady at former prices. Butter is firm, with light supply and quick shipping demand, which is hunting medium grades, so that the lower prices are relatively stiffer than the higher. Cheese is firm, and also in light supply, with a sharp shipping demand for northern points to take the place of Eastern cheese, which is too high at its own centers to move out freely. Eggs have been smashed down, but storing has begun and values are likely to improve from the present low mark. There is a heavier supply of Eastern poultry, but young home-grown stock sells well, while common old birds are easier. Choice potatoes are firm; common are neglected. Onions are higher and in fair demand. Apples have a better tone; receipts are lighter and choice to fancy bring good prices. Oranges are cleaning up better with lighter receipts, improved inquiry and freer consumption. Lemons are unchanged, but in better demand. Limes are in fair supply and a little lower. Dried fruit is still moving out; an Australian steamer took 78,000 pounds, more than half of it prunes. Nuts are quiet. Honey is unchanged; 200 cases have gone to Germany. Hops are quiet and rather easy, 100 bales going to Sydney. Wool is still largely nominal here for lack of stock to trade with. The general situation is strong and helped a little by the burning of 8000 bales of Australian wool at a fire in Boston There is no wool to burn nowadays.

Speaking of hot wool perhaps cold lamb will be a relief. It is interesting to read in a consular report from Melbourne that the export of lambs in a frozen condition is now one of the promising industries of the State of Victoria. For two years past exporters have been clamoring for lambs, not only for London, but for Africa, the Philippine Islands, the East, and Mediterranean ports. The prices offered have tempted farmers to breed lambs especially for export, and they are devoting more care to selection of breeds to meet export meat purposes as well as wool requirements. The Shropshire breed for export is increasing year by year. Shropshire lambs are considered suitable and profitable for export, their carcasses being plump and fleshy, with thick legs and shoulders, well covered with fat, which, however, is not laid on in excess. This season prices have run about as follows: Merino–Lincoln cross, $3.40; Merino–Shropshire cross, $3.89; Shropshires (only a small quantity offering, $4.86. The number of lambs exported during the month of November, 1904, exceeds that of any month in any previous year.

Mr. John Isaac, clerk of the State Commissioner of Horticulture, is going to Mexico to study the Morelos orange maggot. It belongs to the well-known family of fruit flies which are creating such havoc in the apple orchards of Australia. Since its first appearance in Morelos, a few years ago, it has spread all through the orange growing sections of Mexico and is now destroying oranges in Sonora and Chihuahua right up to the boundaries of the United States. It must be kept out of California.

The Legislature proposes to build up the State Fair without horse racing, and so the Ways and Means Committee cut the proposed appropriation down to $60,000, and particularly specified what buildings are to be built with the money. The provisions, therefore, for constructing stalls for trotting and running horses, for a 1-mile trotting track and fence, grand stand, with lower floor for various purposes, are all stricken from the bill. This practically prohibits racing in the new park for two years, all the money being particularly appropriated for constructing exhibition buildings for agricultural products and live stock, and none being allowed for racing paraphernalia. It seems to us that this is going a little too far, for a speed contest without gambling attachments is almost necessary to a show of horses, but it is well enough to try it without. There is no fear of the race being lost in the long run. It can be trusted to get itself in in some way—so long as the passions of men remain unchanged. The directors of the society are satisfied to try the new way.

Good for the new Missouri Congressman! Chosen from the rural common people and undertaking Congressional life with no income beyond that the Government provides, he has spoken from out his honest heart words which will ring throughout the country as a protest against extravagance and display beyond one's means. They were showing him the sights at Washington, and finally reaching a hat store some one said, "Come, let's buy silk hats for the inauguration day." "Me buy a silk hat while my wife's at home making soap? Not much." Good again say we for the Missouri Congressman with a conscience and a sense of the eternal fitness of things. Let it serve as a most potent exhortation against vain show which brings greater hardships to self-sacrificing wives and husbands. Let the idea expand until it embraces the expenditures of municipalities and States! Let it check any vain glory which the American Government may be tempted to indulge in at the cost of the hard working people who produce the wealth! Good for the Missouri farm wife who boils the soap! May her husband at Washington ever remain as sweet and clean in his thought as the product of her self-sacrificing services!

QUERIES AND REPLIES.

Temperature of Irrigation Water.

To the Editor:—There is an impression here that it is harmful to plants to irrigate with cold water direct from deep wells, but that if it is allowed to stand in a reservoir for an hour or so no harm is done. Do you concur with the above view, and if so, why? We know that the theory of having to water hothouse plants with water of the same temperature as the house has been exploded. Does the aeration of the water or the action of the sun affect the water in any way chemically?—Fruit Grower, New Mexico.

It is found by experience to be undesirable to apply water at too low a temperature to growing plants, and that when water with a temperature below 60° is applied in large quantities there is something of a shock produced which results unfavorably. Of course, the worst effects are produced by very low temperatures in the water, and there may be small differences which would not produce any effect. It is a matter of temperature, however, and not of aeration, and the action of the sun upon the water for a short period is merely in raising the temperature and not in producing any chemical effect. This raising of temperature is what is in view when you are advised to let the water stand in the reservoir for a time. If you irrigate in furrows, however, allowing the water to run in small streams, it is altogether probable that it will be sufficiently warmed by contact with the ground, so that no ill effects are produced. Of course, all of this applies to the application of water during the growing season, and the more active the growth the greater the danger. During the dormant period of trees and plants water can be applied at any low temperature without injury.

Grafting on Black Walnut.

To the Editor:—I have been told that in your State growers of the English walnut have succeeded in grafting it on to the black walnut. I made a trial last year, but without success. Can you furnish me information? I can get scions from a tree thirty or more years old. Last year I took scions at grafting time from water sprouts, and also from the previous year's growth at end of fruiting limbs; the latter soon dried, while those from water sprouts remained green for a long time.—Enquirer, Ogden, Utah.

The English walnut is quite successful when grafted upon California black walnut, but we have not done much with grafting the English walnut upon the Eastern black walnut, which is probably the species that you have. Our California black walnut is somewhat different from the Eastern, still there are cases in which the English walnut has been successfully put upon the Eastern black walnut. Walnut grafting is, however, somewhat more difficult than grafting ordinary fruit trees. It is better to work in branches not more than 1½ or 2 inches in diameter; not to split through the center, but rather

to one side of the central pith, and then be extra careful with the waxing. It is a good deal better to work in good matured branches than in water sprouts and to take well matured scions rather than suckers, although probably there was so much sap flowing in the water sprouts that they maintained life longer, without, however, making satisfactory contact, and therefore failing to grow. You will have to experiment considerably perhaps with this matter, putting in scions in different ways, being encouraged by the fact that the operation is practicable and that free bearing and profitable trees are secured.

The "Baldwin Spot."

To the Editor:—I send specimens of a diseased apple, the cure of which we have been unable to determine and would like some advice how to combat the disease. The trouble is prevalent entirely in the Baldwin variety, but it seems as if it will only be a question of time when the entire orchard will be affected. All the orchards in this locality are in the same way with the Baldwin, and there is no doubt that a great many of the trees will be grafted over this spring to other varieties. Last fall in our orchard we took special pains to separate the supposed diseased from the ones we were sure could not be affected. All the fruit that had the slightest looks of disease we carefully separated and used them for culls. The ones we supposed were good we packed and put away for about a month. The apples were very fine, and we supposed in a short time we would sell them and gain additional trade by their looks and eating qualities, but in a month's time we found that a great many of them were spoiled, and we had to sell the remainder hurriedly and guarantee against loss within a reasonable length of time. The larger ones are the ones generally affected, perhaps we might say two-thirds so. At present the Baldwin is the only apple which shows the trouble.—Grower, Los Angeles county.

The trouble which you have encountered is one which exists throughout the whole country, and has been named at the East the "Baldwin Spot." It is a disease the cause of which has not been fully demonstrated, although many conjectures have been indulged in. There is a wasting and discoloration of the tissues under the skin, and the skin sinking causes pits or spots, hence the name; and as the Baldwin apple suffers worst it has been attached to that variety. The Baldwin is also subject to core rot in storage, the cause of which also has not fully been made out. In fact, it seems as though the variety must be abandoned, or, at least, something else substituted for it which is not subject to these troubles. So long as the cause of the damage is not known no treatment can be rationally described.

Bacteria for Beans.

To the Editor:—I am now breaking a piece of land that has been in pasture for a long time. I think it was plowed some ten years ago, and then only part of it was plowed. The character of the soil is mostly sediment. I wish to sow this land to seed beans, and being new land I am afraid they will not do well the first year. Would you advise the use of nitro-cultures? I have read that the yields are increased greatly by the use of them. If you advise their use how could I obtain a quantity of these cultures and develop same so that when sowing time comes I will have plenty of cultures of my own?—Planter, Santa Clara county.

No one can decide in advance of actual trial whether the land which you wish to use for beans already has the bacteria which are effective towards securing maximum growth of these plants. Judging from our own observation you would get a good growth under the conditions, but whether you would do even a little better by the introduction of the bacteria only a trial can determine. For this purpose write directly to Dr. George T. Moore, Bureau of Plant Introduction, Department of Agriculture, Washington, D. C., asking him for a sample of bean bacteria for trial, and asking him also to send you his interesting publication on the relations of these bacteria to the growth of legumes. We would like very much at the close of the season to know the results of your experiments and how the inoculated portion compares with some distant parts of the field.

Walnuts and Almonds.

To the Editor:—Which do you recommend, walnuts grafted on black walnut roots or on their own, and why? What variety would you recommend for this locality—near San Jose? Where can good, reliable nuts be procured for seed? Is it too late to plant? Where can almonds be procured for seed, and what varieties would you recommend for this place? Is it necessary to have more than one kind? Can nuts be grown profitably in this section?—New Comer, Sunnyvale.

English walnuts grafted on the California black walnut root are rather more likely to succeed under both extremes of drouth and saturation than when on their own roots, because the black walnut is hardier against all kinds of adversity in the soil. The French variety "Franquette" is one of the best in your region. The Santa Rosa soft shell is now being largely planted also. You can usually get nuts kept in good shape for sprouting from seedsmen and nurserymen. It is not too late to plant if you can find good seed. The same is true of almonds. It is desirable to have several varieties associated in planting. Both walnuts and almonds will succeed in good places; the almond is rather more exacting than the walnut, perhaps because of extreme liability to frost.

Asparagus Growing.

To the Editor:—Can asparagus be grown profitably in this part of the valley, and will the rust affect it? One or two newspaper cuttings I have say that the bottoms of the trenches in which the roots are planted should be filled with manure. Can the commercial grower get enough manure for the purpose, or does he use something else? Also, which are the kinds mostly grown?—Subscriber, Dinuba.

The accounts which you have seen relate to garden culture, especially on shallow soils too heavy naturally and too much worn by other cropping to allow the root and shoot penetration and to furnish the rich food which the plant requires. On the coast and river lands where the commercial crop is grown the soil is naturally very light and loose and amply supplied with decaying vegetation, so that manuring is not required, either for its mechanical or nutritive effects. Therefore there has been no rush for manure except as a top dressing on the older fields. You can doubtless grow good garden asparagus, but it is doubtful if you could do anything profitable on a large commercial scale. You would probably have less rust than the coast and river situations, but you could not count upon immunity from it.

Onion Growing.

To the Editor:—As I am thinking of putting in several acres of onions I would like light on the following: Is it wise to roll and break the tops of onions in order to force nutriment into bulb instead of allowing it to go into the top? Would evil effects occur if potash were sprinkled in the row when seeds were drilled?—Grower, Riverside county.

It is not desirable to roll the onion plot for the purpose which you mention. In very light soils it may be desirable, sometimes, for the purpose of compacting the soil and bringing the moisture nearer to the surface, but the size of the bulb is conditioned upon the activity of the top growth during the early part of the growing season. The ripening process, however, may be promoted by suppressing the top growth in the method which you describe, but it is not usual to resort to it. The application of potash in the row is only evil when it is used in too large amounts. A sufficiently small amount mixed in the soil by the drill may produce good results.

Use of Gypsum.

To the Editor:—In what way does gypsum increase the growth of plants? Does it force or stimulate the elements to increased activity, or does the application of gypsum add some needed chemical or chemicals to the soil?—C. E. D., Kingsburg.

Gypsum under certain conditions may act as a plant food if lime is short in the soil, but this seldom occurs. It does, however, sometimes act upon other substances in the soil and advance growth by rendering them more available, and it may act in other ways mechanically to advantage the plant. Gypsum is, however, not a plant food as other fertilizers are, and its profitable use depends upon conditions somewhat complex.

Probably Leaf Lice.

To the Editor:—Enclosed find two pieces of peach twigs. The bark, as you notice, is unusually black What is the trouble?—C. E. D., Kingsburg.

The black deposit seems be smut following the honey dew dropped by scale insects or leaf lice. As the twigs do not show scale it seems likely that you had a visitation of leaf lice last summer or autumn. Look out for such things frequently next summer.

The Phenomenal Berry.

To the Editor:—Will the Phenomenal berry be likely to do well in this climate which requires protection for all cane fruits from our drying winter winds?—Fruit Grower, Boulder, Colo.

Nothing except actual experiment would demonstrate the suitability for the Phenomenal berry for your climatic conditions. It is proving very useful in California and the planting is now continually extending, and it is desirable for you to make trial of a few roots. It has a trailing growth, and for this reason could be easily protected from your drying winter winds, for it would be dormant at that season, and could be easily laid down and covered if necessary.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending February 27, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Clear, cold weather prevailed most of the week and conditions were very favorable for crops of all kinds. Wheat, oats, barley, alfalfa and grass made rapid growth, and show but little injury from the recent cold weather. The late sown grain made great improvement and looks strong and healthy. The outlook for large crops of grain and hay was never better. A large acreage of grain has been planted and work is still progressing. Green feed is plentiful and stock are in good condition. Work in hop fields will soon commence. Many varieties of deciduous fruits are in full bloom and present prospects are good for large yields. The cultivation of vineyards and orchards is progressing rapidly.

Coast and Bay Sections.

The weather was generally clear and warm during the week, with fog in the coast districts and light showers on the northwest coast. Conditions were very favorable for farm work and the growth of all crops. Grain and hay are in excellent condition in all sections and the prospect is good for unusually large crops. The grain acreage in many places is much larger than last season's and seeding is still in progress. The recent cold weather caused very little injury to grain and grass. Green feed was never so abundant and stock are in prime condition. Almonds, apricots and peaches are in bloom and other deciduous fruits are advancing rapidly. Fruit prospects are the best for several years.

San Joaquin Valley.

Clear and warm weather prevailed during the past week. These conditions caused a very rapid development of fruit buds, and growth of grass and grain. Plowing and seeding continue in some localities, and grain is in excellent condition in all sections. Plowing and cultivating orchards and vineyards are progressing rapidly. Almonds, peaches, apricots and plums are in bloom; in some localities the almonds are past the full bloom. Fruit trees have blossomed much earlier than usual this season and some growers fear damage from probable late frosts. Green feed is plentiful in all sections and stock are healthy and in good condition. Early garden truck is well advanced.

Southern California.

Warm and partly cloudy weather prevailed most of the week, and heavy rain fell in the extreme southern and eastern sections, causing some damage to roads and bridges. The observer at San Diego reports that the recent "rains did more to increase the flow of small streams and rivers than any series of storms during the past decade. All reservoirs received considerable water, and enough has already been impounded to insure ample supply for the coming season." Grain and grass continue in excellent condition and are growing rapidly. Pasturage is abundant and stock are doing well. Melon planting is in progress in the Coachella valley. Oranges, lemons and deciduous fruits are in good condition.

Eureka Summary.—The weather was warm and favorable for grass, grain and vegetables. Fruit trees are budding. Prospects are good for large crops of cherries, prunes and apples. Very little snow on high mountains; something unusual at this time of the year.

Los Angeles Summary.—Warm, summer-like weather caused all crops to make fine growth. Orange trees are starting new growth and lemons are in bloom. Almonds are in full bloom. Very ripe oranges are dropping in some places.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, February 28, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.09	23.12	40 58	32 61	66	42
Red Bluff	.00	25.35	20.25	19.34	80	44
Sacramento	.00	14.74	10 39	14.15	78	44
San Francisco	.00	16 92	12.99	17.19	72	40
Fresno	.00	8 03	3 96	6.19	78	44
Independence	.00	1 68	1.62	3 15	70	38
San Luis Obispo	.00	16.33	8 69	15.13	80	46
Los Angeles	T	12 15	3 25	12 02	80	50
San Diego	.03	10 68	1.96	5.94	78	54
Yuma	1.18	5 39	0.66	2 54	80	52

THE POULTRY YARD.

Points and Suggestions.

To the Editor:—Whatever progress is making in the poultry industry in Eastern States, it must be conceded that there is rapidly growing a deep interest in the business in California. This is indicated by a larger demand for poultry farms, here and there, but more especially coming under the notice of the writer in the so-called "Bay counties." Doubtless this increased demand is noticed in all portions of the State, but the person who intends to make a business of poultry raising, in order to make it the more profitable, must needs locate his plant at some point not too far distant from prominent market centers.

Transportation enters largely into the problem, for if the cost of sending eggs and poultry to market is excessive the returnable profits are generally small. The best located points are those possessing both water and rail transportation facilities. There are not a few such places within a comparatively short distance of San Francisco.

In the choice of location there also enters the question of land values. It is very clear to any one having experience in the poultry business, be it ever so little, that low adobe or clayey soils are to be avoided for the good reason that they are very poorly drained. The best spots are those having a porous subsoil and preferably of a rolling surface.

It makes much difference whether one pays $100 or $.00 per acre for land, other things being equal, or only $50, $60 or $70 per acre. Yet the higher prices are paid in localities which have attained a reputation for profitable poultry farming. If the business is a success in such places—and a grand success it has proved to be—it surely ought to prove equally, if not more, remunerative in well favored localities where land values are not as high.

There are other items that one choosing a location for poultry raising, be it large or small, should take into consideration. There are many new comers in this State who are investigating this business from all sides before they finally purchase. These persons are spying out the land in our several counties, especially in those located within a radius of 50 or 60 miles of San Francisco, some of whom come from Eastern States, some from European countries. All this plainly indicates that the poultry business of the State is enlarging. It takes no very wise prophet to foretell that this profitable industry is destined to attain very large proportions within the borders of the Golden State.

Within a few weeks the writer was privileged to converse, at some length, with a highly educated, well-to-do gentleman from Germany who was here seeking a location for a poultry plant. The place of his choice would also become the residence of others of his countrymen this spring, all interested in egg farming, in which pursuit they have had practical experience in the Fatherland.

In a recent number of a very excellent poultry journal published in New England, a reader asks the editor about the advantage California offers the poultryman. These are but two of many instances, going to show that the attention of persons scattered far and wide is being directed "hitherward." Let them come. This State is large enough for all who are liable to locate here, and when the local supply of poultry and eggs equals the demand poultry raising will no more concern the numerous readers of the Pacific Rural Press.

A neighbor of the writer who has a fine flock of 700 or 800 hens, from which he derives a handsome income, experimented last summer in the matter of forcing his fowls to moult at his will. The plan pursued was so successful that it will again be put in operation.

All the details were simple and inexpensive. The fowls were confined in close quarters for two or three weeks. Their only ration was green alfalfa and all the water they craved. Soon the feathers commenced to drop freely and the fowls were in the heavy moult. Then, at the expiration of the time named, the fowls were freely fed with appetizing food and before long they commenced to lay in a manner very gratifying to the owner.

Of course this is no new plan, for it has been practiced for some time by several poultrymen in the East. Not every one cares to pursue this method, but with large flocks where in these progressive times every detail of their management is reduced to a science it may generally be well to adopt the forced moult.

"I shall never again keep over my two-year-old hens," writes a poultry raiser of considerable experience. He finds that his young birds lay the most eggs and are the most profitable. But this fact has been demonstrated by one or more experimental stations, notably that of Utah. Still it must be borne in mind that it will not always do to "go back on" the two-year-old hens. We cannot afford to do so if we wish to keep up the breeding standard of our flocks. It is an unsettled question with many a person as to when they shall sell their hens. Some individual hens have laid wonderfully well when even upwards of three years old. One must study the individual characteristics of his fowls.

As a rule, poultry buildings in California are cheaply constructed. Not that there are not many finely built houses here, but the climatic conditions of our wonderful State are such that one can profitably house his fowls in inexpensive buildings. There is food for thought in the following extract from an Eastern periodical devoted to poultry affairs:

"I think it is always a mistake to build an expensive poultry house, or to build so substantially that the house will last a lifetime. Most important of the things I did when recently constructing a house was placing it right on the ground without stone foundation or posts for underpinning. I feel free to confess that the only consideration I gave the matter at the time was that the sills would last till the house was moved, and it would be cheaper to put in new sills than to take at first the precautions necessary to preserve the original sills.

"Within a year from that time I was visiting one of the largest poultry plants in the country, a plant that had been in operation about a dozen years. The old buildings were then being gradually replaced by new ones, and, somewhat to my surprise, these substantial buildings were placed right on the ground, just as my temporary one had been built. The proprietor said: 'We don't want our buildings to last more than ten or twelve years. We consider it cheaper and more satisfactory to rebuild our plant entirely over in that period than to tie up money in more substantial buildings, when perhaps within a few years changes in the business or improvements in methods will make our present buildings unsatisfactory, and we can replace our sills several times for less than the cost of putting our buildings on stone, or elevating them enough to keep the sills from rotting.'

"There is a good deal in that. It is a point that is worth serious consideration, especially in view of the general disposition of those embarking in the poultry business to put the bulk of their capital into permanent buildings and somewhat expensive fixtures, leaving little for stock and for necessary working capital." A. Warren Robinson.

Napa.

Secrets of Success With Poultry.

Mrs. Helene Hough of California gives the Orange Judd Farmer the following teachings of experience: Fowls should be given a warm, tight, dry house, both in winter and summer. Keep the same thoroughly whitewashed inside and out and keep the laying room cool in summer. Warm houses keep the hens laying in winter when eggs are high and a cool room in summer for laying will do the same when eggs are wanted for hatching. Have a large room or shed for the dust bath, that is dry in winter. This with regular feeding keeps them healthy and free from vermin and less liable to take disease.

Give good, plain food, such as bran, shorts, wheat, oats, barley and corn, and for green feed, cabbage, onions, turnips and other vegetables. The food they eat affects the quality of the eggs as well as the number, also the size of the chickens.

Keep clean water in clean vessels always before them. It must be kept cool by frequent changing and in summer place the troughs in the shade. Provide a good shed for scratching, and place in it hay, which contains plenty of heads of wheat, oats and barley, also some ears of corn. Let the fowls thresh their own grain, not merely scratch over some old leaves for a few kernels. Provide also large, flat boxes filled with gravel, bone meal, oyster shells, lime, old plaster and broken bits of crockery.

If the foregoing is provided, and the fowls allowed plenty of exercise, you will have a healthy, flock of fowls, and should be able to go out with your basket and gather up the eggs until the basket overflows. If the nests are frequently cleaned and eggs kept clean, they will be sought for by tradesmen and you will obtain better prices than those who follow the old slipshod way of carrying dirty, stale eggs to market.

A Wonderful Hen From Maine.

After five years of careful breeding for egg production, regardless of all other accomplishments, Professor G. M. Gowell, agricultural expert at the University of Maine, has succeeded in obtaining more than forty hens that have yielded more than 200 eggs apiece in a year and has produced one hen which has laid 251 eggs within twelve months, thus beating all previous reported records in egg yield.

This hen, known to the records as No. 617, is a small Plymouth Rock of pure strain, though not shaped according to the standard type. She is not only under the size demanded for perfect specimens of the breed, but her wing barring is imperfect and her neck is too slim for her body.

In spite of her defects, as viewed from the standpoint of the fancier, she is in actual performance the most valuable hen in the world, being capable, under average Maine conditions, of returning to her owner a net profit of 170% a year.

The figures which have been passed upon and approved by expert book-keepers, are deducted from counting the average cost of food and subtracting the total expense of subsistence from the income derived from eggs at the average price paid in Maine, which is 18 cents a dozen

Professor Gowell has devoted himself almost exclusively to breeding hens for a specific purpose for the last five years. Beginning with 1000 hens divided into flocks of about twenty hens and two cockerels to a pen, he has employed trap nests and been able to get at the exact performance of every hen.

The first year the best record was 220 eggs, laid by a Plymouth Rock pullet. There were eleven other Plymouth Rock hens that exceeded 200 eggs the first year, though of the White Wyandottes only three reached the 200 egg class.

The next season the most prolific hens in their respective classes were put in pens together, and eggs saved from these were kept for hatching. Again the Plymouth Rocks outstripped the Wyandottes in egg yield by great majorities, so from that time on until the end no further attention was paid to the Wyandottes.

Having hatched male and female chickens from the eggs of his hens of great ability to lay eggs, Professor Gowell mated the selected stock and waited for results. At the end of the fourth year he had produced twenty-six hens that had laid more than 200 eggs each in a year, and one hen that beat all previous records, by laying 238 eggs. Again making his selection of breeding stock from the most prolific in his pens, and mating hens to cockerels of the same strain, he at last produced the most prolific hen in the world, No. 617.

THE GARDEN.

Growing Tomatoes for Canning.

Mr. J. Luther Bowers, now of Monticello, Napa county, writes interestingly for the San Jose Mercury concerning his experience with tomatoes.

Tomato growing has become quite an industry, and many new growers are entering the field, and to such I would give a little friendly advice. Do not sow the plants too early. First find out when your buyer is going to start his cannery, and about a hundred days prior to that time, more or less—three or four days either way—sow your seed.

Sowing the Seed.—I always sow my seed thickly in rows in a newly made hotbed, and when the plants are beginning to make the first leaves I transplant them into shallow boxes, 24x24 inches and 3 inches deep and holding a hundred plants.

The plants are set in straight rows, ten each way. These plants can now be put into frames, 6x16 feet, ten or twenty boxes to each bed, and almost enough plants for three acres planted 7 feet each way. The frames for these twenty-four boxes I make out of two 10-inch boards for the front and three 10-inch boards for the back, making a fall of 10 inches in 6 feet. This will drain off the water when it rains. For a covering I use cotton cloth about the thickness and texture of sugar-sack lining. The goods I cut 6½ feet long and sew together so the seams run across the bed, and, when the cover is made, one side is tacked to the high side of the frame and the other side is tacked to a 1x4 strip of wood. This makes a roller to roll up the cover.

If this cover is taken care of it will last for three seasons. With this frame I do not use any bottom heat. I do not have such tall plants, but have them stocky and hard. When the small plants have been in the boxes about two weeks, a sharp knife can be drawn between each row each way. This will leave a small square of earth to each plant.

Preparing the Soil.—Now I will leave the plants and talk of the soil. Any deep soil makes good tomato ground, no matter whether clay, sand or adobe. I have just as good success with one as with the others. The ground should be plowed deep and as early as possible and well worked; and, just before setting out the plants, plowed again and made as fine as possible, and then checked off each way 7 feet. Plants should never be set until all danger of frosts are past, or not until April 20 in Santa Clara valley. A plant once chilled by frost will not recover until late in the fall. I have seen plants set and a frost of 28° seem not to hurt them, and yet not produce fruit until late in the summer.

Setting the Plants.—When everything is ready for the plant setting, give the plants all the water the earth in the boxes will take, haul them to the field and set with three men—one man with shovel and one man to each row of two rows. The man with shovel takes out a shovel of dirt at the check, then the man with plant sets it; the other man is getting his plant ready. In this way three men are setting two rows, and should set in ten hours three acres, or about 2664 plants.

If there is moisture in the ground, every plant will live; if no moisture, a quart of water should be poured on each plant when set and earth drawn over the wet ground; or, if one has running water, a furrow could be run by each row of plants, but only

enough to wet the roots should be used, and they should be cultivated as soon as dry enough.

The Use of Water.—If a tomato plant once stands up, no matter how dry, it will live, and under no circumstances would I think of putting on water in any way, shape or form until after the first tomatoes ripen; then water can be used, and, if water is to be used at this stage, a furrow should be run some 18 inches from the row when last cultivating is done. I have never irrigated my tomatoes and they have been the wonder of the neighborhood for size and productiveness. Always remember: Lots of water, lots of vines; no water, lots of fruit. I generally have the first tomatoes and the last tomatoes in my neighborhood—often six months in the year.

Plant What Canners Want.—I would here say, no matter what you think, plant only the varieties your canner wants. A grower's idea and a canner's idea do not always agree as to the best canning tomato. Try to please the canner if you can. I grow three varieties myself—Success, Matchless and California Canning—the first two large and smooth, the last very large and sometimes very rough, but the best-flavored tomato in cultivation and the most productive. Very few canners want or use a rough tomato. The Stone tomato is planted more extensively than any other for canning purposes, but my experience is that it is a very shy bearer—or I did not get the Stone seed. The Success and Matchless are both as smooth and a great deal larger and certainly more productive.

THE APIARY.

How Much Alfalfa to a Bee?

Mr. George J. Smith of Fort Lupton, Colo., writes for Gleanings about how many bees a certain area of alfalfa will carry, in answer to this question: "How many acres of honey plant are necessary to take care of 100 colonies of bees?" This being an alfalfa district, I thought it would perhaps interest my fellow bee keepers to state my experience this summer, as the above question has often put me to thinking regarding pasturage.

In partnership with my brother we had 79 colonies, spring count. The season was at least three or four weeks late, having cold nights accompanied with drizzling rains at intervals throughout May until the middle of June. By this time the alfalfa was starting to bloom, "scattering." There were very few stores in the hives, no brood rearing to speak of, as we have no blossoms to mention until alfalfa comes on. On the 26th of June we had two swarms come out, which we had to feed for a few days on account of a cold rain. After then we had fine weather, and the bees went to work with a will on the thousands of acres of alfalfa surrounding us, which had a purple cast by this time. By the middle of July all the alfalfa was cut, except a little around ditches, etc., our own fields included, and everything seemed to be at a standstill in the apairy. Up to this time we had hived forty-eight swarms, making a total of 128 colonies. There being very little sweet clover in bloom, we decided that the only surplus honey we should get would be gathered on our own farm; and having thirty acres or more of alfalfa we knew we could control that amount of pasture, as other fields are generally cut when coming in bloom, making better hay. When the first cutting of alfalfa was all done, we had only 19 colonies working in the supers. On the 5th of August we were putting on another round of supers, honey coming in galore. That 30-acre field was a sight to behold! From morning till night it was a constant uproar. We stood there many times and listened to the buzz overhead as they passed to and fro, it doing us more good to know that they had at last struck a land of plenty, and we the satisfaction of knowing that we can control to a certain extent our own pasture. That alone amounts to us more than the loss in hay.

Though only a novice of a few years' experience in bee keeping, my idea of success in that line, "to be master of the situation," is to control as much as possible our own pasture, and not depend on our neighbors being delayed in cutting their fields of bloom. We are not so fortunate as some bee keepers where nature provides with plenty of moisture and a constant honey flow throughout the season. A scarcity of water for irrigation means a scant honey crop; therefore, profiting by this year's experience with alfalfa, we will try next year to regulate the bloom so as to have a paradise for the bees throughout the season.

I am satisfied that 1000 acres of honey plant is not necessary to take care of 100 colonies of bees. We had 50 colonies that made from three to six supers, while the others fell below three supers.

A freak of nature that attracts much attention among those engaged in the fruit industry in Santa Cruz county is a plum tree on Bellevue place, which at present bears a crop of ripe fruit ready for picking. The tree bloomed during the hot spell when the forest fires were raging during September.

THE VETERINARIAN.

A Review of the Texas Fever Situation.

The following, by Dr. D. E. Salmon, Chief of the Bureau of Animal Industry of the U. S. Department of Agriculture, tells the history of Texas fever and contains points of great interest to stockmen:

As far back as 1798, at least, Texas fever is known to have existed among the cattle of the South. In that year, shortly after a herd had been driven from South Carolina to Pennsylvania, the local cattle were attacked by a destructive disease. The matter was carefully studied by Dr. Mease, who traced the infection to the herd brought from the South, although these cattle were themselves apparently in good health. Similar observations were made at various times for years, but no efforts were instituted by the Government to mitigate the ravages of the disease until 1868.

At that time thousands of cattle brought to the East for beef arrived either dead or so badly diseased as to be unfit for use. Enormous losses also were occasioned among the cattle of Illinois and Indiana by infection brought by Southern cattle shipped up the Mississippi river to Cairo and thence into the interior. These facts led to action on the part of the Commissioner of Agriculture, Hon. Horace Capron, who employed Dr. John Gamgee, an English veterinarian, then visiting this country, to study the disease. Dr. Gamgee went to Abilene, Kan., where the malady was causing the loss of great numbers of cattle. The theory of that day was that the cause of the disease should be sought in the cryptogamic plants, and accordingly a botanist was sent along with Dr. Gamgee. These men made an investigation at Abilene, the results of which were embodied in a report transmitted to Congress, published by that body and afterward republished.

In 1883 the present Chief of the Bureau of Animal Industry of the U. S. Department of Agriculture, with the aid of assistants, ran the northern line of the Texas fever district through Virginia. The bureau was created during the next year, and one of its first and most important duties was to extend this line westward. In 1884 the line reached the Mississippi river, and during 1885 the Rio Grande in Texas. From that time until the present this Texas fever line, constantly modified as sections to the north or south of it became free from the disease or infected with it, has been rigidly maintained by the bureau; and this, with the enforcement of laws supervising the transportation of all Southern cattle to the North, and absolutely preventing the driving of such cattle from infected to non-infected sections, except during certain winter months, has had a most beneficial effect.

These measures, while decreasing the losses occasioned by this disease, were not in all respects satisfactory, as they necessarily hampered the movement of cattle to the North. The real cause of the disease was as yet not known. Little was done toward solving the problem until 1889, when the bureau took up the matter, and in a series of experiments discovered that in the red corpuscles of the blood of infected animals there existed a peculiar microscopic organism, which was at once suspected to be the true cause of the trouble. It had already been found that in some manner the cattle tick was necessary for the transmission of the disease, and in the fall of 1890 the experiment was tried of placing on healthy cattle young ticks artificially hatched. In these cattle there immediately ensued an extensive loss of red blood corpuscles, accompanied by fever. This experiment established both the specific cause of the disease, namely, the microscopic organism which lives within and preys upon the red blood corpuscles, as well as the mode of infection—that is, through the medium of the cattle tick.

The next step was to discover some means of destroying the ticks. The most expeditious and convenient way of ridding infected animals of the ticks would, of course, be by an application of some fluid mixture in which the animals might be entirely submerged so that all parts of the exterior of the body might be reached. Experiments accordingly have been in progress for years to find such a mixture—a mixture in which cattle may be dipped without injury to them and which will kill the troublesome ticks. One of the most promising things yet found is the Beaumont oil of Texas, which is known in the trade as "Texas crude." Many experiments have been made both in Texas and at the experiment station of the bureau in Washington, and the results have been satisfactory. It has been found that the lighter kinds of oil from the Beaumont district are the better adapted for the purpose, as the thicker oils are injurious to the cattle. The best results are obtained with oil of a specific gravity of 22½° to 24½° Baume, and containing from 1¼% to 1½% of sulphur; 40% of the oil should boil at from 200° to 300° C. Tick-infested cattle dipped in oil of this description have been found to be rid of ticks within a few days, and have suffered no injury.

THE DAIRY.

The Goat Dairy.

From a paper by Dr. J. H Hester at the University Farmers' Institute at Santa Barbara.

No doubt many of you have made up your minds that a paper on milch goats for this institute must surely be intended as a sort of a joke, or even if the writer might be in earnest such a subject could interest only a very few of those present.

For I am well aware of the strong prejudice that prevails in this country against the goat or any of its products for food. I have many times been amused at the look of surprise and almost disgust on the face of the mother when I have recommended goat's milk for the babe.

The butchers also are so well aware of the prejudice of their patrons against goats, that unless you have better success than I have had you will scarcely be able to find out when they have goat meat for sale.

They do not hesitate to buy them if they are in proper condition, and as one of them informed me do not hesitate in filling the order of their most particular customers for mutton with a choice cut from a nice young goat, as it will almost invariably bring a return order for more of that nice lamb, while if it had been offered under the true label it would have gone a begging for a trial.

Importance of the Goat.—My reason for selecting this seemingly unimportant subject was the hope that I might be able to interest you enough to cause you to investigate the merits of this valuable little dairy animal. For I believe it could be made to form an important branch of our live stock industry and would very materially aid in the solution of that vexed problem "The providing of a suitable food for infants and invalids with weak digestive organs." Milch goats occupy a prominent position in the live stock industry of Europe.

Prof. Thompson says, "German writers say boldly that the milch goat in its later development has done great service to the State, in that it supplies a want which before caused great unrest among the peasantry. In England milch goats are gaining more and more in number and popularity each year.

The Standard Goat Company which was organized the past season in Washington, D. C., with a board of directors is composed of two prominent physicians, one of whom is dean of the medical department of the Columbian University, one prominent member of the Washington bar, and one of our leading veterinarians. The announcement states that the organization is for the purpose of importing thoroughbred milch goats of Europe and Asia into America, and exploiting the use of goats' milk for infants and invalids; that it is also to obviate the exorbitant cost of importing small numbers of goats and to formulate some safe and tangible plan by which the breeders of standard goat stock of America can establish a herd sufficiently large to supply themselves with breeding stock at a fair and reasonable cost.

This unusual activity during the past season was no doubt due to the modification of our quarantine laws which previously had prohibited the importation of such stock from any of those countries where the milch goat had been brought to its greatest perfection.

Already an importation consisting of representatives of two of the best Swiss breeds has been made and are reported as doing well in their new home.

Goats May be Better Than Cows.—There are conditions where the goat might be utilized for the production of milk to a much better advantage than the cow.

The first cost of the goat, together with the difference in the expense for keeping, makes it available to a great many families who could not afford a cow. It is claimed that eight goats may be kept for what it would cost to keep one cow. The goat utilizes its food better than the cow, and gives considerably more milk in proportion to its body weight. In case of a dry year you can take advantage of the goat's strong preference for the leaves and twigs of bushes, and transfer them to some brushy pasture where they will thrive even better than on good feed.

The advantage of this characteristic in the goat was impressively demonstrated in the early part of last winter, when it looked as if we were in for another dry season, and almost every cattle owner was puzzling his brain to decide whether or not it was worth while to try to carry his cattle through another drouth, by a band of goats that fed upon the brush covering the hills back of Carpenteria. A farmer called my attention to them, saying "There is the kind of stock to keep; it will make no difference with them whether it rains or not."

Another important feature to be considered in favor of the milch goat is the remarkable immunity from tuberculosis which they seem to enjoy. Prof. Law, one of our best American authorities, says "Sheep and goats kept under natural conditions show a remarkable immunity from tuberculosis." Among the European authorities Hood is quoted as saying "Undoubtedly the most important of all the qualities of goat's milk, especially in its relation to

the feeding of infants, is its immunity from the danger of carrying the germs of tubercular disease."

Goat Milk.—As for the quality of goats' milk Prof. Thompson says "The quality of goats' milk is far superior to cows' milk for all purposes. As a food for the invalid the milk of the goat is almost universally endorsed. This is not only so because of its apparent medicinal qualities, but because of its high contents of solids, which average a little over 14%, and also because of its easy digestibility. This latter characteristic is due to the fact that the globules of goats' milk are smaller than those of cows' milk, and therefore the fat remains longer as an emulsion. Goats' milk creams very slowly and usually very unsatisfactorily, owing to the smallness of the fat globules.

The tables of analyses given show the fat of goats' milk averages about 4.5%. One writer says, "Individual instances, though they do not, of course, prove the average, may be quoted to show its extraordinary richness. The milk of an Angora goat which was analyzed by F. S. Loyd, analyst to the British Farmers' Association, contained no less than 8.68% of butter fat, and 9.85% of casein and milk sugar, the water amounting to only 80.53%; the water in the average cow's milk would be about 87%. A crossbred Toggenburger and Nubian goat gave 8.11% of fat and we have seen no Jersey records that have reached these figures.

As to the quantity of milk, much depends upon individuality, breed, feed and care. We are told that it is proved by the experiments in Europe that the goat makes much better use of its food in producing milk than does a cow, and considering its proportionate weight, is the greatest milk producer of all domestic animals. German writers estimate that a good specimen of the improved milch goat should give from three to five quarts per day with a long period of lactation. It is claimed that many of them yield annually from ten to sixteen times their body weight and exceptional ones have given over eighteen times their weight.

Egyptian Goats.—Of the improved breeds I think for this locality for any one who will give them careful attention, the Nubian or Upper Egypt goat would prove the most profitable and satisfactory. They are the largest, being about one and one-half times larger than the common goat. No member of the goat family is more peaceful or gentle. It is claimed that there is no odor connected with this breed even at rutting time. It is an exceedingly prolific animal, having been known to give birth to as many as 11 kids during one year—four on each of two occasions and three at another. The female has no horns. The hair is usually quite long, deep brown or black and quite fine.

The record shows that Nubian is the most productive milch goat known, and for this reason is much sought for to cross upon other breeds.

Other Breeds.—The Saanen and Toggenburger seem to be the most popular Swiss breeds. They are both very hardy and both very heavy milkers. The recent importation of milch goats into this country consisted of ten Saanens and sixteen Toggenburgers and F. Speer of Ithaca, N. Y., who selected this importation says the best individuals of either breed are able to produce four and in some cases five quarts of milk per day. He says the Saanen goats are about a third larger than the Toggenburger and are pure white, while the Toggenburgers are a beautiful solid brown with white markings about the face. They are very full of quality and when fresh carry immense bags. In their native country they are stabled in winter and in the summer go with the cattle to the mountains.

The Malta Goat.—Prof. Thompson says: "It is probable that in no country has the raising of milch goats been brought to such a degree of perfection as in the Island of Malta. It is said that the milk characteristic of the breed has been so perfectly developed that nearly every doe kid becomes a good milker."

The Maltese goats are about two and a half feet in height, while they often weigh 100 pounds. They are usually hornless. The predominant color is white, although there are many others—red, brown and black. There are two varieties of Maltese goats—the long haired and the short haired. The hair of the former is often four to five inches long.

And now I will close by saying that I believe a milch goat dairy offers the best prospect for a profitable business on a small investment of anything that I know of. We have a climate that is enticing people to come from all parts of the world in search of health. Should we not then provide them with every means for procuring the most suitable food to aid in building them up again, especially since they are only too willing to pay well for it?

THE TRIUMPHANT EMPIRE

"It Makes the Most Dollars for You"



Thirty times as many Empire Cream Separators were sold in the United States last year as were sold four years ago.

Thirty times as many dairy farmers decided last year that the Empire was the best cream separator.

Thirty times as many Empire Cream Separators are now being built at the Empire factory as four years ago.

Thirty to one represents the increase in the sales of the Empire in four years' time.

Wherever the Empire has been introduced it has become the most popular cream separator. Never in the history of the dairy industry has any machine of any kind made such rapid strides in sales and popularity.

The number of Empire Separators sold in 1903 was so great that we called it "our Banner year," but the increase in 1904 made that a double-headed Banner year, and the prospects for 1905 indicate that this is going to be a **triple-headed** Banner year!

Why Is This So? There Must Be Some Good Reason.

Does it not suggest to you that the EMPIRE is a pretty good sort of a separator?

Could any machine make such rapid progress unless it has exceptional merit and gives universal satisfaction?

No amount of advertising and no sales organization, no matter how perfect, could have accomplished such results unless the machine they sold did all that was claimed for it.

Many users tell us the EMPIRE does **much more** than we claim for it.

Such rapid strides, increased sales and greater popularity speak most emphatically of merit. If EMPIRE purchasers were dissatisfied, could such increased sales possibly have resulted?

Purchasers of the EMPIRE machines must have told their neighbors that the EMPIRE was all right, or so many neighbors would not have wanted to buy the EMPIRE.

We don't claim that the EMPIRE is the "original" or "the only "separator made, but we **do** claim, and the **records bear proof,** that an investigation of its merits almost invariably leads to its purchase.

That is all we ask—an investigation.

You will find the explanation in the extreme simplicity of the construction of the EMPIRE. All needless, troublesome parts are eliminated.

This means fewer parts—less friction—easy running—easy cleaning—less oil—fewer repairs—less fuss and bother—longer life—better service—more satisfaction—bigger profits—

"The Most Dollars For You"

We don't urge you to buy an EMPIRE, however, on the judgment of others. We don't ask you to buy an EMPIRE on our say-so; all that we ask of you is that you investigate its merits and then decide for yourself. If the machine itself does not convince you that the EMPIRE is the cream separator for you to purchase, we have nothing more to say.

The EMPIRE machine itself is the best advertiser and the best salesman on our force. Our advertising and sales organizations both bow to the EMPIRE and its merits as the one great essential feature in bringing it into such universal favor.

Send us your name, tell us how many cows you milk and we will see that the EMPIRE does the rest. We have several books on dairying for you. They are free.

GOOD MEN WANTED. So many dairy farmers are asking about the EMPIRE that it becomes necessary for us to constantly increase our sales organization. We are always on the lookout for men of merit and integrity to accompany the EMPIRE to these numerous inquirers. We want only men, however, who will make this their life work and take it up with the idea well fixed in mind. If you are only looking for a job for three or four months to fill in, don't bother us with your application, but if you want, or know of any good man who wants, a permanent, twelve months in the year situation, write us.

EMPIRE CREAM SEPARATOR COMPANY, BLOOMFIELD, N. J.

Branch Office, Portland, Oregon.

THE VINEYARD.

Sulphuring for Mildew.

Prof. F. T. Bioletti of the University of California answers a San Joaquin county grape grower as to sulphuring vines as follows:

Vines are sulphured in order to prevent the attack of a fungous disease known as oidium—sometimes spoken of as mildew. It depends altogether upon the season and variety of grape how often this sulphuring should be done. I believe in the region of Stockton (except, perhaps, in very wet places) one sulphuring, a little before the blossoming of the vines, would be sufficient. If the vines have been attacked by the mildew it would be better to sulphur them twice—the first time when the shoots are about 6 inches long and the second time when blossoming. There are very few localities in California where more than two sulphurings are necessary. It is usually found economical to use the best grade of sulphur—either very finely powdered or sublimed. It may be applied by shaking it over the vines either from a little sack made from close bagging or other material which will not let the sulphur pass too quickly. A better method is to use a bellows or a knapsack duster, especially constructed for the purpose. These can be obtained from most of the dealers handling spraying material or from hardware men.

It is best to apply the sulphur early in the morning, when there is no wind and when the vines are slightly damp with dew. It should be applied in such a way as to reach every growing portion of the vine. In order that the sulphur shall do good it should be followed by two or three hot days. If heavy rains follow before any hot days it does little or no good and must be repeated.

Bright Outlook for Wool.—Redding special to Sacramento Bee: Tehama county sheepmen look forward with assurance to receiving better prices for wool this season than they have received in ten years past. This prediction is made on contracts wool buyers are now making in Montana at 17½@18 cents for large amounts. That is practically a guarantee that Tehama county flockmasters will receive better than 20 cents for their 1905 clip.

Agricultural Review.

Alameda.

MORE LAMBING RECORDS. — Livermore Herald: The mention made in recent issues of the high percentage of lambs reported by various sheepmen in the southeastern portion of the valley has brought out still more records. James P. Moy, who is in charge of his father's extensive sheep interests in Corral Hollow, reports 2000 lambs and a percentage of 126. W. C. Mulqueeney, who has charge of the Mulqueeney ranges in the Midway district, gives his percentage of lambs as 125, which is better than the ranch has ever done before. Pete Long and Matt Burrell, two of the Mulqueeney herders, have made a record during the winter that is worthy of note. They have killed twenty coyotes and wildcats. The destruction of so many "varmints" will be good news to sheepmen throughout the district.

ALMONDS IN BLOOM. — Niles Press, Feb. 25: The almond orchard of B. A. Mayhew is in full bloom. It resembles a large bouquet several acres in extent and causes the passengers on the train to open their eyes in perfect wonderment. To Eastern people it presents a sight never to be forgotten.

Fresno.

TWENTY-ONE MILES OF TREES PLANTED.—Republican, Feb. 22: A line of trees reaching from Fresno to Kingsburg, a distance of 21 miles, was planted to-day by the arbor clubs of Fresno, Malaga, Selma and Kingsburg. About 2500 Carolina poplars and Balms of Gilead were set out. In April palms will be alternated with the trees set out to-day. The avenue is perfectly straight and is the main highway of the county.

Humboldt.

CREAMERY PRICES. — Arcata Union: Creameries in this section paid in February as follows: Arcata Creamery Co., 25¼; Minor, 25; Premium, 26; Peterson, 25½. The following prices were paid by the Eel River valley creameries: Capitol, 27½; Cold Springs, 24; Crown, 27½; Eel River, 27½; Excelsior, 28; Grizzly Bluff, 27½; White Star, 27; Pioneer, 28¼; Central, 16 days 27½, 15 days 29½; Cold Brook, 27½; Sunset, 27; Cream City, 28.

Kern.

FARMERS REQUESTED TO GIVE SEED A TRIAL.—Bakersfield Echo: The Kern County Land Co. has a large quantity of sugar beet seed on hand and will furnish free to farmers enough of the seed to plant an experimental patch. The seed can be had by applying to Myron Holmes, in the basement of the Land Company's building. Farmers getting the seed will be asked to report to the secretary of the Board of Trade as to how well the sugar beets thrive, and also to furnish a few of their beets to be analyzed.

WHEAT ACREAGE—SHEEP SHEARING. —John Wasson of Delano, who is in Bakersfield doing jury duty, says that the acreage of wheat in northern Kern is greater now than it has been in years, and the ground is in better condition. The moisture is down from 2½ to 3 feet and, with a fair continuance of spring rains, a heavy crop is assured. There are many bands of sheep around Delano once more, and they are keeping the grass down, but on the plains where it has not been pastured the feed is 6 inches tall. In some of the fields where the ground has been plowed it is knee high.

Merced.

SHIPPING OLIVES. — Express: Over 100 tons of olives were shipped last fall from the olive orchards of Messrs. Brennan, Bird, Hamilton, Hegyessy, McNaughton, Rector and Van Willigen and, to judge from a letter just received from one of the most important and reputable San Diego houses, the Merced olives are the best and finest grown on the Pacific coast.

POTATO GROWERS COMBINE.—A Merced and Turlock Sweet Potato Growers' Association has been organized, although the by-laws have not been completed nor articles of incorporation filed. The purpose of the Association is to manage marketing of sweet potatoes, to procure the best seed and to promote the interests of the growers in general. We are informed that 187 out of the 205 growers in the district between Merced and Turlock have joined the Association, and that orders for sweet potatoes will be distributed among the growers by the managers and the directors—each director representing a sub-district. The officers are as follows: J. Rodrigues, president; J. F. Frietas, vice-president; J. Gomez, secretary; D. Garcia, treasurer, and Frank Souza, manager (address, Merced). The directors are J. M. Trindale, J. P. Correia, F. L. Goulart, M. I. Pedras, Jose R. Gomes.

Riverside.

ORANGE GROWERS MEET. — Enterprise: A number of Rialto orange growers have become dissatisfied with the returns they have received through the packing houses and will insist on having the price of their fruit fixed in advance. A meeting was held Saturday in Rialto with the following growers present: W. P. Martin, L. W. Coleman, W. A. Meyers, Burt Lyman, J. E. Bush, J. C. Murry, O. D. Harris, F. M. Lingo, J. C. Boyd and Kenneth McRae. The following resolution was passed: "Resolved, That we shall sell no more fruit to any purchaser, either on commission or consignment, but only for spot cash. Resolved, That should any member of this organization sell any fruit contrary to the provisions of the foregoing resolution, he thereby agrees to deliver to this association fifty boxes of the choicest fruit which grows in his orchards, and the association has the right to go into the orchard and pick the fruit."

RUSHING ORANGE CROP.—Enterprise, Feb. 25: Orange pickers are busier than they have been before this season and unless rains come soon the shipments next week are likely to reach 200 cars a day. The better prices East have encouraged the growers to rush the fruit on the market, and if the rains do not stop the heavy picking the markets will again be glutted and prices will go down. It is the general impression that present prices will hold for two weeks longer, when they will drop again. Oranges are puffing badly in all sections, and around Redlands, Highlands, Riverside and Colton they are dropping badly. The growers are depending on the late crops to pull them out. The Valencias and Mediterranean Sweets are in good condition and both will be earlier this year than last. Both these crops will be short of last season at least 10%. The Valencias are almost as well colored now as they were last June and will be ready for the market the last of April. The growers will not ship these until the last possible moment, as the later they are held the higher the price.

San Bernardino.

BEET PLANTING COMMENCES.—Chino Valley Champion, Feb. 17: Some beets have already been planted for the Chino factory, and within about ten days, or as soon as rains may permit, planting will be in progress in earnest. The first plantings were made in the Westminster and Compton districts. At Chino, planting will begin in a few days. The sugar company itself will plant about 900 acres here and desires to begin early and the prospects are that nearly 7000 acres will be grown for the Chino factory.

INCREASED ACREAGE TO GRAIN. — Times-Index: G. A. Atwood, a leading grain operator of this county, estimates that the acreage that will be sown this season in this county will average: Barley 14,000, wheat 6000 and oats 7000 acres, of which amount about 60% will be cut for hay. As compared to past years, there will be between 7000 and 8000 more to wheat and barley. This estimate agrees with that of other grain operators here.

San Joaquin.

ASPARAGUS STILL LIVING. — Lodi Sentinel: There has been much talk among real estate men and growers ever since the Bouldin island break as to whether asparagus inundated would live under such conditions. The prevailing sentiment seemed to be that the plant could not possibly survive, but this has been disproved. Louis Staples, who lives at Terminous, and who had about thirty-five acres of asparagus flooded by the Edwards break, reports the water is now off the Sargent tract, of which his land is a part, and further says his asparagus is alive and in good condition. When it is remembered the Edwards break occurred in March of last year and that the Sargent tract was covered with water from that time until a couple of weeks ago, it is truly remarkable to find the asparagus still alive. This report will be a great boom for asparagus planting. Owners of river land are almost certain of a crop when the plant will withstand the water as has just been demonstrated. The break on Bouldin island is closed and four pumps, having a capacity of 20,000 gallons a minute, have been installed to take the water off the 6300 acres in that island. Claims are made that the work will all be completed within ninety days. If the asparagus there is still alive it seems certain that wheat, oats, barley and other cereals will be forgotten by the people of the reclaimed land and most of them will plant asparagus.

HOGS GETTING FAT ON SALMON.—Stockton Record: Because there is no fish ladder at the dam across Paradise cut, thousands of large salmon are dying, according to a Stocktonian who returned from there recently. Some time ago a dam about 5 feet high was built across the cut to confine the San Joaquin river to its natural channel. Notwithstanding this, a considerable amount of water percolates through the dam and runs through the cut. At this season of the year, millions of salmon are making their way up river to spawn. Many of them go up the cut instead of following the river. Unable to leap the dam, they are dying in the cut by the thousands. Hogs are growing fat upon them, so the Stocktonian reports. The scene is about 2½ miles this side of Banta.

POTATO STOCKS GETTING LOW.—Stockton Independent: From the best and most reliable sources it has been learned that the stocks on hand here at present are from 75,000 to 100,000 sacks at the most and there are one or two produce men who claim that there are not over 65,000 sacks of potatoes in Stockton to-day. There is less than half as many potatoes here as there was a year ago. There are a few lots on the island, but they are not of such a quantity that they are expected to cut much figure in prices, unless they were thrown on the market in a bulk, a thing that is hardly probable.

Santa Barbara.

RIPE APPLES IN FEBRUARY. — Lompoc Record: The editor of the Record had the pleasure last Sunday, February 19th, of picking thoroughly ripe apples in the orchard of W. W. Broughton in this city, and on Tuesday, February 21st, L. Buell brought to the office a number of ripe apples that he had picked that day from a tree in his orchard. The apples are what are known as the Skinner Pippin variety. About ten days after the heavy rains last September these trees began to bloom, and on account of there being no frosts in this section they matured and ripened.

Santa Cruz.

PLUM TREE READY TO PICK.—A freak of nature that attracts much attention among those engaged in the fruit industry in Santa Cruz county is a plum tree on Bellevue place, belonging to Councilman Wiley, which at present bears a crop of ripe fruit ready for picking. The tree bloomed during the hot spell when the forest fires were raging during September.

Solano.

TO FIGHT PEAR BLIGHT.—Vacaville Reporter: Owing to the rapid spread of the pear blight, H. C. Blake, county horticultural commissioner for Vacaville district, has circulated the following notice: "Almost invariably trees that blossomed out of season show a spread of the disease to a very alarming extent, and should the spread continue after spring blossoming, in the same ratio, it will mean almost complete ruin to the pear industry in one or two seasons. While there is no positive known remedy for this dread disease, it can be held in check to some extent by cutting out all infected limbs or twigs and burning them at once. This will lessen the chances for infection very much, and, as this is our only hope at present, we can not urge upon you too strongly the necessity of removing and burning immediately all infected limbs. This should be completed before the blossoms burst open." Mr. Blake informed a Reporter representative that he knows of orchards in which at the most, last fall, it would be possible to find only two or three diseased limbs, and from which three or four wagon loads of infested branches could now be cut.

Sutter.

TREES RELEASED FROM QUARANTINE.—Yuba City Farmer: The fruit trees that have been in quarantine in Live Oak, being infested with peach root borer, were released last week, the trees having been fumigated under the direction of the County Horticultural Commissioners and their deputies. The last inspection did not show any more borers alive and the quarantine was raised. We understand that several of the growers who had trees in the lot refused to take the same on the grounds that they were not delivered on time and do not wish to run any risk of getting the borers in their orchards.





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CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

BROWN'S BRONCHIAL TROCHES

Fifty years of success. The simplest and best remedy for Coughs and Throat Troubles. *In boxes only.* *Avoid Imitations.*

The Home Circle.

Let Something Good Be Said.

When over the fair frame of friend or foe
The shadow of disgrace shall fall, instead
Of words of blame of proof of thus and so
Let something good be said.

Forget not that no fellow being yet
May fall so low but love may lift his head;
Even the cheek of shame with tears is wet
If something good be said.

No generous heart may vainly turn aside
In ways of sympathy; no soul so dead
But may awaken strong and glorified
If something good be said.

And so I charge ye, by the thorny crown,
And by the cross on which the Saviour bled,
And by your own soul's hope of fair renown,
Let something good be said!

—James Whitcomb Riley.

The Goat.

The goat is an amusing beast,
On circus posters nursed;
His head is on the butt end of him—
He travels butt end first.
'Tis true he feedeth on tin cans
And other bric-a-brac,
And wears a bored expression,
And eternally says: "Ba-a!"

When he has quit this world of sin,
Eternally stopped buttin'
We greet him in our dining-room—
He comes disguised as mutton;
He has the cutest little tail,
A set of horns, also;
They're each at different ends of him—
At the butt ends, you know.

I would not care to meet a goat
And pat it on the head;
I hate trained nurses all the while
Tiptoeing round my bed;
My father and my mother, too—
It worries them like sin;
A goat's the impolitest beast—
He's always butting in.

—Houston Post.

"Williamson's Insomnia."

Williamson always complained that he was a bad sleeper. In his babyhood the tendency exhibited itself in the shape of a fondness for exercise between the hours of one and four o'clock in the morning. As he grew older the somnolent characteristics of the normal boy were noticeable by their absence. The sound of rain on the roof, a creaking door, the thought of tomorrow's examinations, could banish from him all possibility of sleep.

Mrs. Williamson's first important lesson in her married life concerned the sacredness of Williamson's slumbers. A mother-in-law, three sisters-in-law and a maiden aunt of her husband's all united to impress on her mind that if Charlie once fell asleep nothing short of a domestic tragedy was an excuse for awakening him. His oversleeping in the morning was to be hailed with thankfulness, as a partial atonement for the sufferings of a wakeful night. All of which Mrs. Williamson took to heart as in duty bound.

Williamson, junior, however, did not prove as tractable a pupil as his mother. Considering his inches, he had an extraordinary amount of self-assurance, and his bump of reverence seemed totally undeveloped. If he felt in the mood for roaring he roared regardless of the hour or whose slumbers he disturbed. The room chosen for the nursery was as remote as possible from Williamson's sleeping room, and here Mrs. Williamson spent many an hour of the night in an effort to render the outcries of her son and heir inaudible to her husband.

But one time when Williamson junior was cutting his first teeth his mother had been up with him for three successive nights. Then Williamson made a proposition that would have astonished his mother and sisters and the maiden aunt.

Looking across the table at his wife's pretty, tired face, the dark lines of weariness giving a new luster to her eyes, he said, firmly: "Kitty, you look worn out. Tonight you must get a good sleep. I will look after the baby."

Mrs. Williamson gasped. "Why, Charlie, you won't sleep at all. The time you usually go to sleep is just his hour for starting in."

"I can stand it for one night," said Williamson. Then he added with a martyr-like air, "I sleep so little anyway that I might as well turn my wakefulness to some account."

The prospect of one night of undisturbed sleep was too tempting to be resisted. Mrs. Williamson yielded with ecstatic gratitude. She retired early that evening, having first inducted her husband into the chief mysteries connected with the care of an infant.

It seemed to her that she had hardly fallen asleep when she was aroused by the vigorous lamentations of her offspring. Her first impulse was to go to her husband's assistance, but she heroically suppressed it. She would not spoil his sacrifice. She fell asleep again, her mind full of images of Williamson heating milk and walking the floor and crooning lullabies under his breath to the red, wriggling piece of humanity who seemed on such occasions a prey to the most bitter cynicism. Occasionally through the night she was awakened by the baby's cries, but each time she sunk to sleep, with the delicious consciousness that Charlie was doing everything necessary.

The sun was high next morning when Williamson bolted into his wife's room, watch in hand. "What time have you, Kitty? My watch seems to be off."

"Why, it's nine o'clock," gasped Mrs. Williamson. "You've overslept." Then, with commiserating tenderness, "I suppose you were so worn out, poor boy, that when he gave you a chance you just slept, regardless of everything."

Williamson looked sheepish. "To tell the truth, I never remember having had a better sleep," he said. "I was in a tranquil mood and the little fellow seemed to feel it. He never made a sound all night."

"Charlie Williamson!" shrieked his wife. "Do you mean to say that you never heard that poor child? Didn't you even feed him?"

She was answered by Williamson's guilty silence. Then, as she realized the astonishing truth she gave herself up to helpless laughter.

The cure was two-fold. Williamson, junior, was a baby of discrimination, and that long night in which his appeals had been ignored was enough to teach him a lesson. Williamson, senior, after this episode, found it embarrassing to say much about his insomnia. Singular to say, his insomnia retaliated by leaving him to his own resources. At last accounts Williamson was sleeping very much like other people. But since the night he took care of the baby Mrs. Williamson has never trusted him with the care of that precious infant.—Chicago News.

Pleasure in the Home.

Don't be afraid of a little fun at home. Don't shut your house lest the sun should fade your carpets; and your hearts. lest a hearty laugh shake down some of the musty old cobwebs there. If you want to ruin your sons, let them think that all mirth and social enjoyment must be left on the threshold without when they come home at night. When once a house is regarded as only a place to eat, drink and sleep in, the work is begun that ends in gambling houses and reckless degradation. Young people must have fun and relaxation somewhere. If they do not find it at their own hearthstones it will be sought at other less profitable places.

Therefore let the fire burn brightly at night and make the homestead delightful with all those little arts that parents so perfectly understand. Don't repress the buoyant spirits of your children; half an hour's merriment around the lamp and fireside of home blots out the remembrance of many a care and annoyance during the day, and the best safeguard they can take with them into the world is the influence of a bright little domestic sanctum.

How to Wash Dishes.

Too little importance is attached to the washing of dishes by the average housekeeper. Any half-taught girl engaged to assist around the house is considered competent to do the work.

This supposition has caused much destruction of fine china, for no one can do any work worth doing properly without thought, care and some system.

Dishwashing requires two dishpans, one in which to wash the dishes and the other for rinsing them, an abundance of heavy linen towels, some lighter ones for glasses, a good dish mop and dish cloths.

The dish cloth should be of strong linen. Stair crash is excellent for this purpose, as it will soon become soft enough to be flexible, and is very durable. Make these cloths about ten inches long, of narrow crash, and hem them, to prevent the edges from fraying when they are put through the laundry.

If dishes are gathered up in order and properly scraped it saves half the trouble of washing. Greasy and fishy dishes ought to be scraped and wiped off with pieces of paper, which may be burned up immediately. It takes only a little time to wipe away grease, but it saves the presence of this same grease in the dishwater, where it clings to the pan and is likely to get on dishes that are comparatively clean. Fish, it is well to remember, always infects dish cloths and towels, if the dishes that have contained it are not thoroughly wiped with paper before being washed. Knives should always be treated this way before they are washed and scoured. It is easier to burn paper soiled with grease and fish than it is to wash cloths used for the same purpose.

Put the dishes in hot suds. Use the dish mop freely, and transfer them to the other pan to be rinsed. Let this second pan be very large and have a wooden drainer fitted in two inches from the bottom, so that the boiling water poured over the dishes will drain off them. This is the best and safest way of draining. Wash pots, spiders and kettles with an iron dish cloth. Where food has adhered firmly to the bottom of a saucepan, and it is difficult to scrape it off, let the pan, filled with soapsuds, stand on the back of the stove for a few moments. Wash pots and kettles outside and inside, rubbing off any pot black on the bottom with a piece of newspaper. When dishes and kitchen utensils are washed in this way, dish cloths and dish towels will not become foul and require such continual washing with soda and scalding water as is usual.—Indianapolis Sentinel.

A Peculiar Incident.

"When I lived in Raleigh, N. C.," said Philip W. Wiley of the government printing office, "one of the churches was about to receive a new pastor, and two of the trustees of the church, associating with themselves three other members, went to the railroad station to meet him. On his arrival one of them spoke to him:

"'The Rev. Mr. Black, I believe?'

"'Yes, sir.'

"'We are the committee appointed to receive you. My name is Gray.'

"'I am glad to meet you, Mr. Gray.'

"'And this is Mr. Scarlett.'

"'Delighted, Mr. Scarlett.'

"'And Mr. Brown.'

"'Mr. Brown, I assure you this is a pleasure.'

"'And Mr. Green.'

"'Mr. Green, permit me to grasp your hand.'

"'Also Mr. White.'

"'Mr. White, I love to meet so many of my brethren. But Mr. Gray, is this a colored church to which I am called to minister?'

"'Why, no!' said that gentleman blankly.

"'Well, I see all the colors are represented in the committee,' said Mr. Black, 'and the idea occurred to me.'

"Such was the fact, though none of them had noticed it before."

Why Women's Shoe Laces Come Untied.

"Why is it that a lady's shoe becomes untied so much more frequently and apparently easier than a man's?" repeated J. V. Ladd, the shoe salesman, after me.

"Well, I don't suppose I would be in any better position to answer a question than any one else had it not been for the fact that a few days ago a couple of ladies, customers of my place, were discussing that very point, and their deductions appear to solve the riddle perfectly.

"It is not that a woman's shoe laces will not tie in as firm a knot as any other's; the reason for the frequent annoyances to which women are subjected is apart from that. In the case of high shoes the trouble is altogether in their height. The shoe laces further up on the leg than a man's, usually fits more snugly, and, therefore, encounters a greater strain on the knot when a woman is walking. The result is that it becomes loosened within a very short time, whereas a man may walk all day without the laces of his shoe becoming untied. Where low shoes are worn, the skirts flapping around the ankle do the work of loosening the knot."—St. Louis Globe-Democrat.

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Domestic Hints.

Lobster Dressing, Without Oil.—One teaspoonful mustard, half teaspoonful each of salt, sugar and black pepper dissolved in a little cold water, eleven tablespoonfuls of vinegar, three of melted butter, two well beaten eggs; stir all together and boil until it becomes smooth.

Rice Pudding.—Boil half a pound of rice in milk until it is quite tender, beat it well with a wooden spoon to wash the grains; add three-quarters of a pound of sugar and the same of melted butter; half a nutmeg, six eggs, a gill of wine, some grated lemon peel; put a paste in the dish and bake it. For a change it may be boiled and eaten with butter, sugar and wine.

Dessert Puffs.—Take one pint of milk and cream each, the whites of four eggs beaten to a stiff froth, one heaping cupful of sifted flour, one scant cupful of powdered sugar; add a little grated lemon peel and a little salt. Beat these ingredients all together until very light, bake in gem pans, sift pulverized sugar over them and eat with a sauce flavored with lemon.

Molasses Cookies.—Take one cupful of sugar and one cupful of butter or good shortening. Cream them and add two cups of molasses and two eggs. Dissolve two good-sized teaspoonfuls of soda in a little hot water, and fill up the cup it is in with cold water. Add it to the other mixture and stir enough flour to make a soft dough, but one that can be rolled out and cut into cookies. Spice to suit the taste.

Baked Apples.—Wash and core smooth, sound apples and place them in cake pans, pouring over them a goodly amount of syrup made by dissolving granulated sugar in water. Fill the holes left by the cores with maple sugar and set in the oven to bake. Baste the apples two or three times while in process of cooking with the syrup which was left in the pan, and when done serve with stiffly whipped cream in individual dessert dishes.

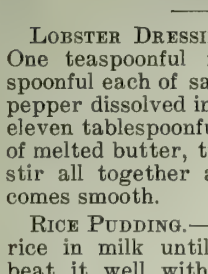
Oxtail Soap.—Take two oxtails, an onion, two carrots, one stalk of celery, parsley and a small piece of pork. Cut the oxtails at the joints; slice the vegetables and mince the pork. Put the pork into a saucepan. Then add the onions, and when they begin to brown add the oxtails. Let them fry a little, then cut them to the bone that the juice may run out in boiling. Place oxtails and browned onions in a soup kettle with four quarts of cold water. Let them simmer for four hours. Then add the other vegetables, stirring in also pepper, salt and two or three cloves. When the vegetables are entirely cooked the soup is done. Strain it and serve. If you wish, a few joints (one for each plate) may be trimmed and sent to the table with the soup.

Nice Way to Cook Parsnips.—Wash three parsnips and put them in boiling salted water. Allow them to boil for half an hour. If large, three-quarters of an hour will be necessary. When cooked remove the skin and cut them in slices three-quarters of an inch thick and fry in hot drippings. Sprinkle with a little pepper and serve very hot. Another method is to mash them with a wooden spoon and mix them with a large teaspoonful of butter, a tablespoonful of milk or cream and a little pepper and salt. Stir the vegetables over the fire till hot, pile them high in a dish and serve very hot; or, after being boiled and mashed, mix with a dessertspoonful of flour, a teaspoonful of butter, a teaspoonful of milk and salt and pepper to taste; roll the parsnips into a round cake with a little flour and fry in hot dripping.

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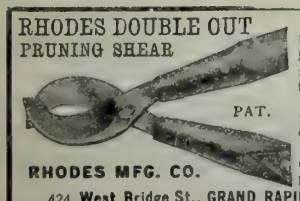
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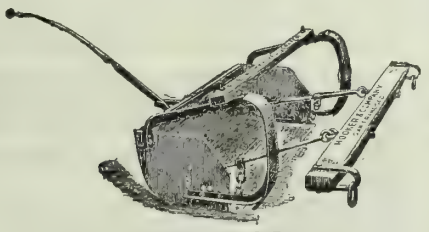
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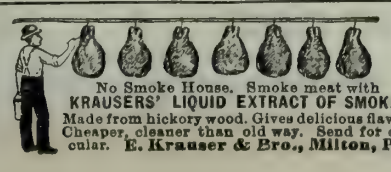
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The Markets.

San Francisco Produce Report.

San Francisco, February 28, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	*——@——	——@——
Thursday	1 19¼@1 18½	1 02 @1 01⅝
Friday	1 18⅛@1 19	1 01⅜@1 02⅛
Saturday	1 18⅞@1 18	1 02 @1 01⅝
Monday	1 14½@1 18¾	99⅛@1 01¾
Tuesday	1 15⅛@1 13½	1 00¼@ 98½

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	*——@——	——@——
Thursday	47⅞@46⅞	47¾@47⅜
Friday	46¾@48	47⅜@48½
Saturday	48⅛@47½	48⅝@47⅞
Monday	47⅞@48⅝	47¾@48⅜
Tuesday	48⅜@47⅛	48¾@47⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$——@——	$1 27¾@1 28¾
Friday	1 48¾@1 49	1 29 @1 29½
Saturday	1 48 @——	1 28⅝@——
Monday	1 46¼@1 48	1 27½@1 28
Tuesday	——@——	1 28 @1 27½
Wednesday	*——@——	1 27¾@1 28½

*Holiday.

Wheat.

Dullness has continued to prevail in the local wheat market, and there is little probability of much being done in this cereal here during the balance of the present season. There are no ships now on for wheat loading, and not over ten in port suitable for this purpose. There were no wheat cargoes cleared from this port during February and total wheat shipments for the month aggregated only 70 tons, part of this going to the Hawaiian Islands and not being exports proper. Only four cargoes have been cleared from here since the first of the year, aggregating 7000 tons, with $210,000 valuation. For the first two months in 1904 there were six clearances, including one for February, aggregating 9,500 tons, with a valuation of $267,000. Stocks throughout the State are quite light, and are smaller than a year ago, when they were of slim proportions. Spot values have ruled steady and speculative markets have not fluctuated much, although in the East there was effort to sell the market down on reported improved crop prospects in the Middle West. Advices from India were that crop conditions in that country were not favorable for a heavy yield.

California Milling	$1 55 @1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.49⅛@1.47⅞.
December, 1905, delivery, $1 29@1.27¼.

Wednesday, at the forenoon session of Exchange, for May, 1905, wheat $1.47½ was bid; December, 1905, sold at $1.27¾@1.28½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	-s-d@-s-d	-s-d@-s-d
Freight rates	12½@15s	12½@-s
Local market	$1 40 @1 45	$1 42½@1 47½

Flour.

There are no changes to note in quotable values or the general tone of the market. No large quantities offering and for recent makes of favorite marks current values are being well maintained. Not much flour is being shipped at present, particularly to the Orient, the last steamer for China taking only 1,378 barrels, all but 8 barrels being for Hongkong.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Offerings are of light volume, particularly of desirable qualities, and market for good to choice is rather firm at much the same range of values as current for several weeks past. Some barley is being landed north from Kansas at $1.12½ per cental, for shipment to Japan, coming through under a special freight rate, but the grain is of very ordinary quality. The steamer Brinkburn, which returned with a cargo bought for Russia and including 2,000 tons of barley, has been recleared for Japan; the barley on board the vessel has been sold to the Japanese. Two other vessels are taking barley on Japanese account. These shipments will be likely largely if not wholly common feed barley. Freight rates per steamer on barley from this port to Yokohama are $4.00@4.50 per ton.

Feed, No. 1 to choice	$1 20 @1 22½
Feed, fair to good	1 17½@1 20
Brewing, No. 1 to choice	1 22½@1 25
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

Receipts have been lat exceedingly light of this cereal, and spot supplies are of small compass. Offerings include very little high grade oats, choice to select being so very scarce as to hardly warrant quotations. Business in other than common feed qualities is necessarily of a retail character.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

Market has ruled tolerably firm, especially for good to choice dry, suitable for shipment, with little domestic of this sort offering at present, and best Eastern costing laid down here close to top figures quoted. The shipping demand is mainly for Central America.

Large White, good to choice	$1 32½@1 37½
Large Yellow	1 32½@1 37½
Small Yellow	1 75 @1 90
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 30 @1 37½

Rye.

Stocks are small, in few hands, and are being firmly held.

Good to choice	$1 52½@1 60

Buckwheat.

Little doing in this cereal; scarcely any offering from first hands.

Good to choice	$1 75 @2 00

Beans.

There is a strong tone to the market for good to choice beans of all varieties. Recent business has been mainly in Large Whites and Limas. One operator is said to have a corner on Limas. There are not many Small Whites or Pea beans in stock. Supplies of colored beans are not heavy and are mostly Bayos and Pinks.

Pea, fair to good, 100 lbs	$3 00 @3 25
Small White, good to choice	3 25 @3 50
Large White	2 65 @2 90
Pinks	3 50 @3 75
Bayos, good to choice	3 00 @3 25
Red Kidneys	4 50 @——
Reds	5 00 @——
Limas, good to choice	5 00 @5 15
Black-eye Beans	2 60 @2 85

Dried Peas.

There are few California peas on the market which can be termed choice. Some Eastern Green are being imported at a cost here of about $2 per cental.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

No evidence of much doing in this center on local account. Values are not very clearly defined. If selling pressure was exerted, lower figures than have been lately nominally current would have to be accepted. The steamer Ventura, sailing the past week for Australia, carried 100 bales for Sydney. The New York Producers' Price Current says: "The market has continued flat and without any particular incident this week. From the Pacific coast we hear of a sale of prime Russian Rivers at 24c. In Oregon the growers are still willing to sell at 25c, but find the buyers very backward. In New York State growers are much easier in their views and some prime hops have been offered outright at 26c. Business with brewers amounts to but very little and is still on a hand to mouth basis. A local dealer received 63 bales of New York State hops from London this week, which he claims he bought in London, including New York delivery, cheaper than he could buy them here. Reports from Europe show a dull and featureless market."

California, good to choice, 1904 crop	24 @27

Wool.

The local market remains inactive, for the substantial reason that there are no wools of consequence offering in this center. Quotations for the time being are necessarily wholly nominal. In the Territories and the producing sections east of the Rockies buyers are said to be proceeding more quietly than for some time past. Much of the clip has been contracted for, and that still in the hands of growers is being as a rule very firmly held, causing speculative operators to hold back, thinking they may be able to secure better bargains later on.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	20 @23
Middle County, defective	17 @19
San Joaquin and Southern, free	15 @17
San Joaquin and Southern, defective	13 @14
Southern lambs, as to quality	13 @16
Oregon, good to choice	20 @23
Nevada	16 @22

Hay and Straw.

The market shows no improvement, being heavily stocked with nearly all kinds of hay and is weak at the quotations, the demand being slow. The 39,688 bales shipped per steamer Brinkburn for Russia and returned to this port have been sold to Japan, the entire cargo of the Brinkburn making the second clearance from this port on Saturday last, this time for Yokohama.

Wheat, good to choice	$11 00 @ 13 50
Wheat and Oat	9 50 @ 11 50
Tame Oat, fair to choice	8 00 @ 11 00
Wild Oat	7 00 @ 9 50
Barley	7 00 @ 10 00
Alfalfa	6 50 @ 10 00
Clover	6 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 13 50
Straw, ₱ bale	25 @ 50

Millstuffs.

Bran and Middlings are in only moderate supply and are not being crowded to sale, but demand for them at full figures is not brisk. Market for Rolled Barley and Milled Corn is fairly firm at quotably unchanged values.

Alfalfa Meal, ₱ ton	$21 00 @ 22 50
Bran, ₱ ton	20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 00 @ 26 00
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	32 50 @ 34 00

Seeds.

The last steamer for the Orient took a shipment of 3,675 lbs. Mustard Seed for Japan, which is something out of the ordinary. Prime to choice Alfalfa is being steadily held; some of inferior quality is dragging at less than quotations.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13½
Canary	6½@ 6⅝
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

A shipment of 200 cases Extracted went forward per steamer for Germany the past week. Several small lots were taken for the Orient. Business on local account is light. Prices are without quotable change, but market is easy in tone.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Demand is fair and for desirable qualities prevailing values are being well maintained, with offerings light.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Beef is in fair request, but offerings are proving ample for current needs and market is not displaying any special firmness. Veal was in moderate receipt; prices for good to choice ruled steady. There was no scarcity of Mutton or Yearling Lamb. Arrivals of Spring Lamb are showing some increase, although still light. Hog market continues favorable to sellers, receipts being barely sufficient to satisfy the demand for immediate use.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6 @ 6½
Beef, 2nd quality	5½@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5¾@—
Hogs, large, hard, over 200 pounds	5½@ 5⅝
Hogs, small, fat	5½@ 5⅝
Veal, large, ₱ lb	6½@ 8
Veal, small, ₱ lb	7 @ 9
Lamb, yearlings, ₱ lb	8½@ 9
Lamb, spring, ₱ lb	12½@14

Hides, Skins and Tallow.

Dry Hides were more sought after than Wet Salted. Movement in Pelts and Tallow was of fair proportions and values remained as previously quoted.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@ 9½	—@ 8½
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@ 9½	—@ 8½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@12½	—@11½
Dry Hides	—@18	—@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@1 75	
Pelts, medium, ₱ skin	80@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	2 75@——	
Horse Hides, salted, medium	2 50@——	
Horse Hides, salted, small	2 00@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3⅝	

Bags and Bagging.

Recent offerings of San Quentin Grain Bags are said to have been all absorbed. Market for Calcuttas and local makes is quiet but firm.

Bean Bags	$ 4¼@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	5¾@6
Grain Bags, Calcutta, buyer June-July	6⅛@6¼
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

There were no heavy arrivals of either domestic or imported. Good to choice stock met with a tolerably firm market. Young Chickens, medium size to full grown, were most sought after. Large and fat Ducks and Goslings in first-class condition were readily placed. Inquiry for Turkeys was light, and owing to warm weather, was mainly for Live. Choice Young Pigeons were in light receipt and brought good figures.

Turkeys, Dressed, choice, ₱ lb	$ 19 @ 23
Turkeys, live gobblers, ₱ lb	18 @ 20
Turkeys, live hens ₱ lb	18 @ 20
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 6 50
Roosters, old	5 00 @ 5 50
Roosters, young (full-grown)	6 50 @ 7 00
Fryers	5 50 @ 6 00
Broilers, large	4 50 @ 5 00
Broilers, small to medium	3 50 @ 4 00
Ducks, old, ₱ dozen	5 00 @ 6 00
Ducks, large young, ₱ dozen	6 50 @ 7 50
Geese, ₱ pair	2 00 @ 2 25
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 25 @ ——
Pigeons, young	2 25 @ 2 50

Butter.

Shipping demand was fairly active and prices were maintained at about same range as previous week. Considerable fresh is coming forward, but stocks are given little opportunity to accumulate. Scarcity of supplies East is proving a temporary boon to the local dairy interest. Market is practically bare of cold storage butter.

Creamery, extras, ₱ lb	26 @—
Creamery, firsts	25 @—
Creamery, seconds	23 @—
Dairy, select	25 @—
Dairy, firsts	23 @—
Dairy, seconds	21 @22
Mixed Store	17 @18

Cheese.

A good outside demand, mainly from the North, is causing market to rule firm for desirable flats. Inquiry for the small sizes is not very brisk. Eastern markets are strong.

California, fancy flat, new	12 @—
California, good to choice	10½@11½
California, fair to good	10 @10½
California, "Young Americas"	10 @12½
Eastern	14½@15½

Eggs.

There has been a demoralized market, with a decided increase in arrivals and scarcely any inquiry on shipping account. Dealers have commenced to store, although it is rather early, few of the eggs at present showing good keeping qualities. In a few weeks demand will be active on storage account. Shippers should not wipe or wash eggs with water or any solution, as when thus treated they are not good for placing in cold storage.

California, select, large, white and fresh	17 @—
California, select, irregular color & size	16 @—
California, good to choice store	15 @16
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Asparagus is beginning to arrive freely and canners are expected to soon start in on this vegetable. Peas and Tomatoes sold at a wide range, owing to great difference in quality, and market was weak for common or faulty stock. Rhubarb was in increased receipt. Tendency on choice Onions was to firmer figures.

Asparagus, No. 1 to choice, ₱ lb	8 @ 12½
Asparagus, No. 2, ₱ lb	5 @ 7
Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	8 @ 12½
Beans, Wax, ₱ lb	— @ —
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ₱ lb	— @ —
Garlic, ₱ lb	8 @ 10
Mushrooms, ₱ lb	— @ —
Onions, Yellow Danver, ₱ ctl	3 00 @ 3 25
Peas, Green, ₱ lb	3 @ 6
Peppers, Bell, ₱ lb	— @ —
Peppers, Green, ₱ lb	7 @ 10
Rhubarb, ₱ lb	6 @ 7
Summer Squash, small box	1 00 @ 1 25
Tomatoes, Los Angeles, ₱ box	75 @ 1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market for No. 1 to choice potatoes inclined in favor of the selling interest, demand being good and offerings by no means heavy. Stocks of common qualities showed some reduction, but prices were without improvement, sales of ordinary River Burbanks being made down to 50c per sack ex-wharf. Sweets were in ample supply.

Early Rose, ₱ cental	1 40 @ 1 60
Salinas Burbanks, ₱ cental	1 00 @ 1 50
River Burbanks, ₱ cental	40 @ 95
River Reds, ₱ cental	65 @ 75
Oregon Burbanks, ₱ cental	1 00 @ 1 35
Sweet Potatoes, ₱ cental	60 @ 85

Fresh Fruits.

Receipts of Apples showed decrease and for choice to select the market was firmer. Much of the stock was more or less de-

fective, and for this sort rather low figures had to be accepted, buyers then taking hold slowly. Extra select qualities of most favorite varieties commanded in a small way $2.00@2.25 per box.

Apples, fancy, ℔ 50-box	1 75	@	2 00
Apples, good to choice, 50-lb. bx	1 00	@	1 50
Apples, fair to good, ℔ box	75	@	1 00
Apples, Lady, ℔ box	—	@	—
Persimmons, ℔ regular box	—	@	—
Strawberries, large, ℔ chest	—	@	—

Dried Fruits.

Considering the light stocks of most kinds now in first and jobbing hands, and the time of year, there is a fair movement and market in the main shows healthy condition. Prunes are receiving a little more attention, with few other than the medium sizes now offering, but plenty of these still on hand. Apricots of high grade are nearly out of stock. Evaporated Apples are almost wholly in second hands and supplies of very moderate volume. Peaches are well concentrated and firmly held. Choice to fancy Pears are scarce. The steamer Ventura, sailing Feb. 24th, carried 78,100 lbs. dried fruit, exclusive of Raisins, all but 21,500 lbs. being for New Zealand, the other for Australia. The shipment included 43,000 lbs. Prunes, and all going to Australia was of this fruit.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4½@ 5
Apples, extra choice to fancy, 50-lb boxes	6 @ 6½
Apricots, Moorpark	9½@11⅛
Apricots, Royal, good to choice, ℔ lb	8 @ 9
Apricots, Royal, fancy	9½@10½
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1⅝@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Stocks are showing some reduction. Offerings are mainly of the cheaper grades. Prices are without quotable change. The steamer Ventura, sailing Feb. 24, carried 16,250 lbs. for New Zealand.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4 crown, 20-lb box	— @1 30
Dehesas, 20-lb box	— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4⅜c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Oranges were in improved request, the weather being quite favorable for this fruit. Receipts were not heavy and the market ruled firmer. In Navels the smaller sizes were most sought after. Choice Tangerines were in very limited supply. The quotable range of values for Lemons remained as before, but there was more inquiry and a better tone to the market. Limes were offering in moderate quantity and at easier figures than previous week.

Oranges, Navels, ℔ box	75 @1 75
Oranges, Blood, ℔ box	—@—
Oranges, Seedlings, ℔ box	75 @1 10
Oranges, Cal. Tangerines, half box	1 00 @1 25
Oranges, Japanese Mandarins, ℔ box	—@—
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 50 @2 50
Limes, Mexican, ℔ box	4 00 @4 50

Nuts.

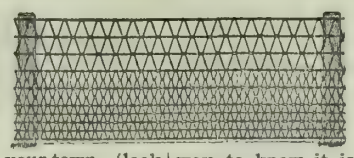
Very little doing in this line. There are fair supplies for this time of year of both Almonds and Walnuts, especially of the cheaper grades, and dealers are desirous of reducing holdings.

Chestnuts, Italian, ℔ lb	7 @ 8
Nonpareil Almonds	14 @16
Ne Plus Ultra Almonds	12 @14
Languedoc Almonds	9 @11
Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12½@13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

Market for dry wines is presenting a moderately firm tone, the quotable range remaining at 14@17c per gallon wholesale for 1904 vintage, San Francisco delivery, and not much offering from first hands, especially of high grade stock. Sweet wines of last vintage are offering at 25c per gallon at wineries, packages if furnished to be returned to seller, or at 27½c per gallon, San Francisco delivery. It is claimed that the prices named on sweet wines by the Wholesale Dealers' Association is for the purpose of crowding all competitors out of the field. Others not in the Association state that at the prices now asked by the Association the wine is no great bargain, as compared with prices and qualities of previous years. Receipts of wine at San Francisco last week were 264,650 gallons and for previous week were 411,300 gallons.

ELLWOOD FENCE



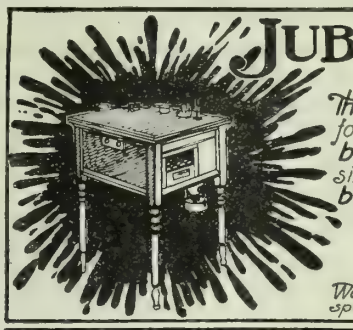
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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	107,086	3,158,010	3,848,708
Wheat, ctls	20,600	2,228,937	1,640,582
Barley, ctls	16,785	2,717,052	4,710,320
Oats, ctls	3,418	695,772	767,269
Corn, ctls	2,641	154,683	115,852
Rye, ctls	742	43,427	42,108
Beans, sks	12,771	512,654	604,381
Potatoes, sks	19,870	932,226	950,268
Onions, sks	772	101,699	114,401
Hay, tons	2,827	133,147	127,806
Wool, bales	107	40,383	36,299
Hops, bales	639	36,988	28,830

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	27,636	2,202,414	2,589,600
Wheat, ctls	267	800,704	740,538
Barley, ctls	7,527	1,656,835	3,713,106
Oats, ctls	43	51,183	17,452
Corn, ctls	815	72,973	14,369
Beans, sks	381	41,794	33,039
Hay, bales	1,551	144,068	123,555
Wool, lbs	....	830,690	1,848,923
Hops, lbs	....	298,155	550,727
Honey, cases	207	1,771	4,234
Potatoes, pkgs	998	79,474	80,512

LARGE CLING PEACHES.—Modesto Herald: A gentleman from southern California says that many of the peach orchard planters in this section are making mistakes by not planting the large cling varieties. "In our country," said he, "the growers who have the large clings can, if they wish, make contracts for any length of time—ten years, if they wished—with the canneries to take all their peaches, on the tree, at $30 per ton. On the other hand, the growers of the smaller peaches, such as the Muir, and the small freestone varieties, cannot get anywhere near that price, and the greater part of them have to dry their fruit because the canneries will not take it off their hands at any price. Regarding the Muir, I do not like it. It is in especial disfavor in southern California, for, while being a good yielder, the trees begin to go backward in a few years after they have borne heavily."

MUST PAY DAMAGES DONE BY LIVE STOCK.—Red Bluff News, Feb. 24: In the Superior Court Monday Judge Ellison tried the suit for damages brought by C. A. Edwards against James H. Benjamin on account of stock running at large on land claimed to belong to plaintiff, and after hearing the evidence adduced the court gave judgment in favor of the plaintiff for $72 and costs. The case was taken from the court of Justice of the Peace Bransford on account of involving the title to the lands on which trespass was claimed.

MUSKMELON MEETING.—Lindsay Gazette: Last Saturday afternoon a few citizens met here for the purpose of discussing the muskmelon proposition and taking some action leading to planting out an acreage as an experiment. Those present were S. A. Baggs, N. S. Marshall, C. H. Boardman, C. J. Carle, J. N. Bergen, D. H. Lowe and H. A. Sprague, Fresno representative of the California Fruit Exchange. It was proposed to order a quantity of first-class seed which was quoted at $1.50 per pound. It seemed that it required about one and a quarter pound of seed to the acre and 400 pounds will be ordered for Exeter and Lindsay. It was decided to pool the crop of all the growers of Lindsay and Exeter, and agreements to this, and that the fruit exchange was to act as agent in purchasing the seed and marketing the product were signed up. Those present signified their intention of planting the following acreage and it is thought that the others will be added to the list before planting time: C. H. Boardman, forty acres; D. H. Lowe, twenty acres; El Mirador Co., fifteen acres; Burt Hopping, eight acres and J. N. Bergen, three acres; total eighty-six acres. Mr. Baggs explained there was a gap in the market between the Coachella district and eastern Washington, which it was hoped that Tulare county could fill, in which event there would be no question that the industry here would be successful. Planting will be done from the middle to the end of March.

Flint's Condition Powders All Right.

Lake Charles, La., June 27, 1904.

Dr. B. J Kendall Co., Enosburg Falls, Vt.

Gentlemen:—Will you kindly mail me a copy of your "Treatise on the Horse and His Diseases" I have been using Prof. Flint's Condition Powders for years and always recommend them whenever I find anyone in need of a good reliable powder.

A gentleman here whose horse had some trouble with back or in hind legs, had tried everything he knew of and finally called in a veterinary whose only conclusion was that he could not tell what was the trouble, so did him no good. I suggested Flint's Powders; he has used two packages and horse is improving right along. Yours truly,

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AMERICAN RIVER, 172.—M., G. A. Biggs; L., Clifford Yost; Sec., Miss G. B. McDennell. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., P. R. Peterson; L., Mrs. W. A. Malloway; Sec., Louis Mekkelsen. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., G. N. Whitaker; L., P. Hanson; Sec., Mrs. Allena Clark. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., G. W. Haines; L., Marguerite Musso; Sec., J. J. Haines. 2d & 4th Sat. 2 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Edith Kerr; Sec., Mrs. Jennie Stillson. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., S. J. Squires; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

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EDEN, 106.—M., H. V. Monsen; L., Mrs. H. Christensen; Sec., Miss O. H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Florence E. Diemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., Miss Leona Gunter; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C Stewart; L., Melvina McFie; Sec., Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., J. F. Peterson; L., L. C. Gage; Sec., Roscoe Allen. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., E. H. Armstrong; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 318.—M., Warren E. Hyde; L., H. F. Tuck; Sec., Miss S. M. Corpestine. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

LOOMIS, 323.—M., Rudolph M. Nixon; L., Frederick J. Fitch. Every Sat. eve. 8 P. M., Loomis.

MAGNOLIA, 261.—M., F. D. Rollins; L., Robt. Elder; Sec., Gertrude Higgins. 2d Sat. 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Miss E. C. Owen; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Walter Renwick; L., D. J. Brown; Sec., Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

NEWCASTLE, 3.5.—M., C. D. Freed; L., G. D. Kellogg; Sec., G. T. Kuykendall. 2d & 4th Sat. 2 P. M., Newcastle.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. W. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., F. E. Mitchell; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putman. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., H. Johnson; L., P. C Robbin; Sec., Cassie McGlynn. 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilbourne. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., W. H. Skinner; L., J. D. Silvia; Sec., Emily L. Burnham 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., S. S. Gladney; L., J. D. Gould; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., S. A. Maupin. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., G. H. Slawson; L., H. C. Muddux; Sec., Mrs. Silas Orr. 2d & 4th Sat 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE, 10.—M., C. R. Williams; L., Mrs. E. B. Marcene; Sec., L. S. W. Brasch. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., Geo. Conners; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. L. W. Towne; Sec., Jas. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. O L. Abbott; Sec., T. B. Smith. 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spalding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d & 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., F. H. Stiles; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Tulare.

TWO ROCK, 152.—M., A. P. Martin; L., Mrs. R. A. Linebaugh; Sec., Wm. A. Linebaugh. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WATSONVILLE, 124.—M., H. F. Blohm; L., Mrs. N. Strove; Sec., Ray Rowe. 1st & 3d Sat. 2 P. M., Masonic Hall, Watsonville.

SACRAMENTO POMONA, 2.—M., H. C. Muddux; L., E. Greer; Sec., Mrs Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SONOMA POMONA, 1.—M., W. H. Skinner; L., Geo. Connors; Sec; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

The Grange and Parcels Post.

To the Editor:—Congratulations are due to the Pacific Rural Press in becoming once more the mouthpiece of the State Grange, and to the State Grange in having an organ so excellent, well established and widely read.

One of the most useful objects for which the California Grange will this year work is the parcels post, as to which the thirty-second annual session adopted the following resolution:

Whereas, The parcels post has proved in other lands admirably subservient to the needs of agriculturists, receiving produce from the farm gate and delivering it direct to consumers at a minimum cost; and

Whereas, The British Postoffice has obtained from the American express companies a postage stamp rate of 24 cents for eleven pounds anywhere between New York and any express office in the United States, thus proving the feasibility of establishing a rate on the American continent;

Resolved, That in choosing our representatives to Congress we will vote for those who will promise to legislate for the establishment of an adequate up-to-date parcels post, and that our delegate to the National Grange be, and hereby is, instructed to use his utmost efforts to favor any measure tending to the early institution of this most useful post.

The thirty-eighth session of the National Grange at Portland also evinced a continuous lively interest in parcels post legislation, passing strong eulogistic resolutions.

It is hoped that each Grange will take the matter vigorously in hand, and individually urge action on their representatives in Washington.

Don't leave it, brother, to the other fellow. As a member of a Government by the people, it is your duty, as well as privilege, to have and express an opinion. If you do not express it to your representative he cannot know what you really do want. And he is at Washington to do what you want done. So keep on telling him till he does it.

On the 17th of this month President Roosevelt signed a Parcels Post Convention with Great Britain on terms (the Postmaster-General writes me) better than those formerly obtaining through the agency of the American express companies. This comes into operation on April 1st next, and will be beneficial.

What is far more necessary and what would prove far more widely beneficial is an up-to-date domestic parcels post. Let the people demand it with no uncertain voice. Edward Berwick,

President Postal Progress League of California.

Pacific Grove.

San Jose Grange.

At the meeting of Feb. 25 the initiation of six new members into the first and second degrees occupied the greater part of the morning.

Judge Hurlburt, chairman of the committee on legislation, reported that nothing new had developed in the legislative matters now holding the attention of the local Grange. The committee on educational matters reported in favor of the bill containing the new manner of apportioning school moneys.

Mrs. A. R. Dow, a visiting member from Oakland, entertained the Grange during the social hour by reciting one of Robert Burdette's enjoyable productions, entitled "The Colonel's Experience."

A communication was received from the Sacramento Bee requesting that San Jose Grange take action upon the bill relating to railroad crossings. It was decided that the Grange was in favor of allowing other railroads to cross the track of the Southern Pacific.

The meeting of Saturday, March 11, will be made the occasion of a special programme, which will be followed by a "harvest feast."

Sunnyvale Grange.

At the meeting of the Sunnyvale Grange five candidates took the first and second degrees and the several standing committees were appointed by the Master, J. F. Spaulding, as follows: Legislative, H. R. Fuller, W. C. Beach and G. L. Culver; farm and orchard, Mrs. M. J Hard, F. C. Wilson and Mrs. L. Wagner; fruits and markets, G. W. James, C. C. Spalding and E. W. Burton; education, Miss Helen Carnes, Miss Ida Trubschenck and Frank McGinness; finance, W. W. Ackerman, L. Larson and L. Grabel; relief, Mr. and Mrs. W. W. Ackerman, Mr. and Mrs. F. C. Wilson and Mr. and Mrs. F. E. Webster.

The Grange decided in favor of holding a Farmers' Institute. The time selected is Friday and Saturday, March 31 and April 1. The Grange will open its hall and offer all the conveniences of the dining room to those who wish to bring lunch baskets. A cordial invitation is extended to all.

Mrs. Sanford Austin read an instructive paper on the work of the Grange, and members responded at roll call with quotations or a story, and the young people enjoyed the social hour in playing games.

At the next meeting H. R. Fuller, G. W. James, Miss Helen Carnes and W. W. Ackerman are expected to address the Grange on the several topics assigned them as chairmen of committees.

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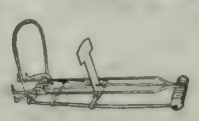


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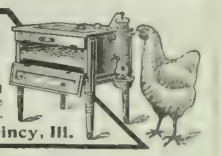
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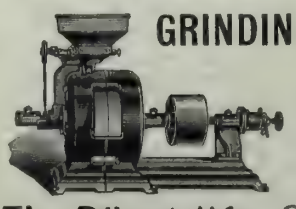


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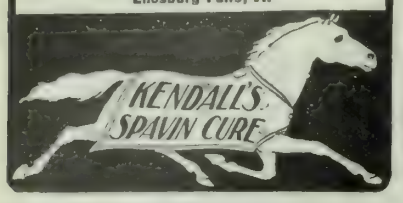
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THE FIELD.

What the State Fair Might Be.

With the understanding that there shall be no more horse racing with the Fair of the State Agricultural Society, the ways and means committee on Friday last decided to recommend the passage of Assembly Bill 608, appropriating $180,950 to be expended on the Fair grounds at Sacramento belonging to the Society. An amendment embodying the proviso regarding horse racing was to be added to the measure.

It is interesting in this connection to see what the new secretary of the Society, Mr. Albert Lindley, thinks about what a State Fair should be. He spoke before the legislative committee as follows:

In selecting me as their secretary I do not believe the directors of the State Board of Agriculture ever intended that I should act as their spokesman, therefore I wish to be understood not as speaking "for" them, but rather as speaking "of" them and their plans and the work they have outlined for me, their secretary, to perform. They expect to give to the people of California a State Fair that will meet with the approval of all classes, not a Fair that will appeal to the owner, breeder and follower of running horses alone. They want a State Fair run on broader lines, one that will interest and benefit the producer of anything anywhere in this our great and glorious California.

In all of the many States in the Union giving annual Fairs there is not one that does not give a magnificent exhibition of its products, and these exhibits are viewed by thousands upon thousands of people each year—people who profit by what they see, people who return to their homes, workshops and farms determined that they will improve the comfort of that home, improve the output of that shop, improve the products of that farm.

What Constitutes Success. — In every one of these States these Fairs are a success, not in the amount of money possibly they may turn back into the treasury, but in what they return to the State and its people in the form of improved products, in increased population and the consequent enhanced wealth.

From now on the State Fairs of California, I believe and hope, are going to be conducted for the benefit of the stock raiser, the horse breeder, the mechanic, the merchant and the farmer and not for the benefit of the race track "tout," grafter and gambler; for the benefit of a syndicate consisting of the entire people, and not the benefit of a syndicate of bookmakers.

Producers from every county in the State will be urged to display their products, with the assurance that if they have the best of that particular product they will be promptly and amply rewarded in money premiums and medals, that they may be fully compensated for the expense of placing their exhibits, and that they may have something to keep forever, showing that of that particular product in that particular year they had the best that was produced in all California.

Horse Racing is Necessary.— A State Fair without racing would be as flat, uninteresting and unusual as would be a session of the Legislature without some kind of investigation. We would deprive the horse breeder of the opportunity of giving to his animal those records upon which his value and sale depend. We would deprive the public that patronize our Fairs of their principal amusement. We would deprive the newspaper men, upon whom the success of everything so much depends, of his most interesting and sensational stories.

To exhibit a fast horse to the public without showing his speed would be as disappointing as it would be to exhibit to the people the magnificent Melba and not let them hear her sing. We want upon our Fair grounds racing tracks upon which the California-bred horse, the fastest and grandest animal the world has ever produced, can make upon our own soil those record-breaking bursts of speed that have advertised California throughout the world—more, probably, than any other one thing.

The breeding of fine horses is in value about fifth among the State's industries—and the trotting, pacing and draft horse development is dependent almost entirely for its encouragement and support upon our State and County Fairs. Let this great industry have the best help of our State Fairs, let us encourage a rivalry between the counties of the State in the raising and developing of harness horses, but when they are brought to our State Fair grounds, there to make their records, let us throw about these contests every safeguard, that they may be conducted in an honest and sportsmanlike manner.

To Cleanse the Tracks.—Let us warn from our Fair grounds every sure-thing gambler and crook; let us go further and ask the good people of Sacramento to join with us in keeping this most despicable class outside of the limits of their city and county during the progress of our Fairs, so that its patrons may feel assured, whether on or off the Fair grounds, of being safe from being robbed by these sure-thing touts and thugs.

All Exhibits Needed.—We want to have exhibited each year hundreds of head of horses, cattle, sheep and swine; we want exhibits of our agricultural and mineral products, of our poultry, and also of manufactured articles; we want all these exhibited in suitable buildings located near the main entrance to the Fair grounds, where they are easily accessible to the public and in which these products may be properly displayed and judged, to the end that the premiums may be honestly and intelligently awarded. The people of Sacramento have given to State Fairs in property and improvements almost $175,000; but the great State of California, with its vast wealth, is among the few States in the Union that has never had a dollar invested in State Fair property or improvement; but she has spent hundreds of thousands of dollars in sending exhibits of our State products to those expositions held in other States and other countries, and I contend that every dollar of the money spent in this manner has been well invested and has returned to us indirectly a profit so great that the amount is almost incalculable; but I also contend that not $1 of the money so spent has been better invested than would be the money used in properly equipping our State Fair grounds and conducting thereon each year such an exhibition of our State products that its resources may be seen not only by the visitor from abroad, but may be seen and understood by our own people.

No Division of the Attractions.—Every exhibit shown under the management of the State Board of Agriculture should be placed upon the Fair ground, and not, as is now the case, the Capitol Park and partly upon the Fair ground, necessitating, as it does, the employment of two managers, two sets of men, two bands and many other double expenses, and compelling the public to pay two admissions for what should be one exhibition. The fact is the Agricultural Directors are earnest and honest in their belief that with California producing as she does the finest fruit, the biggest vegetables, the best wines and brandies, the tallest and broadest trees, the most beautiful flowers, the greatest variety of cattle, sheep and swine, the fastest horses, the most brilliant and manly men and the most lovable women and children in all the world, they can, with proper State support, give an exhibition of our State products each year that can not be equaled by any other State in the Union. And within a very few years our Fairs will become so popular that they will not only be self-supporting, but will yield to our treasury a profit, as the State Fairs are now doing in so many other States in the Union.

Should I be continued as their secretary, I promise you that at these exhibitions I will see to it that there will be something doing every minute.

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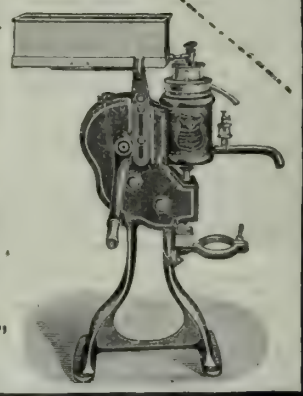


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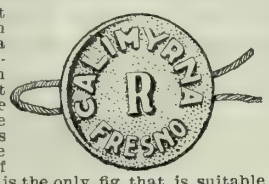
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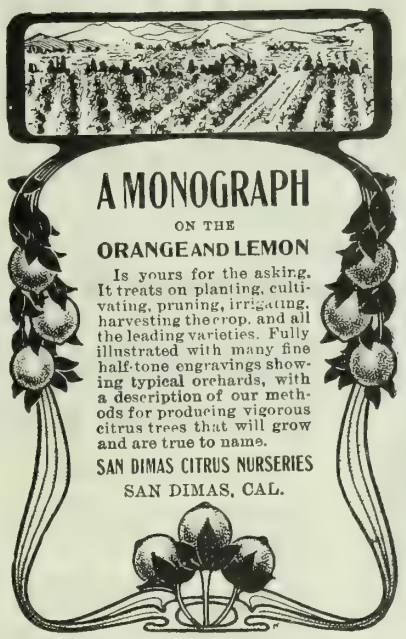
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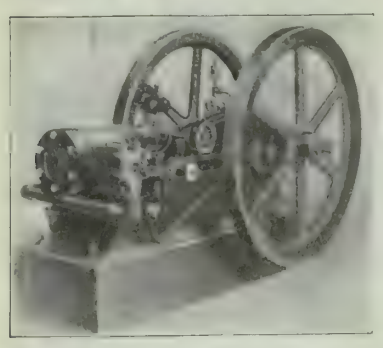
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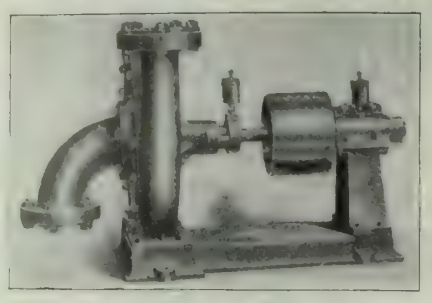
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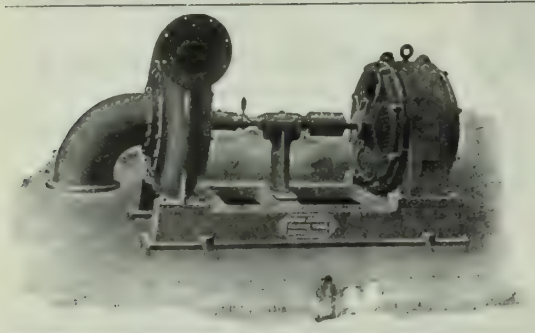
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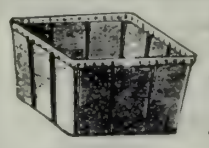
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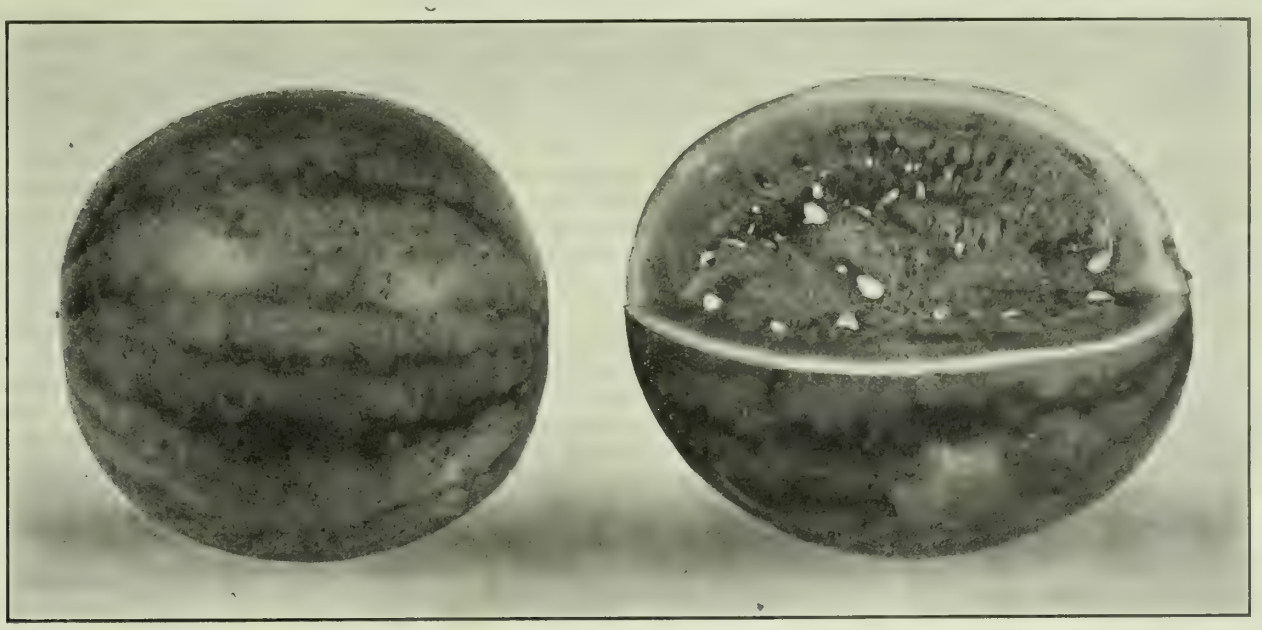
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 10. SAN FRANCISCO, SATURDAY, MARCH 11, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Humboldt Creameries.

According to the Humboldt County Souvenir, the building of the Humboldt creamery in 1890 at Arlynda, near Ferndale, commenced the creamery era in Humboldt, and soon placed the county in the lead in that industry for the State. The venture, as at first organized, was not a success financially, as is often the case with the first attempt at new methods, yet it was the stepping stone to ultimate success far beyond the highest hopes of its projectors, and the loss made by the first stockholders has been paid back to the dairymen of the county one hundred fold by the results following this enterprise. The faulty construction of the plant, as at first placed, the purchase of the milk by weight instead of by test, also the crude machinery then in use, made the cost of manufacture about as much as the pan process. Since that time the improved separators, combined churn and butter worker, with the assistance of the butter moulder and cutter—the invention of a Humboldt county mechanic—have reduced the cost of manufacture to a minimum. For two or three years after the construction of the first three or four creameries, some dairymen refused to sell their milk, saying they could make their own butter at practically no cost, for the reason that there was always a man to spare between milkings to do the work. But the demand for creamery butter in the San Francisco and other markets became so strong that the price was forced up 2, 3 and 4 cents above the dairy product. This practically settled the old process in the territory accessible to the creameries.

Creameries receive milk twice a day from March 1st to October 31st and from November 1st to February 28th, once a day. When it is weighed, a sample is taken from each delivery, and every eighth day, or four times a month, the samples are tested to find the percentage of butter fat contained in them. The average test taken from one of the largest creameries for a year was about 4%, or, to give the exact figures, 3.997. This average test has been steadily increasing, owing to the fact that the progressive dairyman has taken advantage of the testing process to find out the actual value of each one of his herd.



The Chilian Watermelon—Last Season's Favorite in the California Markets.



The Eureka, Humboldt and Excelsior Creameries—Three Establishments in Humboldt County.

Watermelon.

This week's heat recalls the watermelon and suggests that the planting time is approaching. On this page is a portrait of a variety which, according to the mention in the Cox Seed Company Annual, created quite a sensation in the local markets last summer, and others may like to try it. It is almost round, with fresh green skin, marked and thin skinned, as the picture shows. It is said to stand shipping well, without cracking, and the flesh is deep crimson, crisp, solid and very sweet.

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E. J. WICKSON. ..... Horticultural Editor

SAN FRANCISCO, MARCH 11, 1905.

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The Week.

It is quite customary to have a hot spell in March to hurry things along, and it came during the present week. All kinds of vegetation are bounding forward. Deciduous trees are bursting out as they do in May at the East and the fields are carpeted with flowers. Fruits are setting well from an abundant bloom and the grape vines are becoming restless and likely to show the green several days earlier than usual this year. Under such circumstances there is apprehension of frosts; but it is not necessary to indulge in it, for it is only rarely that wide harm is done; still those who believe in protection should get everything ready at once and thus be forearmed. It is, however, only in particularly dangerous places that the outlay and trouble yield most return; elsewhere the sentiment seems to be to take the chances. On the whole, frost fighting is less heard of than a few years ago. We should like to know what readers think of it after the experience they have had.

Speculative wheat seems to be drooping, both here and at distant points. Chicago dropped 4½@5c. per bushel, and San Francisco on May wheat 3½c. per cental and on December ½c. This shows that the local wheat situation is strong. There comes a report from Chili that the crop now nearing harvest is short and that California will be called upon. At the same time we are buying milling and seed wheat from the outside and local spot is unchanged and little doing. Two cargoes of barley have gone to Japan and another loading. The largest recent clearance of oats goes to the same destination. A cargo of Chevalier goes to Melbourne and a lot of corn to Central America, leaving the price stiff behind it. Beans are strong, but buyers are not active at the last advance. Millfeeds are unchanged, quiet and steady, with light stocks in few hands. Hay is a trifle better and receipts are lighter, but prices are unchanged. Mutton is rather firm; hogs hold up well, though receipts are larger; beef is unchanged. Butter has been lifted, but is slow at the advance. Cheese is moving freely with no large stocks; eggs have recovered and the speculative demand will act until prices go beyond packers' views. Poultry is in good shape for young stock, but quiet, on the whole, and expecting the Lenten lapse. Choice potatoes still do well. Onions are high and scarce, with five cars from Oregon bought before arrival. There is a light stock of fine apples and plenty of common. A few raspberries are in. Good oranges are selling well, but poor go a-begging. Lemons are steady and limes unchanged. Dried fruit is still in good shape and stocks light, with a shipment of 41,000 pounds to British Columbia. Nuts are as before. Some honey is going out, but there is still too much amber honey here and some anxiety to sell. Hops are very quiet. Nothing is doing in wool but talking down by buyers, who would like to find some wool just the same.

By the way, it seems too bad to be selling so many thousand California sheep for the mutton markets of Alaska while the wool market has such an outlook. Never in western America was wool sold so far below the cuticle on the sheep's back as at present. The fact seems to be attracting wide attention. The London Times says: "Never within the recollection of some of the oldest men in the trade has there been such a scarcity of supplies of raw material as at the present time. An illustration of this is gained not only by the high prices prevailing just now, but by the fact that in the United States consumers are contracting for their domestic clip of wool of 1905 before it has been grown. Report has it that in America about 20% of the coming clip has already been contracted for. Our own people, however, have been wise enough not to lose their heads to the same extent, but it will be realized that in face of what has been taking place, their situation, with only an indifferent trade at home, is by no means free from anxiety. Together with the increased consumption there has been a falling off in the supply from New Zealand for the season ending June last of 54,000 bales. It is estimated that the River Plata season produced over 60,000 bales less than the one preceding. Our domestic clip has been estimated at over 100,000 pounds less, and there have been reduced quantities from other countries. With the demand to cover Japanese orders, and the speculating of the Americans, no surprise can be expressed at the bounding up of values." All this shows that it is a mighty poor time to be eating up sheep.

We are not sure why we are sent so many exhortations to repeal the desert land laws, etc., by those who cannot be suspected of working only for the health of the dear people. These exhortations, which are really not from the people in any sense, always cause us to suspect that some one has a blanket over a great lot of land and wants Uncle Sam to go out of the real estate business so that they can uncover at a good advance. But these exhortations go to people who are less suspecting than we are, and some of them are excited to get out and howl against land sharks when the fact probably is that it is some kind of a land shark, who has got his gills full of land, who is working them up to such frenzy. It is unfortunate when a private interest can disguise itself as a public interest, and it is unfortunate, also, that some people are disposed to do demagoguery for good pay. If we could free ourselves of this distrust, the whole question would be clearer. And then, too, it may be better for the public that stuffed sharks should have their way than hungry ones. But if so, why not come out and argue it on that ground? The claim of public interest by some agents of private interests makes us sick.

The First Biennial Report of Elwood Cooper, State Commissioner of Horticulture, is a very creditable document, which all in the fruit interest should apply for at once. It is a handsome volume of 420 pages, to which the State Printer has given unique style and excellent typography, so that it is an ornament to any book shelf. Besides this there are excellent plates and engravings, showing the several parasitic insects which have excited such wide interest in this State, and many interesting articles showing the progress of the fruit industries and the problems which are now in hand. The report of the Fruit Growers' Convention at San Jose last December is also given. The publication strikes us as one of the most satisfactory State documents ever published in California.

They did some good tree planting at Fresno on Washington's Birthday—21 miles of it along the highways leading southward toward Selma. Carolina poplars and Balm of Gileads were alternated. In all between 2000 and 2500 trees of these two varieties were planted. Next April palms or an evergreen will be alternated with the poplars and Balm of Gileads.

QUERIES AND REPLIES.

Growing Peas for Canning, Etc.

To the Editor:—I am a reader of the Pacific Rural Press and I am in possession of your two books on "Fruits" and "Vegetables," which have given inestimable value in planting my orchard of ten acres about 6 miles east of Fresno. The soil is a loose, rich, deep loam about 7 to 10 feet to seepage water, and planted to Muir peaches. I would like to utilize the soil between tree rows by seeding to peas for canneries. What kind would you suggest under those conditions for cannery use? I was thinking also of sowing broadcast for a crop of dry peas. If so, what kind would you prefer? Of course I would have to sow early in the fall after the first rain, in order to reap the full benefit of the winter rains. How many pounds to the acre would it take?—Grower, Fresno.

Before planting peas for a cannery you ought to confer with the manager of the cannery which you intend to supply and have him indicate the variety which he wishes. It is also a safe proposition if he can supply you with the seed at a fair price, because then there can be no complaint that the peas are not right. It is rather dangerous to plant an acreage of peas, or of any other vegetable, for canners' use without having such understanding beforehand, as there are several kinds used by the canneries and the canners have some preference and choose varieties sometimes with an idea of having the crop come at a time when they have labor for it. For a crop of dried peas you probably would do as well with what is called the Niles pea, the common field pea which is sold in quantity in the San Francisco markets. Your idea of growing a winter crop of peas is a good one, providing the frosts are not too sharp in your neighborhood. It is common to sow from forty to sixty pounds to the acre in the drills or about 100 pounds per acre broadcast.

White Potatoes in Southern California.

To the Editor:—Will you have the kindness to inform me if you know of a variety of white potato which will grow in the sandy soil of southern California, near San Bernardino. I am informed by those living in this neighborhood that the white potato cannot be successfully raised in this neighborhood.—New Comer, San Bernardino.

It is pretty hard to run against actual experience in the locality, and when the character of the people and their success in growing other crops command respect, it is well to be conservative in proceeding against their judgment. However, if we had your proposition on hand we should wet down thoroughly a piece of soil, if not already fully saturated by rainfall, and plant the Burbank pot to, cover quite deeply and then keep the ground loose on top to prevent evaporation. Many of the failures at the south result from planting too late in the season; February, or the first part of March, if the season is a wet one, should be the planting time under your conditions. The Burbank potato succeeds in sandy soils in Nevada and in other interior situations in the presence of heat and drouth, providing an early start is had. In our issue of February 27, 1904, we printed an account of potato growing in Arizona, which embodies quite fully the points which we desire to make and which you may find suggestive and helpful.

Treatment of Cherry Scions.

To the Editor:—Will you kindly advise how late in the season may be taken from the Royal Anne cherry tree scions for spring grafting? Do I understand correctly that it is absolutely necessary that the scions be dormant?—Beginner, Napa.

Your scions for grafting should be taken at once and placed in moist ground on the north side of the building or fence, where the temperature is low and sun heat does not reach them. It is a good thing also to cover with an inverted box, or something of that kind, to reduce the action of dry air. This will keep the scions plump and dormant, and they will be ready for use day after day as your grafting proceeds, for grafts can be set even after activity has started in the stock, but the scion itself should be dormant, because otherwise it will lose its moisture by bud and leaf action before the new supply of sap comes by contact with the stock. Sometimes success is attained in grafting with the growing scion, but the percentage of success is low. Scions treated as described will remain dormant in good condition for many weeks.

Fertilizers for Hay—Feeding Alfilerilla.

To the Editor:—I have about six acres of land which up to about eight years ago had (so far as known) never been cropped. For the past eight years it has grown a crop of oats for hay every year. I know that I cannot continue to take a crop every year if I put nothing back. Will you kindly tell me what would be the most economical fertilizer? Would a change of crop be beneficial—for instance, wheat one year and oats the next? I have been told that alfilerilla is injurious to horses. My informant says it is injurious to the kidneys. Do you think this is true? It grows very luxuriantly here and my horse is very fond of it.—Farmer, Fair Oaks.

Perhaps you overlooked the report of an experiment in fertilizing land for hay conducted by the University Experiment Station, and of which we gave the results in the Pacific Rural Press of Feb. 18. That is the latest information on the subject. There is no noticeable advantage in changing from one cereal to another—all make about the same draft upon the soil and all are cultured alike. A change to be of benefit must be to a plant of different nature and different culture, as from a cereal to a legume or to a hoed crop, etc.

Alfilerilla is somewhat energetic in its action upon the functions of the horse when fed in large quantities, but for all that it is a feed which is widely used and generally considered satisfactory. A horse which is able also to get at hay or straw is not likely to be injured by feeding upon alfilerilla.

Cull Oranges as a Fertilizer.

To the Editor:—What benefit, if any, is derived from decaying oranges used to fertilize? As our fruit this year is dropping off very badly, I have been crushing it into the ground. Is that the best way? —Grower, Riverside.

The University report shows by analysis that the value of the fertilizing ingredients contained is about 63 cents per ton of oranges. This is, of course, very low. There may be a little additional value from the return of organic matter to the soil, but this would be in a mechanical line and not in the line of plant food. The best thing that you can do with this fruit, however, is to crush it into the ground so that it may not remain upon the surface to breed spores of mould, which may be transferred to other fruit and hasten decay. Cull oranges should not be buried in large masses, but should be scattered so that the fruit may come into contact with the soil and not decay in large quantity.

Tea and Silk Growing in California.

To the Editor:—I believe I can interest people in tea and silk growing in California. What do you think of the proposition?—Promoter, Los Angeles.

Silk growing has been agitated and to some extent undertaken nearly every year for the last forty years in California, but no one has made anything out of it. It will be impossible to compete with the cheaper labor in other countries, so long as our people can make a living in other pursuits which they like better. The same thing is true of tea. A very thrifty plantation of tea plants was made in El Dorado county before 1860, but was abandoned because it was impossible to pick the tea leaves and manipulate them in competition with the cheap labor of Asia. Although wages are much cheaper now than they were then, it is still impossible. There is no difficulty about growing tea in many parts of California, but there is the greatest difficulty anywhere to make it profitable.

Late Planting of Fruit Trees.

To the Editor:—Can I plant fruit trees as late as March, or should they be planted at the beginning of the rainy season?—Beginner, Sonoma valley.

If you can find dormant trees in the nurseries you can plant as late as March in your valley providing the ground is in thoroughly good condition and you take a little extra care of the trees after planting by mulching or frequent hoeing and by the use of a little water during the dry season, if the soil begins to dry out. It is, however, a safer proposition to plant earlier in the season and ordinarily February is a good month in your part of the State, although if the ground is not likely to become water logged by the heavy winter rains you can plant as early as December with good results. California has a long tree planting season, and when is the best time in any locality depends largely upon the local temperature, soil and rainfall. The nearer the coast, the heavier the rainfall, and the more retentive the soil, the later the planting may be.

Another Catechism.

To the Editor:—Will you kindly answer the following questions?—Reader, Visalia.

1. How would you plant and care for eucalyptus, corynocalyx, globulus and rostrata seed until they are ready to transplant?

Sow the seed in boxes with 3 or 4 inches depth of sandy soil not disposed to bake on sprinkling. Transplant the seedlings when about 3 inches high to other similar boxes, spacing them about 3 inches each way. Transplant to open ground when about a foot high. Keep the seed boxes in partial shade.

2. When and how should sulphur be applied to mildew on Muscat grape vines?

Sulphuring vines was discussed upon page 134 of last week's issue.

3. Does pruning Muscats after the sap begins to run injure the vines or crop?

It is better to prune earlier; but it is better to prune late than not at all. The free bleeding at the beginning of the sap flow is not as bad as it looks. The first flow of sap is nearly pure water.

4. In plowing a square piece of land, is there less turning in plowing in strips, or is it better to go entirely around for a while and then plow in strips?

It is more convenient to plow in strips, and that is the usual way.

5. Would you prune an almond like a peach, or would you let it grow higher?

We should do less pruning on almonds, not shortening-in much, but not allowing the tree to become too thick. It has been claimed that the almond would do better pruned more like a peach, but we are not aware that demonstration has been made.

6. What eucalyptus suitable for wood is best adapted to the foothill section of Tulare county, plenty of water being available till July 15?

Probably rostrata, rudis and viminalis.

7. Can rotted barnyard manure be applied to Muscat vines profitably year after year? If so, how and at what time of year?

You have to be careful not to overdo it. Apply on the surface at the beginning of the rainy season.

8. Should the sprouts on a Muscat that come out near the ground be pulled off? When?

Yes; as soon as you see them, and you should keep looking. The sucker should, however, be strong enough to take out a little bark at its base, so as to remove the latent buds which are formed there.

9. Do tubercles on the roots of lupine plowed under now and allowed to lie fallow till next fall help next year's crop?

Yes.

Coarse and Mutilated Oranges.

To the Editor:—We send some coarse and thick-skinned oranges from trees 12 years old. What can we do to reduce the thickness of skin and make it smooth? The soil is sandy loam mixed with clay. We also send some fruit in which the skin seems to be injured by fungus. What is the cure?—Grower, Butte county.

The fruit is overgrown and very flat in flavor. This deficiency in flavor seems to be due in part, at least, to the absence of the acid, for the sugar seems good; but sugar without association with sufficient amount of acid gives a flat flavor instead of an agreeable sprightliness. The excessive size of the oranges and their thick skin seems to be due to the fact that the trees are either in too moist and rich a place, or have been treated with too much stable manure. Trees of the age of this, not unduly stimulated, ought to produce a better orange—finer skinned and better flavor. If any fertilizer is used, it should be potash, and not nitrogenous.

The oranges which you say seem to be affected with some kind of a fungus growth, appear to us to have been only affected with a mechanical injury of some kind. A small scratch or rubbing when the fruit is small produces this unsightly appearance of the rind when the fruit is ripe.

Stocks for Fruit Trees.

To the Editor:—What kind of stock or stocks would be best to bud pear, apple, peach, plum, apricot and almond on? I wish to grow my own trees and cannot find any reliable data on this subject and where the stocks can be obtained.—Beginner, Yuma.

Peaches, plums and almonds can all be successfully budded upon almond seedlings, but the apricot must either be grown upon its own root, upon the peach or upon the Myrobolan plum, as it does not take kindly to the almond root. The pear and apple are usually root-grafted on seedling roots, each of its own kind. For stock you had better write to the nurserymen nearest to you who are advertising in our columns. Concerning the methods employed in growing nursery trees in California, the fullest information is given in our book on California fruits.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 6, 1905.

Alexander McAdie, Forecast Official and Section Director

Sacramento Valley.

Clear, warm and spring-like weather prevailed during the week, causing rapid growth of grain, grass and other crops. Grain is in excellent condition and gives promise of an unusually heavy crop. The acreage in grain is larger than last season's. Work in hop fields is progressing rapidly; the roots appear to have wintered well and the present outlook is good for a large crop. Alfalfa is making rapid growth. Green feed is abundant and stock are doing well. Deciduous fruit trees are in good condition and nearly all varieties are in bloom. Strawberries will probably be in market much earlier than last year. Work continues in orchards and vineyards.

Coast and Bay Sections.

Unusually warm weather prevailed during the week, with heavy fog along the coast and generally clear weather in the interior. All crops made rapid growth and are in better condition than at this time last year. Plowing and seeding are still in progress in some sections. The grain acreage is larger than usual and the prospects are good for heavy crops of wheat, oats and barley. Alfalfa has made a remarkable growth and excellent crops are probable. Hop cultivation is in progress in Sonoma county. Green feed is plentiful and stock are in good condition. Nearly all varieties of deciduous fruits are in bloom. The severe frosts in February killed some of the early fruit buds, but enough were left to make a good crop. Orange picking is progressing at Cloverdale and olive picking is nearly completed.

San Joaquin Valley.

Clear and warm weather continued during the past week, causing a rapid development of fruit buds and growth of grass and grain. Almonds are out of bloom and in some districts are leafing out. Apricots, peaches and plums are in full bloom. Plowing and cultivating orchards and vineyards are progressing rapidly. Both early and late sown grain is making rapid growth; in some places summer-fallowed grain is reported too rank. Alfalfa is making good growth and garden truck is well advanced. The snow has melted rapidly in the mountains and irrigating ditches are running full. Green feed is plentiful and stock are healthy and in good condition.

Southern California.

Light rain fell in many places at the beginning of the week and was followed by warm and clear weather, with drying winds. Grain made rapid growth and is in excellent condition in all sections, with prospects of the largest crop for many years. Green feed is abundant and stock are doing well. Alfalfa has made excellent growth and the first cutting will commence soon. The warm weather was very beneficial to oranges, lemons and grape fruit. Deciduous fruits are in good condition and making satisfactory progress. Many orchardists are increasing their acreage in deciduous trees.

Eureka Summary.—Warm weather prevailed during the week, with some fog near the coast. Gardening is general and progressing rapidly. Crops of all kinds are in excellent condition and promise heavy yields.

Los Angeles Summary.—Crops made fine growth under the influence of showers and warm weather. Green feed is plentiful. Prospects are bright for a good honey crop. Orange picking is active.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 8, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.09	23.12	47 02	31 04	78	46
Red Bluff	.00	25 35	21.15	20.06	82	48
Sacramento	.00	14.60	10 80	14.79	78	54
San Francisco	.00	16 92	13 68	17 91	80	50
Fresno	.00	8 02	4 00	6 52	84	48
Independence	.00	1 68	1.62	3 22	74	40
San Luis Obispo	T	16 33	8 70	15 78	82	46
Los Angeles	T	12 15	3 25	12 66	82	52
San Diego	T	10 69	1 96	6 37	76	58
Yuma	1.36	6.61	0.66	2 60	80	60

HORTICULTURE.

Great Injury to Oranges by Careless Picking.

To the Editor:—I desire to call your attention to the amount of fruit that is injured by the shears in cutting the oranges from the trees. After looking over a large amount of fruit as it is received in the packing houses in different parts of southern California, it is safe to say that an average of one in every five or six oranges has had the skin either badly cut or slightly punctured by the clippers. The cuts may be a quarter of an inch across, or so small as to be detected only by the most critical examination. There is a wide variation in the amount of injury in the fruit coming from different growers, and a difference still greater in the fruit picked by the different men. In order to bring these facts out clearly we give the percentage cut by the clippers in oranges examined from twenty-two representative groves in different parts of the State:

% 29.	% 22.5	% 11.9	% 28.3
18.8	16.4	13.1	24.4
28.8	28.0	11.0	8.3
8.0	35.0	12.0	16 7
10 6	19.0	21.0	15.0
	1 2	15 8	

To show the variations in the amount of fruit injured by different pickers, the following representative figures are taken from a record of fifteen boxes in a single load of fruit:

% 33.0	% 22.5	% 18.2	% 32.5
18.3	44.0	22.7	47.7
20.2	67 0	25.0	41.4
15.5	20.8	22.0	

This grower's fruit averaged 29% cut.

Another common form of mechanical injury results from cutting the stems long. We here give figures showing the percentage with stems cut long enough to do injury based upon the fruit of ten leading growers:

% 5.0	% 6.0	% 14.0	% 31.0
6.1	6.9	34.0	30 6
	17.0	11.0	

An equally wide variation is found in the fruit of different pickers.

A large proportion of the cutting is done by the most flagrant carelessness on the part of the picker, who is often encouraged to pick more fruit than he can handle carefully.

On the other hand, a good deal of this injury results from the use of pointed shears, the picker inserting the sharp points into the skin in the effort to cut the stem short. This type of injury is difficult to see, but we have found as much as 15% to 20% in groves in which a determined effort is made to make the pickers careful. In the groves showing 4.2% of cut fruit — a grove famous for the carrying quality and high price of the fruit — the use of a round, blunt shears is responsible in no small measure for the result.

Probably not 5% of this clipper cut fruit is detected as it passes through the hands of the grader or the packer. The prominent gashes only are seen. The remainder of the injured oranges, of course, do not all decay, but the injury makes them particularly susceptible to rot from blue mould, if the conditions become favorable at any time for its development. In our experiments, as much as 40% of the cut fruit has developed decay under ordinary conditions, while uninjured fruit under similar conditions has shown less than 1%. The essential conditions for this decay are that the spores of the disease be present, that there be sufficient moisture, and a temperature high enough to germinate them and to make them grow, and a weakness in the skin of the orange through which the disease can enter. If any one of these factors is wanting there is slight chance for the orange to decay from this disease.

A fundamental requirement either for successful shipping, or storing, is sound fruit. Mechanical injuries of this nature render the oranges liable to decay in warm weather, and account for no small part of the trouble that arises when the fruit is on the way across the continent. There are other factors that favor decay, but a bruised orange that becomes infected with disease may rot in spite of the best conditions that transportation now provides.

This statement is in keeping with the results of the Department of Agriculture in its fruit storage investigations where it has been found that a very large proportion of the losses in cold storage is the direct result of the bad handling of the fruit before it enters the warehouse.

In order to bring the matter out for discussion we suggest several ways by which clipper bruising and long stems may be reduced:

First—By using shears with blunt ends or protected ends, or by rounding the ends of pointed shears already in use.

Second—By making the conditions favorable so that the quality of the picking rather than the quantity may be the prime consideration with the picker.

Third—By adopting a system of ticketing the boxes of individual pickers in order that the persistently careless picker may be eliminated. We have found as much as 65% of cut fruit in some boxes and 1% in others in the same grove.

Fourth—The individual grower, the packing house, or a combination of packing houses could employ bright young men to inspect the fruit in the groves, or the fruit of different growers coming to the packing houses, in order to locate and follow up the careless and the shiftless picker, as well as the grower, and to suggest practical means of evercoming the trouble.

In conclusion, we would suggest that every orange grower take twenty-five boxes of his own fruit, and that every packing house manager take as many boxes of fruit from different patrons of the house, and determine by critical inspection of every orange the amount of fruit cut and having long stems.

These troubles cannot be judged by a casual estimate nor by the critical inspection of a single box of fruit. Observations of this kind would lead the grower to think that he did not belong to the class brought out in some of the figures given above. It takes a quantity of fruit and sharp eyes to make an accurate determination. G. Harold Powell,
Pomologist in Charge Fruit Storage Investigations.
Riverside, Feb. 27.

THE DAIRY.

Dairying in California.

Mr. Frank M Selover of Santa Barbara writes for Hoard's Dairyman a sketch account of dairying in California which will be entertaining to many of our readers who are enjoying the advantages described.

The Call to California.—There is undeniably a magnet in the western hills that draws strongly upon the sentiments of the easterner; on some more strongly than upon others, but in nearly all it creates a desire at least to see beyond the horizon of their own localities. It is the same longing, perhaps, that brought the colonists across the seas to wider fields; that caused them and their descendants to penetrate farther and farther into the hostile wilderness until, acre by acre and mile by mile, the great middle west was opened up and developed.

Of course the colonist brought his cow, and the patient brute was still with him as he journeyed westward. It is presumable that the cheering clang of the cow bell made the primeval forest seem more homelike; though, more than likely, the bell was muffled as the redskins drew near. But civilization without the cow is not to be imagined.

The cow is no new institution on the Pacific coast. She has been doing business here ever since the first pioneer American roped the sister of the native steer, and with her head tied securely to a post, her body braced solidly against an adobe wall, and all four feet leashed and bound, compelled her to give down the life-sustaining fluid into a pail! The native cow rebelled against this indignity and won! The progressive American wearied of his undertaking. Once it was a novelty to rope and bind a wild cow and milk her. It was not so bad twice; but when it came to a steady job the fun ceased. Improved stock was thought of, and the action followed the thought. Perhaps this accounts for the general high standing of the California thoroughbreds. It does not pay to ship a scrub so far.

The Outlook.—Dairy interests are capable of great development on the Pacific coast, and this development will not be confined to any particular section or State. Each locality has its advantages; some localities have more advantages than others, and there is no locality entirely free from the general problems that everywhere beset the dairyman and require of him an intelligent appreciation of his responsibilities, as well as a lofty conception of his privileges and powers.

California, it may be said without undue enthusiasm —it is certainly no new discovery—possesses peculiar claims as the ideal dairy country. The climate has neither the enervating influence of the tropics, nor the rigorous tendencies of the Northland. A great secret of dairy success admittedly lies in the ability of the dairyman to provide for the comfort of his beasts. In the northern winter, his cows must fight the cold at the expense of milk; and in the tropical summer, they fight the heat at the expense of both milk and vigor. Some of the greatest horses and some of the greatest athletes have been given the world by California, because conditions here tend to the highest physical development, with no waste of constitutional power in the mere keeping together of soul and body. The food that goes into fuel to warm the Wisconsin cow in winter would go to milk if the same cow were wintering in California, and this cow and her offspring, necessarily more or less confined during several months of the year, would here be allowed full freedom from one season's end to another.

One must see in this the advantage of such location to the breeder of fancy stock. This branch of the dairy business, while not wholly neglected, all standard breeds having notable representation on the coast, should be more widely developed, and it will be. Experience with importation of stock from Europe, New England, Canada and other northern lands, has proven the ready adaptability of each breed to the changed conditions, and should encourage continued importation. In reality, Eastern breeders should find west of the Rockies a fertile field for their endeavor, worthy of faithful exploitation.

California Conditions.—The first desire of the Californian, who would tell his Eastern brother of the Golden State, is to impress upon the absent mind the immensity of this commonwealth. One New England breeder who wrote a California correspondent that he would be in San Francisco on such a date and hoped the Californian would drop over and see him, did not realize that the "drop" would be some 400 miles, and that it required more than the six hours' notice allowed to prepare for and make the trip.

Of locations, the dairyman who would come to California has the choice of a thousand. His fancy may certainly be satisfied, if he would but look around. If he is a butter or cheese man he will consider most important the location providing easy and cheap feeding and a proper market; nor need the market trouble him if his article is a good one. With hundreds of carloads of dairy products brought into the State annually from Illinois, Wisconsin and other older dairy centers; and with an awakening world along the further border of the Pacific calling upon California for a large portion of its supplies, there should be no fear of a failure in the demand. But in the essentials of feeding he will wisely consider two points—alfalfa or natural pasture. The preference of the writer is for alfalfa as the basis of feed for heavy milk production. Natural pasture under favorable conditions may be more economical, but taking dairy performance into account, and it is only the net profit that should interest any producer, alfalfa, properly balanced, would be cheaper in the end—that is, where it can be economically produced. The two elements entering chiefly into this, in California, at least, are soil and water—water really more than soil. We look a little askance, more amazed, perhaps, than doubting, upon discussions concerning soil bacteria as a necessity to successful alfalfa culture as it is practiced in Eastern States, when we know that ordinary soil will produce all the alfalfa that could be desired to the acre—when the water does not give out.

In the northern coast counties and along the coast of Oregon and Washington, great dairy regions, and greater as we contemplate and estimate the future, the natural pasture is the chief feeding asset. From a distance, and the writer hereof looks upon those districts from a considerable distance, it has a good look, but from actual observation the conclusion can not be withheld that good cows, a good alfalfa field and a good and sufficient water-right in connection, all in the sunny California clime, form as good a combination as any dairyman could wish.

These observations do not take into account the retail milk business, such as that in which the writer has been engaged, for conditions around the important cities and resorts vary greatly and local market rates are independently created, according to cost of feeds, and the care given the product as demanded by the trade.

THE IRRIGATOR.

Cost and Value of Irrigation in California.

For several years the Office of Experiment Stations of the U. S. Department of Agriculture has been carrying on irrigation investigations in the State of California in co-operation, first, with the California Water and Forest Association and later with the State itself under an appropriation made for this co-operative work. This work has included the collection of information as to the quantity of water used in irrigation, pumping water for irrigation, tests of pumps to determine the most efficient types and best conditions for their operation and tests of various kinds of fuel to determine which will produce the largest results from a given expenditure. Another line of investigations has been studies of the best methods of preparing land for irrigation and applying water to crops, experiments to ascertain the absolute water requirements of plants and studies of economic and business questions connected with canal management, in order to determine what form of organization will bring about the most just and economical distribution of the water supply.

A preliminary report of this co-operative work has just been issued by the Office of Experiment Stations of the U. S. Department of Agriculture as Circular No. 59 of that office. A large number of pumping plants have been tested to determine their efficiency and the cost of raising water. This circular gives the reports of a number of these tests, the final result in each case being given in the form of the cost of fuel for raising water 30 feet to cover one acre of ground to a depth of 18 inches. Under the various plants reported on, this cost varies from 90 cents to $3.60.

Laboratory tests of typical pumps have shown that for every speed of pump there is a definite head at which each pump works at its highest efficiency

and that there is a definite speed which is most effective for the operation of the pump under a given head. The table which follows shows the heads under which one pump tested gave the greatest efficiency with the given rates of speed:

EFFICIENCY OF PUMPS WITH DIFFERENT SPEEDS AND HEADS.

Revolutions per Minute.	Most Efficient Head. Feet.	Efficiency. Per Cent.
500	17.0	63.2
696	25.4	67.6
800	28.5	69.8
893	40.6	70.9
1,004	51.4	69.4
1,102	61.3	68.9

Further laboratory tests were made to determine the most efficient position for a pump when water is to be raised a given height. That is, what division of this head between suction and discharge gives the best results? The test showed that with a lift of 40 feet efficiency increased as the pump was placed nearer the water supply.

Data were collected from a large number of owners of pumps regarding the amount of water used and the cost of raising it. The reports from twelve of these pumping plants show an average depth of 1.24 foot of water applied at an average cost of $6 per acre. The gross returns from twenty-four orchards irrigated with water supplied from pumping plants averaged $136 per acre.

Measurements of the losses of water by evaporation were carried on at Tulare, Pomona and Calexico. The total for the twelve months at Tulare was 74.68 inches, at Pomona 66.62 inches and at Calexico 108.23 inches. At each place the greatest evaporation occurred during the months of June, July and August.

With a view to discovering means for checking this great loss of water, investigations into the causes of evaporation have been carried on. An experiment was made to determine the effect of heat upon the amount of water evaporated. The water in tanks exposed to like conditions was kept at different degrees of heat. The following table shows the results in weekly losses:

WEEKLY LOSSES FROM EVAPORATION AT DIFFERENT TEMPERATURES.

Temperature of Water. Degrees Fahrenheit.	Evaporation. Inches.
55.5	0.42
62.0	0 77
66.8	1.54
80 1	3.08
89.2	3 92

The table shows that water with a temperature of 89.2° lost almost ten times as much as water maintained at a temperature of 55.5°.

The circular states that experiments to determine the evaporation of water from soils were also made, but results are not yet compiled.

The effects of applying water by different methods on the quantity of water lost by evaporation were made also. Three methods were tested: (1) Applying water by surface flooding; (2) applying water in shallow furrows; and (3) applying water in deep furrows. The results show that much less water is lost when it is applied in deep furrows than by either of the other methods, and that the greatest loss comes from applying water to the surface. The circular contains comparisons of various methods of applying water to land, giving statements of the advantages and disadvantages of each method and its applicability to different conditions.

The relative merits of irrigated and unirrigated fruit are discussed. The general conclusion is that irrigated fruits are superior in quality, are better for canning and for drying.

This circular is a preliminary report of the work done in California under the co-operative arrangements described above. A full report of the work is being prepared and will be published during the present year as a bulletin of the Office of Experiment Stations.

THE APIARY.

Comb Honey and Separators—Foul Brood.

By Prof. A. J. Cook, of Los Angeles county, in the American Bee Journal.

In the production of honey I always took most delight in working for the comb. It always seemed to me that nothing was more beautiful than a perfect specimen of clear white comb honey. This is specially true when the combs are uniform, smooth and well filled. I have succeeded many times in securing whole supers where every section was almost perfect, and this without the use of separators at all. I think this usually comes when the colonies are very strong and the harvest is bountiful. The bees seem to rush the honey in to the hive, and if sections are put in either with starters or full sheets of foundations, these are carried on together and uneven combs are rarely produced.

I often found, however, quite a different state of things. Some of the combs would be thicker, and there would be a general lack of uniformity. Indeed, this unevenness was so great, or frequent, that in my own experience I decided that it was never wise to strive to get along without the separators. It did not matter much whether these were of wood or tin. While this was true in my own experience, I have known some beekeepers who are astonishingly successful in securing these almost perfect sections without exception, yet these persons never used separators at all. Thus I was led to say that it was possible to get good sections without separators, but that I found it better to use them. I was much interested to find how many there were who, like myself, found they could not produce satisfactory results without the use of these valuable aids in comb honey production.

Indeed, I have always considered that the securing of a fine crop of excellent comb honey each season was the best test of skill and proficiency in the art of beekeeping. Almost anyone can secure extracted honey, and, for the novice, or one who does not study to attain the best in the art, it is perhaps always wisest to work for extracted honey. The advantages in working for comb honey are: A much more beautiful product—and there is much joy in producing the beautiful; the producing of that which brings a much higher price in the market; and the fact of knowing that we have reached the highest skill of the art. The two handicaps in comb honey production—I might say three—are, frequent failure, always securing a much less quantity, and the fact that it is much more difficult to ship comb honey.

The California beekeeper finds this last point one that materially concerns him. He must ship carloads of his honey for thousands of miles. In case he produces extracted honey he can do this with no fear of loss or disappointment. This alone will always make extracted honey a favorite with the apiarists on the Pacific coast. The difficulties in the way and the invariably lessened production makes it imperative that we secure at least double that for comb honey which we might expect for extracted, the quality being the same in each case.

The requisite, as I take it, to the best success in the production of comb honey is to have our colonies very strong at the dawn of the season. This may, and often will, require stimulated feeding. I would always have the supers in place at the very commencement of the honey flow. It is an advantage, also, if the swarming is past for that season. In case the latter is not true, we attain the same results by working for very strong colonies. If necessary, we can unite to accomplish this.

I do not think that any one who works for comb honey can afford to dispense with foundation. I always reach the best success with thin foundation, and while I often use full sheets, I do not find that this is necessary. Neither did I ever find very great advantage in using starters both above and below in the section.

In case the apiarist produces extracted honey exclusively, there is little to be said, except, of course, it is always desirable to keep one's colonies strong and in the very best thrift. I do think, however, that it is generally best not to extract until the bees commence to cap the honey. No one can ever afford to put thin or unripe honey on the market. Such honey is very apt to ferment. It always lacks body, and is always deficient in flavor. It is true, however, that I have produced very excellent extracted honey which I removed from the combs before it was ripened—but in this case it was kept for a long time in a warm room, in rather shallow vessels, and thus evaporation continued even after honey was taken from the comb. The evils arising from marketing unripe honey are so great that no one can ever afford to be guilty of such misdoing.

Foul Brood Law in California.—We are having a controversy in two or three counties of California over the matter of bee inspectors enforcing the foul brood law. We probably have as excellent a law as any State in the Union. This law makes it the duty of the supervisors, upon the receipt of a petition of a certain number of beekeepers, to appoint a foul brood inspector, whose duty it shall be thoroughly to inspect all the apiaries of his county, and in case foul brood is present to eradicate it. The inspector is well paid, and, as the supervisors have no object to do other than the best for their constituents, competent men have usually secured.

The difficulty in the matter comes from the fact of our "off years" in the State. The past season there was no honey gathered at all in most localities. Men who are not very well informed regarding foul brood are loth to pay for treatment when they see no chance for gain ahead. The inspector, too, knows how ready bees are to rob from each other when no honey is being gathered; knows also how dangerous it is to work with bees at such times, from the fact that robbing is so likely to be induced, and so is quite likely to decide that he will do nothing at all; and he finds that the most of his beekeeping friends are quite willing that he should desist from treatment. We should remember, however, at such times that the possibility—nay, probability—of robbing brings great danger into any community where there is any foul brood at all in existence.

First, the enforced idleness of the bees makes them ever ready to plunder the other and weaker colonies. The colonies infested with foul brood are almost certain to be weak, and thus we have every condition for the rapid spread of this serious malady. It seems to me it is much the wiser course to eradicate the disease entirely during this let up of the honey flow. Yet it is certainly true that the foul brood inspector must exercise very great caution or he will get the bees to robbing and surely make a bad matter worse. It is, however, perfectly easy and practicable, by spreading a canvas beneath the hive and surrounding the latter by a good bee tent, to make all necessary examination with no trouble from bee stings, no danger of robbing, and no scattering which would otherwise induce robbing and very likely scatter the germs of the fell disease which it is the purpose to destroy. Just two things are necessary: A wise, competent inspector, and most careful manipulation.

ARBORICULTURE.

Growing the Eucalyptus in San Diego County.

Mr. J. H. Dodson of El Cajon deserves thanks for his frequent declarations on the eucalyptus. In our issue of October 22, 1904, we printed an essay read by Mr. Dodson at the University Farmers' Institute at El Cajon, and we give herewith a supplementary statement prepared for the Valley News of last week:

While each kind of shade tree has its own peculiar merits, and I will own to a special fondness for the live oak, the camphor and some varieties of the acacia, I doubt if, all things considered, any single family of trees can be found that will combine more good points than the eucalypts, providing, of course, good judgment is used in selecting the varieties.

Before planting any tree in the yard, however, one should consider the local climate, soil, hardpan and depth of water, as well as the effect the proposed tree will have upon other trees and plants in the yard.

It should be remembered that the large, rapid growing varieties will take more room and sometimes their roots may play havoc with sidewalks, wells and cellars, if placed too near, and if there is not sufficient room by all means plant a smaller growing tree. Then, too, a different tree is needed for planting in front of a window (where the view is desirable) from that used to form a screen for shutting off objectionable sights. Different kinds of eucalypts have quite different habits, different colored foliage and different flowers. Some varieties have persistent bark while others change their clothes so often as to keep the yard littered up. Some eucalypts, by reason of broad leaves growing closely together and in a horizontal position, make a dense shade, while other kinds with small leaves scattered loosely over the tree, growing in a vertical position, prove but a slight obstruction to the sun. A tree growing 100 feet high without a single limb for the first 80 feet may prove a splendid shade tree for your neighbor, but worthless to you for such purposes.

If you want a single specimen you will select a different tree from that to be used in a group, and the different colored foliage will prove a fine field for the study of color to those who are interested in landscape gardening.

I do not pretend to be acquainted with one-half of the eucalyptus family, and have not space to more than mention the few that I do know, so that the following will no more than mention a few points possessed by trees that to me seem among the best for planting in and about the yard.

As the sunshine in winter is fully as desirable as the shade is in summer, I doubt if it is ever best to plant eucalypts very close to south side of the house, especially as there are so many deciduous trees like the Mexican ash, the mulberry, plane tree and others that furnish a splendid shade in summer and throw away their leaves in winter when they are not needed.

Sometimes a certain kind of eucalyptus appears unsatisfactory as a yard tree, because it has not been properly staked up in starting, and it should be remembered that wonders can be accomplished by the skilful use of the pruning shears and saw.

One of the best known ornamental eucalypts is the Ficifolia, which produces large scarlet flowers from the first of August to the last of September.

This tree rarely grows more than 25 feet high, is of spreading habits, has a large shiny leaf something like that of the rubber tree, and has persistent bark. It is rather tender of frost and does not endure drouth well, but can be raised in most places in El Cajon valley. Specimens of the Ficifolia may be seen on the grounds of J. R. Caldwell; also on the Cooms place.

The Calophylla closely resembles the Ficifolia, the great difference being that this tree has a white or creamy blossom instead of a red one. Both of these trees are valuable for bee pasture, and the Calophylla is said to produce excellent timber in Australia, but the rate of growth is too slow to warrant planting it for timber in this country.

The Eucalyptus Sideroxylon produces a beautiful pink flower in February and March. This tree never gets very tall, but will stand considerable frost and drought.

The bark is hard and persistent and of a very striking appearance, usually being of a dark red color, and contrasts very prettily with the beautiful little silvery leaves that hang so gracefully. The form of the top is good, and the Sideroxylon is cer-

tainly one of the prettiest of the gums. The wood is valuable, but the rate of growth is slow. A good specimen can be seen on the grounds of Mr. Judson in El Cajon valley. I know of one in the San Diego park and several in private grounds in San Diego, but do not know of any others growing near El Cajon.

The Amygdalina is another favorite tree, but little known here. In Australia it is known as the largest of all trees, but in America it is classed among the smaller trees. The trunk is straight and slender. The smaller branches droop in a willowy manner. The bark is usually, though not always, persistent.

The blossoms are small, creamy flowers, borne in clusters at the ends of the twigs, during December or January, and make the tree look like a mass of bloom. This tree is naturally a moist land tree, but two or three specimens have done fairly well on the Ballentyne ranch in El Cajon with no irrigation. It is a pretty tree for roadside planting, but does not give much shade.

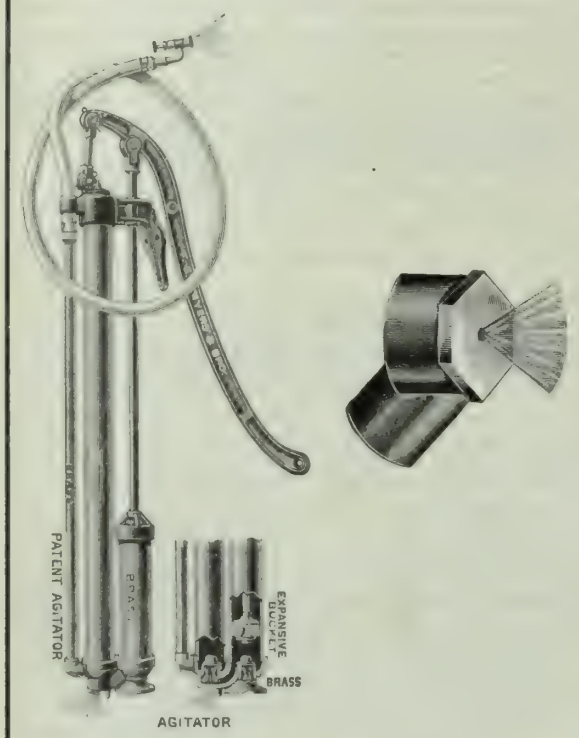
The Citriodora is a tall, straight tree, with very light, smooth, deciduous bark. The leaves are of a light green, the flowers a creamy color, quite abundant and very conspicuous.

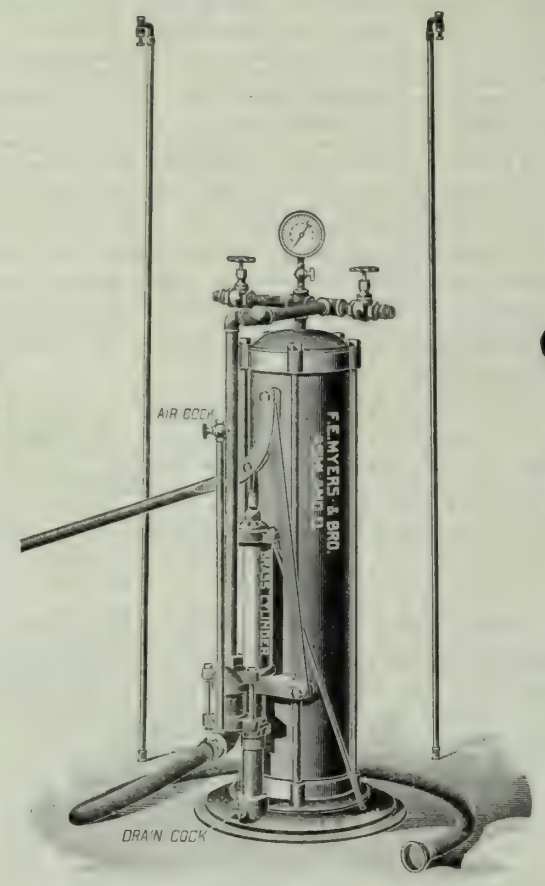
While the tree is very pretty, it is too tall to make a good shade tree. It is very tender of frost and plantings made near the village of El Cajon have been killed the first winter, but does well near La Mesa and a good many can be found in San Diego. The only specimen I know of near El Cajon is on Mr. Judson's ranch.

The Polyanthema is a fine shade tree, which, while graceful in habit, is also one of the hardiest trees of the gums. The foliage is of a silvery gray, the bark persistent and the flowers dainty.

There are quite a number of other eucalypts that I have learned to love, but which I have not space to describe at present.

1905-SPRAY PUMPS-1905







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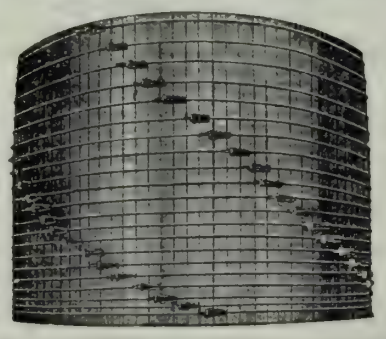
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Agricultural Review.

Butte.

HAYING ON MARCH 1.—Chico Record: Parties driving on the river road recently were treated to a very unusual sight for the first of March, in this or any other locality. In the field attached to the Chico nursery, hands were busily engaged in cocking hay of this season's growth, which had been cut a couple of days before. The hay was a volunteer growth, principally of rye, of good length and apparently a good quality of the kind. There are between eight and ten acres in the hay field.

MANDARIN LEMONS.—Biggs Argus: H. A. Battelle, owner of a fine young orchard on the Rio Bonito colony tract, situate about 2 miles east of town, and who is one of the best posted and most successful fruit growers in this section, has thoroughly demonstrated the adaptability of the soil and climate here for the successful production of the Mandarin lemon, a fruit which so closely resembles the orange of the same name that the difference is only detected in the flavor of the juice. Mr. Battelle imported the nurselings and now has growing on his place four trees in full bearing. The fruit, about the size of the ordinary Sicily lemon, is intensely sour and of peculiarly pleasant flavor, delicious in lemonade. The trees are prolific bearers, and neither tree nor fruit is affected by frost nor freeze.

RIPE BLACKBERRIES AND PEARS.—Oroville special to Sacramento Bee, Feb. 27: Picking Bartlett pears in the middle of the winter is not an achievement many localities can boast of, but it is true of the foothills just above Pentz. All winter a tree on the George Taylor place has had pears on it, and last week some fine, delicious, ripe Bartlett pears were picked from it. Near the Taylor place, on the Merifield ranch, there are at the present time ripe blackberries. These places are about 16 miles from Oroville and well up in the foothills.

ORANGE GROWERS PREPARING TO ORGANIZE.—Oroville special to Sacramento Bee: A committee, composed of E. W. Fogg, J. C. Hussey and G. W. Miller, met Saturday and agreed on a plan of organization for the orange growers of Butte county. It is proposed to organize two associations, one to be called the Superior California Growers' Association and the other the Packing House Association. The object of the latter is to hold title to the packing houses, etc., which it will leave to the former. The object in this plan is to make sure that no matter what may turn up the orange men will own their packing houses. The committee is meeting with most encouraging success. It is reported that the meeting to perfect organization will soon be called.

Contra Costa.

THE FIRST ASPARAGUS. — Antioch Ledger, Feb. 25: W. E. Meek made the first shipment of fresh river asparagus Thursday morning. Four boxes were hurried off to New York and Boston. The shipment was made in crates specially constructed for the purpose. The grass is shipped in large bunches, the thick part or bottom of the stalk resting on moss that has been thoroughly wet with water. This will preserve the grass crisp and fresh, and it is just as fresh in the Eastern market as here in California. The California product is much in demand in the East and handsome prices are realized. Mr. Meek has a force of men and girls here now who will pack the season's crop and it will all be shipped to the Eastern market by express, and as soon as the crop increases enough, shipments will be made in refrigerator cars.

Glenn.

GERMAN COLONISTS.—Orland Register: A colony of the German Baptist Brethren who visited this county recently have purchased through Eibe & Prouix a tract of 2000 acres of the Parker ranch, situated on the river east of Willows. There were fifteen men in the crowd, all of whom hail from Los Angeles. They will soon locate on the grant and begin the construction of homes which are to be built on modern plans. They will soon begin to erect a house of worship. These people are very religious, hard workers and sure to make a success of the venture.

Los Angeles.

ORANGES.—Monrovia Messenger: Reports from the several packing houses are favorable, and are to the effect that since fruit is holding up and shipping well, marketing will extend over a longer period than usual, with a steady upward tendency in price. There is considerable puffy fruit, but care is being exercised in picking and shipping it before it becomes too bad. The percentage of culls, as compared with the preceding years, is very small. In the main, fruit is clean, smooth, firm and of excellent quality. In none of the houses has any washing been done this year. The scutellista has saved the farmers thousands of dollars, since, in some years past, 60% of the crop has been washed because of the black scale. As the oranges mature and the skin becomes oily the dirt sticks more and later in the season some washing may be necessary, but only for a small portion of the crop.

CRIMSON RHUBARB A GREAT CROP.—Times: Crimson rhubarb has evidently come to stay. Mrs. T. B. Shepherd has been experimenting with crimson rhubarb introduced from Australia by Luther Burbank. Mrs. Shepherd has about an acre of the plant about town on the various vacant lots. From these patches she has shipped an immense amount of the plant stems to market. Last week she cut 1200 pounds of the stems for markets in Los Angeles, Fresno and Ogden, Utah. In the past month, or since the plants matured and got to bearing, she has cut and shipped two and a half tons of the stems, and the demand is growing constantly. She receives $5 per hundred for the stems, and of this amount pays about one-fifth for harvesting and boxing.

San Luis Obispo.

GREAT BUTTER TOWN.—Tribune: Indications are quite unmistakable that this will be a most profitable season for the dairymen, and a close chase to the best season ever known in this section. The price of butter last shipping day averaged about 26c net per pound, while as high as 27½c was paid for a few favorite brands. The shipments of butter by all out-going steamers amounted to 138 boxes of 120 pounds each, and 700 pounds in tubs—a total of 17,260 pounds, which at the ruling average price made a net yield of $4487.60 to the dairymen for their product. The skim milk goes into calves, chickens and hogs, which also command good prices.

Santa Clara.

CUCUMBERS IN DEMAND.—San Jose Herald: Lew I. Bay, local agent for the Wells-Fargo Express Co., received a telegram from the commission firm of G. A. Bowen & Co. of Seattle, Wash., requesting that he put them in communication with a grower who could supply them with five dozen fancy hothouse cucumbers at once. Mr. Bay telephoned to a local grower. The grower replied that he was under contract with a big San Francisco commission house for all his produce. It is more than likely that the order will not be filled here.

OVER EIGHTEEN POUNDS OF RADISH.—Los Gatos Mail: On the 22nd of last May T. W. Ellis planted some radish seed in his garden on the Shannon road. They were little bits of seeds and he wasn't sure of getting his money back on the packet. But the radishes grew and grew. He brought one big black fellow, a regular winter radish, to the Mail office Tuesday. A portion of the root was broken off, but what was left of it measured 3 feet 11 inches from top of foliage to bottom of radish, and weighed 18¼ pounds.

Sierra.

NO MORE COUNTY TAX ON SHEEP.—A dispatch says: A decision has just been handed down by the United States Supreme Court which is of much importance to several of the counties in northern California, and refers to the sheep ranging in the different counties. The cases are those of Sierra county against Wheeler and Ridenour and Plumas county against P. L. Flanigan. All the defendants are well-known sheepmen and the judgment of the court gives the case to the defendants. This means that the counties of the State can no longer charge the tax of 10 cents per head upon all sheep and lambs which go from one county into another. The sheepmen refused to pay the tax and a long suit was the result.

Sonoma.

RECEIPTS OVER $2000.—Healdsburg Enterprise: The citrus fair at Cloverdale last week was a great success in every way and was the banner fair of all. The gross receipts were over $2200, and after expenses are deducted a snug sum will be carried over. The Association has money in the bank, and with this year's profits they ought to be in a position to enlarge the pavilion. This is important and is due the people that they may be furnished better facilities to move around the building and see the displays. The enlargement question is being favorably considered, and there is no doubt that next year's fair will see a large addition to the building.

SUCCESSFUL PRESERVING COMPANY.—Democrat: At the annual meeting of the stockholders of the Sutter Preserving Co. of this place, held Tuesday, the financial report of the secretary and treasurer shows that the year's business gave a net profit of $1773.60. This showing was made with the goods on hand being marked down much below the market value. This is certainly a good showing. R. W. Skinner, T. F. Ciblin, G. E. Wapple, C. E. Littlejohn and A. H. Hewitt were elected directors for the ensuing year.

BIG RANCH SOLD.—Santa Rosa Press-Democrat: Illingsworth Bros. have sold their 800-acre farm and stock to Mrs. J. Miller, the price being $100,000. This property is one of the best in Sonoma county and comprises 200 acres of choice bottom land, suitable for hops, while the balance of the ranch is all level land, suitable for fruit and vines. Mrs. Miller will probably plant out 150 acres of hops and also put in a large acreage of vineyard.

Stanislaus.

RUST FORMING ON GRAIN.—Modesto News: It is reported that rust is forming in the heavy grain in certain portions of Stanislaus county. The farmers are hoping for a cessation of fog and heavy dews for a period and for drying winds. These conditions would arrest the spread of the rust, which has not yet reached a stage sufficient to damage the crop.

Tehama.

SHEEPMEN SMILING.—Corning Observer: Sheepmen in the southern part of the county have had exceptionally good luck with their flocks during the winter, owing to the mildness of the weather and the plentiful supply of feed. The increase in lambs will average about 100%, which is far above the ordinary. In addition to this, fortune is smiling upon the owners of the flocks in the way of good prices for wool, which bids fair to bring over 20 cents a pound.

MUCH GRAIN BEING SHIPPED.—The heavy shipments of grain from the Corning warehouses for the past month have kept Bion Mills and his assistants busy loading it. Instead of being sent to tidewater for foreign shipment, the greater part is being consigned to points on the Pacific coast for home consumption, indicating that the supply is short and bids fair to help strengthen local prices. The last few lots have been sent to Arizona, Los Angeles and Chico.

HIGH PRICES FOR WOOL.—Red Bluff Cause: The sheep and wool men are in clover. They are now right in the midst of their lambing season and expect to save 90% of their lambs, if the weather holds out. Wool men believe they will receive 25 cents for their wool this season. This is the highest price that has been quoted here for years. That there is some foundation for this belief lies in the fact that many have been asked to sign a contract to sell wool for 20 cents.

Tehama

PIGS IN THE CORN.—Red Bluff special to Sacramento Bee: The question of whose hogs ate Dr. W. W. Parker's corn came up before Judge Ellison in the Superior Court on appeal from Justice Simmons' court at Tehama, where both parties to the suit reside. The defendant in the action, who has appealed the case, is Hugh Mooney, a pioneer resident of Tehama county, and in the lower court he was mulcted for damages in the sum of $150, the amount claimed. The defendant claimed that his hogs are not the only hogs in Tehama, and that the plaintiff did not prove his case, because he only saw a few animals bearing the Mooney brand in the corn. The plaintiff's son swore that droves of fifty hogs swarmed on the Parker cornfield at a time, and all those he could see bore the Mooney earmark. He declared he had counted 27,185 cobs from which the hogs had eaten all the corn, and estimated 154 ears would weigh 100 pounds.

Ventura.

LIMA BEAN OUTLOOK.—Oxnard Courier: From one of the best posted men on the Lima bean question in the county, we learn that the acreage this year promises to be much in excess of any previous year. Up around Bardsdale and many other places where Lady Washingtons and Black-eyes have heretofore been given the preference, very little but Limas will be planted this year. With a favorable year from now on the crop will be somewhat enormous. The price, though, has not been affected so far to any extent by the big promise and futures are taken by some of the Oxnard buyers readily at 3 cents per pound. This seems high with the outlook for a crop. It is more than was offered last year in the face of a very light crop. Three cents a pound is a good price for the grower in a good year, as he has no storage or insurance costs to pay and can get his money the day the beans are delivered to the warehouse. It looks now as though this would be the best year Ventura county ever experienced.

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The Engine's Song.

Through city and forest and field and glen
I rush with the roaring train;
My strength is the strength of a thousand men,
My brain is my master's brain.

I borrow the senses of him within
Who watches the gleaming line;
His pulses I feel through my frame of steel,
His courage and will are mine.

I hear, as I swerve on the upland curve,
The echoing hills rejoice
To answer the knell of my brazen bell,
The laugh of my giant voice.

And, white in the glare of the golden ray
Or red in the furnace light,
My smoke is a pillar of cloud by day,
A pillar of flame by night.

—Arthur Guiterman.

"Why."

There is a curious game called "why."
To play it wise men vainly try.
We start it at our very birth
Nor quit it till we leave this earth.

When first the sun makes glad the eye
We blink and wail and wonder "why."
What is the secret of success?
E'en they who have it blindly guess.
Why do the winds flow softly by?
Why are the stars set in the sky?
Why are the flowers, fresh and sweet,
Scattered profusely at our feet?
Why is it that mere gold can buy
The good that toil will oft deny?
We strive to solve and strive in vain
The secrets of life's joys and pain;
We love, we lose, we laugh, we cry—
'Tis all in the great game of "why!"

—Washington Star.

The Girl He Loved Better Than Life.

That fellow Yves had never known what it was to have a mother or father, much less a single friend; he was a child of chance, and his name did not figure upon any civil service register. With him, the most important fact was that he was strong; his two arms were all he had to keep him from starvation. He was beautiful, but he did not know it, nor would he have cared if he had; his regular features and proud carriage told of noble blood. The men in the village hated him because he was a stranger and because his courage was greater than their own, and they were jealous, too, because his good looks pleased the women. Both men and women feared him. Why, he did not know or care.

Yves lived in a stone cabin that he had built himself. During the winter, when the fishing season was at an end, he carved little boats and playthings that he sold during the season to the tourists. And because he never spent his money getting drunk at the tavern, the villagers called him stingy. Furthermore, they hated him because one terrible night, during the equinoctial gale, when not a single sailor dared to go out, Yves went alone in his light boat to the rescue of a schooner on the rocks. After this, their hatred redoubled, but hatred is not enough to kill a man who desires to live.

One evening, three years after the rescue of the schooner, Yves was alone in his cabin, when he heard feeble cries outside his door. It was in winter and a cruel north wind was making the snow flakes dance in great white swirls on the cold beach. Yves opened his door. Crouched upon the sill he saw a woman and a little girl, huddled closely together and moaning painfully. Yves carried them into the house, and, piling the wood upon the fire, prepared a great bed of sea weed for them in one corner.

But the woman had suffered too long from the lack of food and the cold. Early the next day she died. Then that fellow Yves adopted the little girl, a frail figure of 13, with big pleading brown eyes. Her name was Margariton.

After this winter night a new life began for the lonely Yves. To him Margariton became a whole family—she was society; she was his daughter, his sister, his companion, his friend, she was his idol before whom he prostrated himself in perpetual adoration. There was nothing too good for her, and the money he had earned so painfully was scattered gladly for the finest stuffs for her dresses and beautiful lace and gold chains. Margariton might well have become selfish in the midst of such loving worship, but there was no room for aught save grateful affection in her warm little heart.

Not far from their cabin, the rocky cliffs, sloping gently on either side, made room for a tiny beach of finest sand, where, in one corner, rose a stream of purest water.

One summer afternoon, Margariton, her pitcher poised on her head, was following the narrow path that led to the spring, when she heard a voice calling to her. Turning, half frightened, she saw a young man, an artist, sitting on the rocks before his easel.

For a moment the painter stood lost in admiration at the beauty of the girl before him; then, as she was about to hasten on, he stretched out both hands pleadingly, regardless that he was still holding his palette and brushes, and cried:

"Young lady, I beg and entreat you to remain just where you are without moving, if only for an instant!"

"Gladly!" said Margariton, blushing rosily.

The painter immediately disappeared behind his canvas and the brushes flew fast as he worked. Half an hour later he asked his model to come and judge his first sketch. Margariton hastened to his side, her curiosity stronger than her fear. At the sight of the canvas on the easel she stopped short in ecstasy, without a word to express her rapturous admiration.

"Ah, my beautiful stranger, this means the salon for me," cried the artist enthusiastically. "Tell me, will you come back tomorrow at this same time? And what is your name?"

"Margariton," replied the girl, shyly, as she nodded her head in consent.

The next day Margariton was prompt at the meeting. She had not said anything to Yves of her chance encounter with the stranger nor of her promise. Not that she felt that she had done wrong, but from a quick instinct of prudence, as if it were a presentiment of the pain she might cause her brother. It was the first secret there had ever been between them.

A week passed, and still another week, and if the portrait had not advanced it was different with the friendship between the artist and his model. Friendship? Nay, Jean Vermeuil knew well enough it was no mere feeling of friendship that made his heart beat so hard at the sight of the beautiful girl. He loved her with all the strength of his being, and he resolved that could he win her love, he would marry her.

But what of the brother Yves, to whom Margariton owed such a debt of gratitude? What would he say?

The villagers, however, who had known of the meetings at the spring, took care that Yves should not be left in ignorance. What terrible vengeance would the hated Yves, they asked each other, take upon the painter? They did not know, but they awaited the outburst of his wrath with a cruel anxiety.

But there was no sign on the proud fellow's face, whatever he may have felt, only that night after he had kissed Margariton good-night the young girl heard him toss uneasily upon his rough couch before she went to sleep.

The next day his mind was made up. In the afternoon, when the young girl went singing to the trysting place, Yves, hidden among the rocks, was present at the meeting. Not a detail of the pretty courtship escaped his jealous eye, the warm hand clasps and the tender glances, which, better than words, betrayed their passion.

And no one heard the bitter sigh when Margariton, radiant in the wonderful happiness of being loved by the man who made earth a paradise to her, cried: "I must tell my brother Yves that you want to marry me—me, a poor girl, penniless and without education! He will be glad, for he loves me, and I love him, too, but not as I love you, Jean, my beloved!"

* * * * * *

Yves had changed greatly during the last weeks. He no longer ate nor slept, and his eyes burned strangely in his pale face. Margariton, in her happiness, did not see the change, nor did she notice, when she took her brother's hand in hers and told him her secret, that he braced himself against the wall to keep himself from falling.

"You love him, and you ask my consent, Margariton," Yves said, hoarsely. "You are free, little one, to do as you will, but I am grateful that you did not forget me utterly. You are the one being on earth that I love; you know it well, and your happiness is all I seek. Marry the man you love, little one; be happy always."

Yves placed a bag of gold in her hand. "This is for your wedding dress," he said. "I have long had it ready for you."

Then with a long kiss on the girl's forehead, Yves went out, but this time he did not turn at her signals of farewell

* * * * * *

Sitting proudly erect in his canoe, balancing easily with the rise and fall of the waves, a single fisherman was darkly outlined against the sunset colored waters of the bay.

Alone upon the beach, Jean Vermeuil watched him in admiration.

"What a splendid fellow," he cried. "I must ask him to pose for me some day!"

He watched the canoe glide easily upon the surface of the water, carried by the current out toward the open sea and to the heart of the golden sun. Soon the man was but a black dot on the horizon—then he disappeared forever.

It was Yves, brave, lonely Yves, who went forth, thus, never to return—that fellow Yves.—Chicago Journal.

The Blessings of Old Age.

It is good to have the old for confidants when you are happy, good to have their consolation when you are sad. If your breast is torn with spiritual strife, or your heart bruised from grievous trials, go find some dear old friend who has suffered much. What comfort you get! He has met in close quarters the thing that affrights you, has passed through what you dread to undergo, and he has vanquished it all through patience and trust. An infinitely sweet and strong virtue of consolation belongs to venerable age, a virtue sanctified in the fires of suffering and purified through great griefs. Little by little these elders have been lifted into a higher life where the desires and envies and ambitions of the lower life, even the thirst for happiness, have vanished away. In them we no longer find anything but unalloyed kindness, self-forgetfulness, serenity in sacrifice. For a man sensitive to beauty of soul and to moral realities, the mere presence of a person whose face speaks of this beautiful old age, relights the flame of courage and strengthens the heart, even in the thick of the cruelest trials. Those who have peace, bring with them the gift of peace; those who know resignation, do not simply teach it, but also communicate it. I am dumb with admiration before the moral splendors that hide quietly in certain lives of the aged. God alone is capable of measuring their richness. Such old age is the supreme flower of humanity. Surely I love youth and know how to appreciate it. Not all the blossoms of the earth gathered into one mass would equal the beauty that radiates from the brow of twenty years, and if all the tender light of the stars could be focused together, all the blue of the sky and the sea and of the mysterious depths of forests, it would not make anything comparable, O youth, to the light in your radiant eyes when hope dwells there, and love. And yet there is something more precious, more moving, whose radiance is rarer than your freshness; it is old age, come through the crucible of human griefs, refined like pure gold, of which the poet says:

Let the flame leap forth from youthful eyes,
The eyes of age shed light.

—Charles Wagner.

Care of Household Bedding.

No part of housekeeping should be more sharply looked after than that which has to do with beds and bedding. Everything about a bed should be aired thoroughly every day, and everything should be kept up to the top notch of cleanliness.

Mattresses should be dusted daily, for dust seems to go to them and cling to them as if by some curious law of attraction. They should be thoroughly gone over—taken apart and cleaned, inside and out,—that is, at least once in three years; oftener if possible. Every good housekeeper cleans beds, springs and mattresses as regularly as any other part of her house, but comparatively few realize how important it is to have their mattresses opened and cleaned periodically.

Yet dust and dirt sift through ticking and collect in an alarming way. Men who manipulate those cleaning machines—"pickers"—say that dust from a single mattress filling comes out in thick clouds during the operation of cleaning.

Blankets should be aired as persistently as mattresses—aired and shaken vigorously every day.

The best kind of blankets to buy varies with the buyer. All wool are usually considered the best, but blankets with a cotton warp and wool "filling" stand home cleaning better than those made of all wool.

Pairs of blankets usually are woven in a single piece, and have to be cut apart and bound separately if they are to be used one at a time. The idea of weaving them in a single piece probably is because they're easier to keep smooth and even on the bed that way. But, if you cut them apart, get binding to match that on the ends, and bind the raw edges with it.

No blankets should be washed, but instead should be dry-cleaned, to leave them fluffy and light. But cotton-warp blankets can be washed (if washed they must be) better than any others, though even those should be done with greater care. They should be stretched (curtain frames are good, if you have them) flat to dry.

Watch the bindings; they get tattered and torn, or soiled easily, but they're too easily rebound to let them stay shabby. Hang the blankets out of doors every little while, as well as airing them as you make the bed, keeping the principle always before your mind that the more sun and air they get the better for them—and for you.

"Spread" styles have come back to the plainer Marseilles and "satins" from the tussier lace covers. "Satins" are newer than Marseilles—very like them, but have a little different finish, and wear perhaps even better. The old-fashioned "honeycomb" spreads are the lighter and easier to "do up," but a good Marseilles, or a satin, will outwear six of the lighter, more loosely woven "honey-comb" spreads.

But a washerwoman would rather do two or three of the lighter spreads than one of the heavy, which get like lead as soon as they are thoroughly wet.

And for extra covers, down quilts stand first, with wool quilts, cotton quilts and a host of other cheaper substitutes. But nothing's so light and so warm as down. Silk quilts are the prettiest, but sateen answers the same purpose in the majority of cases, and is more cheaply renewed. Your room colors can be carried out in your quilt cover, for every color, in a host of designs, is represented. Perhaps the most popular is green, or terra cotta, in a good, medium shade—just light enough to show a cherry color, yet dark enough not to show soil easily. White backgrounds with pink roses are pretty for a girl's roseroom.

Quilts should be shaken and aired, and fresh covers put on when they are soiled. The light cotton-filled quilts can be washed repeatedly if they are done carefully.

For lighter weight extra coverings come "silk" blankets—which are not made of silk at all, but get their name from their curious silky finish. Roman stripes and gay college colors lead,

with an occasional richer blanket woven in art nouveau patterns and colors.

Pillows and blankets that get "soft" and refuse to stand up without drooping (and almost every housekeeper has this experience some time or other) need a tonic in the shape of more feathers, and probably new covering, for pillow covers wear out in the corners, and let occasional feathers amount to something by the time the break is discovered. In refilling pillows do the work of changing the feathers in a room with doors and windows close shut against all stray breezes. It is hard enough to shake the light bulk into the other cover without winds to add to the mischief. And tie a handkerchief over your hair, or the tiny wisps of down that will float up will stick to it in a most aggravating and tenacious way!

A pretty treatment of sheets, and pillow and bolster cases, is to embroider your initals on, just above the hem, directly in the middle. The initials should be rather large, and should be heavily padded, and embroidered in white cotton that launders so well.—Kennebec Journal.

Apple and Quince Receipts.

Apples combine well with quinces. In fact, quince preserves are greatly improved if "put up" with apples. The quince is not especially attractive alone, because it is so strong in flavor. When a preserve of both apples and quinces has stood in sealed jars for some months it is difficult to tell which is which, the apples have so completely taken on the flavor of the other, the quince being distinguishable only by its slight toughness.

A well-tried New York recipe calls for half and half quinces and apples. Steam the quinces, after peeling and cutting them in quarters, until they are tender, but not broken. It will take about half an hour. Weigh both the quinces and apples before cooking them. Measure the water in which the quinces were boiled and allow a pound of sugar to every cupful. Boil the quince water and sugar together for ten minutes. Then cook slowly as many of the apples as you can in the syrup until they are bright red. It will take about three-quarters of an hour or more. Take out the fruit, add more, and so on until all of it is cooked. Do not cook it until it breaks, but only until it is tender. Put the fruit in the jars and pour the syrup over it when cold. It should form a delicate jelly around it.

The quinces are better for being simmered until reddish in hue in the same syrup the apples are cooked in. This is a delicious but very rich preserve. It reaches the height of perfection when served with a little cream.

Apples are also delicious preserved with ginger root and lemon. Prepare them as you would ginger pears.

One tires of ordinary apple sauce, and for a change cooking the apple sauce in the oven is most acceptable. Cut the apples in large quarters and sprinkle them with sugar. Place them in an earthen pudding dish and leave them in a slow oven for several hours. Flavor them with small chips of lemon peel if they are lacking in taste. When ready to take out they should be a rich red and in perfect form.

Fried apples are good with pork chops. Cut peeled apples into slices after coring them, and fry in very little hot butter until a delicate brown. Dredge with cinnamon and serve hot.

Apples can be used in an indefinite number of ways in preparing cakes, pies and puddings. One or two cups of grated apple of rich flavor make an excellent addition to a plain ice-cream. —N. Y. Tribune.

Ungrateful.

"Some people never thank you, no matter what you do for them," said a small boy. "A feller put a bent pin on the teacher's chair the other day, and when the teacher was about to sit down I pulled the chair out from under him to save him from the pin, and if he didn't lick me for it."

Domestic Hints.

Lemon Charlotte. — Dissolve one-third of a box of gelatine in a cupful of boiling water and add to it the juice of four lemons and one orange and a cupful of granulated sugar; stir until thoroughly mixed; when cold and about to harden stir in the beaten whites of three eggs. Turn into a wet mould. Serve with whipped cream heaped around it.

Onion Scallop.—Peel the onions and cook in salted water, changing the water two or three times; when tender drain the water from them as completely as possible and place them in a baking dish. Have prepared a sauce made with three tablespoonfuls of butter, the same amount of flour stirred smooth and a cup and a half of boiling milk. Pour this over the onions, season well and cover with a thick layer of cracker crumbs and pieces of butter. Bake for half an hour.

Apple Fritters.—Make a batter by mixing together one cupful of flour, two-thirds of a cup of water, yolks of three eggs, two tablespoons of butter, a little salt and pepper and a very little celery salt. Let the butter stand for a couple of hours, then fold in the whites of the eggs previously whipped. Have ready some apples pared and quartered. Dip each piece into the batter, then fry in hot lard until a deep brown. Drain on brown paper, sprinkle with finely grated cheese and serve.

A Real French Omelet.—Beat thoroughly, first, the yolks and then the whites of the eggs; to the yolks add a tablespoonful of boiling water, a pinch of salt and a dash of pepper; turn the stiff whites into the yolks and fold; that is, stir them in so that the air bubbles shall not be broken. Turn carefully into a frying pan, in which has been melted a large piece of butter. Set where it may cook very slowly, and when well browned on one side set in the oven to brown on the other. Send immediately to the table. The omelet may be varied by dropping chopped meat in it, chopped celery, grated cheese, or, if a sweet omelet is desired, by spreading jelly over and folding.

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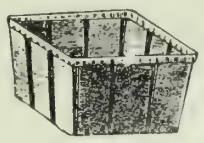
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The Markets.

San Francisco Produce Report.

San Francisco, March 8, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 12½@1 15⅛	97½@ 99¼
Thursday	1 14⅜@1 15⅝	98⅝@ 99⅛
Friday	1 14⅞@1 16	98½@ 99⅛
Saturday	1 16¼@1 15⅝	99⅛@ 98¾
Monday	1 16 @1 15¼	98⅞@ 98⅜
Tuesday	1 13⅝@1 15½	96⅜@ 98¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	47½@47⅞	47½@48⅜
Thursday	47⅝@48⅞	48⅛@48½
Friday	47¾@48¼	48¼@48½
Saturday	48¾@48½	48¾@48¾
Monday	48¾@48⅜	49⅛@48½
Tuesday	48¾@47⅞	49 @48¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$——@——	$1 29½@——
Friday	——@——	1 29⅛@1 28½
Saturday	——@——	1 28¾@1 29
Monday	1 48 @1 47¼	1 28⅝@1 28¾
Tuesday	1 45¼@1 46	1 28 @1 28¼
Wednesday	1 45¼@1 44⅜	1 28½@1 28

Wheat.

As stocks of wheat are light throughout the State, there is no opportunity for any extensive business locally in the grain trade. Not only has business in spot wheat been of light volume, but speculative transactions have been few and confined almost wholly to December option, with fluctuations in the same of narrow compass. December wheat is selling mainly within range of $1.28@1.29, indicating about $1.25 for No. 1 shipping at the opening of the new season. Quotable values for 1904 wheat have shown little change for weeks past, and there is nothing to warrant anticipating any material fluctuations for weeks to come, but in the prevailing dullness the quotations are largely nominal. Free purchases are not possible at full quotations noted, neither could heavy sales be effected at these figures. The Liverpool market was reported easier, in consequence of offerings from Australia and Argentina. Again there were reports of serious damage to crop in India. Chicago was lower than previous week, but there was little disposition to short the market at the decline, the bears having been cinched quite severely lately in some of their heaviest shorting operations.

California Milling	$1 55 @1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.48@1.43⅝.
December, 1905, delivery, $1 29¼@1.28.

Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.45⅜@1.44⅝; December, 1905. $1.28½@1.28.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7sid@-s-d	-s-d@-s-d
Freight rates	12½@14½s	12½@-s
Local market	$1 40 @1 43¾	$1 42½@1 47½

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on March 1 and Feb. 1:

Tons.	March 1.	Feb. 1.
Wheat	*31,609	32,101
Barley	†11,314	19,264
Oats	2,529	3,604
Corn	251	227

*Including 11,596 tons at Port Costa, 18,441 tons at Stockton.

†Including 5143 tons at Port Costa, 4942 tons at Stockton.

Stocks of wheat in near-by warehouses on the 1st inst. show a decrease of 492 tons for the month of February. A year ago there were 36,787 tons of wheat in near-by warehouses.

Flour.

The outward movement continues light, and it would be phenomenal to have it otherwise at present, millers having difficulty in obtaining desirable wheat. Local business is of fair average proportions. Prices are without quotable change, but on favorite makes prevailing values are being well maintained.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Stocks of this cereal are light and market is unfavorable to buyers, especially for good to choice, although the demand at full current figures cannot be termed active. The barley in store on 1st inst. at Port Costa, Stockton and in San Francisco aggregated only 11,314 tons, while a year ago in same warehouses there were 29,000 tons. The bark Colonial Empire, clearing Saturday for Australia, carried 28,000 centals Chevalier barley, valued at $37,800. The steamer Glenturret, bound for Yokohama, took as part cargo 93,000 centals barley, valued at $111,600. The steamer Stanley Dollar, about ready to clear for Japan, has barley as principal cargo.

Feed, No. 1 to choice	$1 20 @1 22½
Feed, fair to good	1 17½@1 20
Brewing, No. 1 to choice	1 22½@1 25
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

One of the heaviest shipments of oats from this port the current season went out the past week per steamer Glenturret for Yokohama, the quantity being 23,448 centals, with a clearance value of $31,800. A shipment of 30,000 centals was made in December for Asiatic Russia, but was captured by Japan. Not many oats are arriving, and supplies in this center are comparatively small. Stocks in local warehouses on the 1st inst. were only 2,500 tons, as against 4,000 tons at corresponding date last year.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 55
Black oats	1 35 @1 65
Red, fair to choice	1 35 @1 55

Corn.

Market is firmer for both Large Yellow and White, but more particularly for the latter, which is in demand for Central America. Small Yellow is scarce and in fair request on local account. Total supplies of corn in local warehouses on 1st inst. were 251 tons and a year ago were 315 tons.

Large White, good to choice	$1 35 @1 40
Large Yellow	1 35 @1 40
Small Yellow	1 80 @1 90
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 35 @1 40

Rye.

There is considerable inquiry and not much pressure to realize, holdings being light.

Good to choice	$1 52½@1 60

Buckwheat.

Aside from moderate supplies in the hands of millers, there is very little on the market.

Good to choice	$1 75 @2 00

Beans.

Market continues firm for prime to choice beans, with stocks of desirable qualities light throughout the United States and also in Europe. Large Whites have been in active request at improved figures. Bayos and Pinks have been receiving increased attention at hardening values. Stocks of beans in San Francisco warehouses and on seawall on 1st inst. were 146,507 sacks, and on Feb. 1st were 160,369 sacks, with receipts in February 61,911 sacks, showing a reduction of 75,763 sacks the past month in local stocks.

Pea, fair to good, 100 lbs	$3 00 @3 25
Small White, good to choice	3 25 @3 50
Large White	2 75 @3 00
Pinks	3 50 @3 75
Bayos, good to choice	3 00 @3 25
Red Kidneys	4 50 @——
Reds	5 50 @5 75
Limas, good to choice	5 15 @5 25
Black-eye Beans	2 60 @2 85

Dried Peas.

Good to choice are sought after and are salable to advantage, there being few of this sort on the market.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 75 @2 25

Hops.

The local market is quiet and is displaying no noteworthy strength, although there is no evidence of undue selling pressure, holders generally contending for much the same figures as have been nominally current for some weeks past. The New York Producers' Price Current says: "The market in New York State has shown more activity the last few days and sales are reported principally in Otsego county at 25@26c. London reports a very dull market, with very little inquiry from brewers, who are complaining of poor business. The German market is declining, owing to the considerable amount of stock left in speculators' hands, which is being pressed for sale with no outlet."

California, good to choice, 1904 crop	24 @27

Wool.

Small lots of Spring clip are arriving, mainly from Bakersfield section, and showing superior quality, far ahead of the 1904 wool. Dealers are not giving out quotations, claiming that there is nothing here to quote. While stocks here are light, some small transfers of wool are being made, and in the main at figures rather higher than the nominal values below quoted.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	20 @23
Middle County, defective	17 @19
San Joaquin and Southern, free	15 @17
San Joaquin and Southern, defective	13 @14
Southern lambs, as to quality	13 @16
Oregon, good to choice	20 @23
Nevada	16 @22

Hay and Straw.

The market has presented a little steadier tone than for some weeks preceding, more owing to decreased receipts than to any noteworthy improvement in the demand. There have been no special changes in quotable values, but there has been less cutting of rates to effect sales.

Wheat, good to choice	$11 00 @ 13 00
Wheat and Oat	9 00 @ 11 50
Tame Oat, fair to choice	8 00 @ 10 50
Wild Oat	7 00 @ 9 50
Barley	7 00 @ 10 00
Alfalfa	7 00 @ 10 00
Clover	6 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 13 00
Straw, ℔ bale	25 @ 50

Millstuffs.

Market for Bran and Middlings was quiet, and rather easy in tone on account of the limited inquiry, but stocks were not heavy and mostly in few hands. Rolled Barley was very steadily held. Tendency on Milled Corn was to stiffer prices.

Alfalfa Meal, ℔ ton	$21 00 @ 22 50
Bran, ℔ ton	20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 00 @ 26 00
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	32 50 @ 34 00

Seeds.

Little doing in any of the several kinds quoted herewith. There are no heavy offerings of any description. Quotable values remain as previously noted, and are based mainly on asking figures.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	12 @13
Canary	6¼@ 6½
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Not much strictly choice water-white honey on the market, either Comb or Extracted, but there is considerable amber stock, including some from the Hawaiian Islands. For ordinary grades the market is easy in tone, with demand slow.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Current values are being well maintained. The steamer City of Peking, sailing the past week, took 2,500 lbs. beeswax for Belgium.

Good to choice, light ℔ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Market for Beef is without appreciable change, demand being fair and values steady. Veal has been arriving quite freely, causing market to rule weak. Mutton is selling at slightly firmer figures, offerings being barely sufficient for immediate needs. Yearling Lamb is in fair supply, but Spring Lamb is in light receipt and in prime condition is readily placed at full current figures. Hogs are meeting with a decidedly firm market, on account of light receipts.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ℔ lb	6 @ 6½
Beef, 2nd quality	5¼@—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6½@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5¾@—
Hogs, large, hard, over 200 pounds	5½@ 5⅝
Hogs, small, fat	5½@ 5⅝
Veal, large, ℔ lb	6½@ 8
Veal, small, ℔ lb	7 @ 9
Lamb, yearlings, ℔ lb	8½@ 9
Lamb, spring, ℔ lb	12½@14

Hides, Skins and Tallow.

Hides and Pelts in prime condition are meeting with tolerably prompt custom at quotably unchanged values. Tallow is being shipped outward in considerable quantity, largely to Central America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@ 9½	—@ 8½
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@ 9½	—@ 8½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@12½	—@11½
Dry Hides	—@18	—@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ℔ skin	1 25@1 75	
Pelts, medium, ℔ skin	80@1 10	
Pelts, short wool, ℔ skin	50@ 75	
Pelts, shearling, ℔ skin	15@ 40	
Horse Hides, salted, large prime, each	2 75@——	
Horse Hides, salted, medium	2 50@——	
Horse Hides, salted, small	2 00@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

Market for Grain Bags is quiet, farmers generally preferring to take chances later on rather than stock up at present. In previous seasons there has been as a rule little or nothing gained by speculating in bags, and in not a few instances losses have been incurred by buying ahead. New Calcuttas now cost close to present asking prices for July delivery, and should there be a good yield of grain, as now expected, there is probability of stiffer prices being exacted at harvest time. San Quentins have been lately selling at a loss and may continue to go at less than they can be produced for, but the output of these is quite limited, as compared with the requirements of the State.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7¼
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6 @6½
Grain Bags, Calcutta, buyer June-July	6½@6¾
Wool Sacks, 4-lb	32 @——
Wool Sacks, 3¼lb	30 @——

Poultry.

Increased receipts of Eastern poultry, mostly Old Chickens, caused market for ordinary domestic to be less favorable to sellers than previous week. There was no excess of offerings of choice young poultry, however, and such brought about as good figures as had been ruling. As the Lenten season is now on, the demand for all kinds of poultry will naturally be lighter until Easter. There was little inquiry for Turkeys and Dressed were hardly quotable, the weather being unfavorable.

Turkeys, Dressed, choice, ℔ lb	$ 19 @ 22
Turkeys, live gobblers, ℔ lb	18 @ 20
Turkeys, live hens ℔ lb	18 @ 20
Hens, California, ℔ dozen	5 00 @ 5 50
Hens, large	6 00 @ 7 00
Roosters, old	5 00 @ 5 50
Roosters, young (full-grown)	6 50 @ 7 50
Fryers	5 50 @ 6 00
Broilers, large	4 00 @ 5 00
Broilers, small to medium	3 00 @ 4 00
Ducks, old, ℔ dozen	5 50 @ 6 00
Ducks, large young, ℔ dozen	6 50 @ 7 50
Geese, ℔ pair	2 00 @ 2 25
Goslings, ℔ pair	3 00 @ 3 50
Pigeons, old, ℔ dozen	1 25 @ 1 50
Pigeons, young	2 25 @ 2 50

Butter.

In consequence of the recent active shipping demand, mainly from Northern points, there has been a scramble among dealers to secure butter. Some who were short of supplies started buying in the interior at relatively higher prices than were current here. But local values naturally had to follow suit. For some favorite brands of creamery squares 30c. per lb. was exacted, and proportionate figures for dairy stock. At the advanced prices the demand has been less active, both for shipment and on local account. Eastern markets are tending downward.

Creamery, extras, ℔ lb	27 @29
Creamery, firsts	26 @27
Creamery, seconds	24 @25
Dairy, select	26 @27
Dairy, firsts	24 @25
Dairy, seconds	22 @23
Mixed Store	17 @18

Cheese.

There are no heavy stocks and market is firm at ruling rates. Some outside points which ordinarily run on Eastern cheese have been drawing supplies from here, owing to stiff and lightly stocked markets on the Atlantic side.

California, fancy flat, new	12½@13
California, good to choice	11½@12½
California, fair to good	10½@11½
California, "Young Americas"	11 @13
Eastern	14½@15½

Eggs.

Market is showing more steadiness, there being an active demand for immediate use at prevailing values, and large quantities are going into cold storage. Good to choice eggs are not likely to rule any lower here this season.

California, select, large, white and fresh	17 @—
California, select, irregular color & size	16 @—
California, good to choice store	15 @16
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Prices for Asparagus show further declines, under increased offerings. Rhubarb was in good supply and was offering at reduced rates. Arrivals of Peas and Tomatoes were light and for choice the market was firm. Choice Onions were in slim supply and stiffly held.

Asparagus, No. 1 to choice, ℔ lb	6 @ 8
Asparagus, No. 2, ℔ lb	3 @ 5
Beans, Lima, ℔ lb	— @ —
Beans, String, ℔ lb	— @ —
Beans, Wax, ℔ lb	— @ —
Cabbage, choice garden, ℔ 100 lbs	50 @ 60
Egg Plant, Los Angeles, ℔ lb	— @ —
Garlic, ℔ lb	8 @ 10
Mushrooms, ℔ lb	— @ —
Onions, Yellow Danver, ℔ ctl	3 25 @ 3 50
Peas, Green, ℔ lb	4 @ 8
Peppers, Bell, ℔ lb	— @ —
Peppers, Green, ℔ lb	6 @ 10
Rhubarb ℔ box	1 25 @ 1 65
Summer Squash, small box	— @ —
Tomatoes, Los Angeles, ℔ box	75 @ 1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Choice Burbanks were in good request at prevailing values, there being no excessive offerings of this description. Common qualities were offered freely and met with a dragging and weak market. There was considerable inquiry for desirable seed stock and market for same was tolerably firm. A few New Potatoes are arriving and where of desirable size are bringing good prices.

Early Rose, ₱ cental	1 75	@	1 90
Salinas Burbanks, ₱ cental	1 00	@	1 50
River Burbanks, ₱ cental	40	@	1 00
River Reds, ₱ cental	65	@	85
Oregon Burbanks, ₱ cental	1 20	@	1 40
New Potatoes, ₱ cental	3 00	@	3 50
Sweet Potatoes, ₱ cental	50	@	1 00

Fresh Fruits.

Apples were not in heavy receipt, and especially was the market lightly stocked with strictly choice to fancy. Superior qualities of Spitzenberg were salable in a limited way up to $2.25 per box, but were too scarce to be quotable. Common and defective Apples dragged at low prices. Raspberries arrived in small quantity from Temescal and were quoted at 40@50c per small basket.

Apples, fancy, ₱ 50-box	1 75	@	2 00
Apples, good to choice, 50-lb. bx	1 00	@	1 50
Apples, fair to good, ₱ box	75	@	1 00
Apples, Lady, ₱ box	—	@	—
Persimmons, ₱ regular box	—	@	—
Strawberries, large, ₱ chest	—	@	—

Dried Fruits.

Stocks are showing steady reduction and are now so light of most kinds as not to admit of wholesale trading. There are few Apricots offering. Standard Peaches are nearly out of market and supplies of the better grades are of quite moderate volume. Pears make a light display and are mostly ordinary. Apples are in quite limited stock. Prunes of the middle sizes are in fair supply, but are moving more freely, owing to there being few of any other sort. Quotable values throughout show little change, but market is in the main firm at current figures. The steamer Umatilla, sailing the past week for British Columbia, carried 32,675 lbs. dried fruit, exclusive of Raisins, and including 20,200 lbs. Prunes.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	4½@ 5
Apples, extra choice to fancy, 50-lb boxes	6 @ 6½
Apricots, Moorpark	9½@11½
Apricots, Royal, good to choice, ₱ lb	8 @ 9
Apricots, Royal, fancy	9½@10½
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ₱ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes, 1¼@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1¼@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

There is a fair movement, considering the time of year, and that present offerings are mostly common quality, the bulk of supplies now in stock being 2-crown loose Muscatel. The steamer Umatilla, sailing the past week for British Columbia, carried 8500 lbs. raisins.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@1	30
Dehesas, 20-lb box	—	@1	85
Imperials, 20-lb box	2 25	@2	35

2-Crown Standard loose Muscatel 3¼@3½c
3-Crown Standard 3¾@4 c
4-Crown Standard 4¾@ —c
Seedless Thompsons —@4¼c
Seedless Sultanas —@3 c
Fancy, 16-oz. Seeded 6 c
Choice, 16-oz. Seeded 5 c
Fancy, 12-oz. Seeded 4⅞c
Choice, 12-oz. Seeded 4½c
Bleached Sultanas, Woodland Dist., 50s 4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s 5½@8 c

Citrus Fruits.

Oranges sold at a wider range, a large proportion of recent offerings showing poor quality. For inferior stock the market was weak, while choice to select oranges were in good request and market for same fully as favorable to sellers as previous week. Lemon values ruled steady, with demand for this fruit fair and stocks ample for current requirements. Limes were in moderate supply and prices without change.

Oranges, Navels, choice to fancy, ₱ bx	1 50	@2	00
Oranges, Navels, fair to good, ₱ box	75	@1	25
Oranges, Seedlings, ₱ box	75	@1	10
Oranges, Cal. Tangerines, half box	1 00	@1	50
Oranges, Japanese Mandarins, ₱ box	—	@—	
Lemons, California, select, ₱ box	2 50	@2	75
Lemons, California, good to choice	1 75	@2	25
Lemons, California, fair to good	1 25	@1	75
Grape Fruit, ₱ box	1 50	@2	50
Limes, Mexican, ₱ box	4 00	@4	50

Nuts.

Market is quiet and devoid of new feature. There is scarcely any inquiry from buyers, large or small, for either Almonds or Walnuts. Values remain nominally as previously quoted.

CYPHERS INCUBATOR COMPANY

GRANT M. CURTIS, President **Buffalo, N. Y., U. S. A.**

wishes to annouce to the people of the West the opening of its PACIFIC COAST BRANCH in spacious quarters at

329 Sansome Street, SAN FRANCISCO, CAL.

Twenty-two Gold and Silver Medals have been awarded the Genuine Patent-diaphragm, non-moisture self-ventilating and self-regulating Cyphers Incubators in 12 different countries

within the last fifty months. The World's Fair Judges at St. Louis pronounced the 1905 patent of the CYPHERS STANDARD INCUBATOR a "Practically perfect incubator". Our Incubators are without doubt or controversy recognized as

THE WORLD'S BEST.

More Evidence of this is that Standard Cyphers Incubators and Brooders are used exclusively on **Forty-six Experiment Farms** in different countries, states and provinces, in all parts of the world. No other line manufactured can approach this record. These farms are for the purpose of public instruction. **Can you doubt** that our incubators are the best when they are used and **publicly endorsed** by these institutions.

To get the best results in their poultry, work people must use the best incubators, brooders and poultry supplies. Think it over.

Reduction in Prices Owing to the large saving we have accomplished in manufacture, by increasing our plant, and installing improved machinery, we are enabled to offer our customers everything in the poultry line that is the **highest type of perfection** at prices lower than ever before.

60-egg size incubator	$12.00
120-egg size incubator	17.00
220-egg size incubator	24.00
360-egg size incubator	30.00
440-egg size double-decker	48.00

In addition to the foregoing we are offering for 1905 two special, low-priced incubators at $10, and $6.50 each, the FARM ECONOMY (100 egg capacity) and "Boy's Choice" (50-egg capacity) respectively; also two new styles of brooders, the STORM KING OUTDOOR BROODER, two sizes, holding 50 and 100 chicks respectively, and the HARE-CURTIS HYGIENIC BROODER, a new departure in brooder construction that we believe will prove a great boon to poultrymen.

Poultry Specialties now manufactured by this company, number **more than sixty useful articles,** needed by all up-to-date poultry men for their best success. These are articles it pays to use. They are not foolish trinkets. Everything we make is of practical value and positively manufactured in our own plant. We can therefore **guarantee** their quality as to workmanship, and their purity as to ingredients.

We make a Specialty of Complete Poultry Outfits including plans for buildings and yards and all necessary equipments required for the best results. Our goods are the best on the market, and **far less in price.** We guarantee their quality and complete satisfaction or YOUR MONEY BACK.

Five Styles of Brooders:

Style A, Outdoor	$12.00
Style B, Indoor	10.00
Storm King, No. 1, Outdoor	6.00
Storm King, No. 2, Outdoor	8.00
Hare-Curtis, Indoor	7.50

Poultry Foods:

Cyphers Chick Food	$2.50 per 100 lb.
Cyphers Laying Food	2.25 " 100 "
Cyphers Forcing Food	2.25 " 100 "
Cyphers Scratching Food	2.25 " 100 "
Full-Nest Egg Food	42 oz. pkgs. 25c

Clover and Alfalfa Products:

Short Cut Clover	$2.00 per 100 lb.
Mealed Clover	2.25 " 100 "
Shredded Clover	2.00 " 100 "
Short-Cut Alfalfa	2.00 " 100 "
Alfalfa Meal	2.25 " 100 "
Shredded Alfalfa	2.00 " 100 "

Poultry Appliances:

Pedigree Egg Trays	Simplex Cramming Machine	Wall Fountains
Pedigree Trap Nests	Practical Egg Testers	Dry Food Hoppers
Cyphers Chick Shelters	X-Ray Egg Testers	Grit and Shell Boxes
New Model Brood Coops	Brooder Metals	Food and Water Cups
Revolving Egg Cabinets	Safety Brooder Stoves	Caponizing Instruments
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Wire Egg Carriers		

Insecticides, Remedies, etc.

Cyphers Lice Paint	Complete Medicine Case (ten remedies)	Fumigating Candles
Cyphers Lice Powder	Napereol, a Disinfectant	Ovinapthol Nest Eggs
Cyphers Egg Stimulant	Nodi Charcoal (in cartons)	Cyphers Complete Grit
Cyphers Roup Cure		

OUR 1905 CATALOGUE This catalogue is the largest and finest we have ever issued, 228 pages, 8x11 inches in size. Six special chapters on profitable poultry keeping. More than 450 illustrations, including latest portraits of 150 best known authors, judges, fanciers, owners and manager's of the world's largest and most successful poultry plants. 120 pages devoted to illustrated description of Cyphers Incubators: SENT FREE postpaid, to every reader of this advertisement who will send their name and and the names and addresses of two acquaintances who are raising poultry for profit. Please mention this paper and address nearest office.

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KANSAS CITY, MO., 2325 Broadway
LONDON, 119-125 Finsbury Pavement

SAN FRANCISCO, CALIFORNIA, 329 SANSOME STREET

Chestnuts, Italian, ₱ lb	7	@	8
Nonpareil Almonds	14	@	16
Ne Plus Ultra Almonds	12	@	14
Languedoc Almonds	9	@	11
Peanuts, fair to prime	4½@		5½
Cal. Walnuts, No. 1 soft shell	12½@		13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

Market shows much the same general condition as previously noted. Dry wines of last vintage are quotable at 14@17c. per gallon, San Francisco delivery, with offerings light from first hands and market firm for desirable qualities. Sweet wines of 1904 are quoted at 25c. per gallon at wineries, packages if furnished to be returned, or at 27½c., San Francisco delivery. Receipts of wine at San Francisco last week were 361,150 gallons, and for preceding week, 264,650 gallons. Receipts for February were 1,591,055 gallons, and for corresponding month last year, 1,749,650 gallons. The steamer San Jose, sailing 4th inst., carried 19,484 gallons and 74 cases, mainly for New York.

WE regret to announce that Mr. George Y. Coutts of Orange, the well-known Jersey breeder, has sold nearly all his stock and will soon sell his ranch and retire from his old activities. As a souvenir gift Mr. Coutts sends us a large box of oranges which shows that his place produced good gold, both in fruit and butter. It has been a strong combination and one which could more widely prevail, and Mr. Coutts' example will be of public value.

THE proprietors of Perry Davis' Painkiller have won another trade-mark infringement. They took action against the Lightening Medicine Company, of Rock Island, to restrain them from using the word Painkiller. The court decreed that the Davis & Lawrence Company are only entitled to use this word, and issued an injunction against the Lightening Medicine Company restraining them forever from its use. The Davis & Lawrence Co. own the name Painkiller as a trade-mark, by right of originality, by right of adoption and first use.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	80,651	3,238,661	3,952,855
Wheat, ctls	45,669	2,274,606	1,689,218
Barley, ctls	50,770	2,767,822	4,782,724
Oats, ctls	862	696,634	774,890
Corn, ctls	....	151,683	119,459
Rye, ctls	775	44,202	43,628
Beans, sks	21,918	534,572	634,456
Potatoes, sks	34,942	967,168	977,572
Onions, sks	566	102,265	118 571
Hay, tons	2,316	135,463	130,546
Wool, bales	119	40,502	36,365
Hops, bales	293	37,281	28,830

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	19,608	2,222,012	2,626,036
Wheat, ctls	187	800,891	751,798
Barley, ctls	45,278	1,702,113	3,768,956
Oats, ctls	2,133	51,361	17,588
Corn, ctls	1,573	74,546	14,427
Beans, sks	506	42,300	33,161
Hay, bales	44,066	188,130	124,029
Wool, lbs	....	830,690	1,848,923
Hops, lbs	21,880	320,035	551,957
Honey, cases	30	1,801	4,264
Potatoes, pkgs	6,829	86,303	83,461

SOME time ago the College of Agriculture of the University of California conducted a series of comparative tests between the sulphurs of the Nevada Sulphur Co. and the expensive French and Italian sublimed sulphur and flowers of sulphur, and the result of these experiments demonstrated that the Nevada sulphur was far superior to foreign sulphurs in purity and effectiveness and for all purposes for which sulphur is used. These results have been confirmed by the awards made at the World's Fair at St. Louis, where the product of the Nevada Sulphur Co. received the highest award. The sulphur produced by the Nevada Sulphur Co. is the only sulphur that is produced in the United States, for agricultural purposes. In fact the only other sulphur that is being mined and marketed in the United States, aside from the Nevada mines, is in Louisiana, which product is, however, shipped in a crude state to Eastern parties for the paper mill and acid trade, so that the Nevada sulphur constitutes the only home product there is of sulphur. *

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POULTRY, EGGS AND BUTTER
Wanted at the Highest Market Prices.
Can handle on consignment or will purchase outright from you. Ship us all the produce you can. Immediate cash returns and highest market prices guaranteed. Consignments and correspondence solicited. Mark and consign all shipments to the POULTRYMEN'S UNION, 215 & 217 Clay St., S. F., Cal.

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Quickest returns at full market prices for green and dried fruits. Special attention given to poultry and eggs. Write us for information.

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Simple Bowl	or	Complicated?
Izzers	or	Hasbeens?
Right Now	or	Were Once?
Waist Low Can	or	Head High Can?
Self Oiling	or	Oil Yourself?
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Tubular	or	Bucket Bowl?

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Sharples Co. Chicago, Illinois — P. M. Sharples West Chester, Pa.

Patrons of Husbandry.

Tulare Grange.

To the Editor:—Tulare Grange met in regular session; after a bountiful lunch, business was taken up. Bro. Fowler on behalf of the committee reported that they met the Board of Supervisors and succeeded in having them raise the bounty on squirrel tails from 2 cents to 3 cents for the next three months. This demonstrates that the Grange has weight with the Supervisors.

Bro. Forrer of the Experiment Station has consented to allow the Grange to visit the station in a body at some future time, to enable the members to view his workings and different experiments on various kinds of soils.

A valuable paper was read by Bro. C. E. Davis on the subject of the day, "To what extent can the prices of farm products be controlled, and will it be detrimental to consumer?" The paper commended co-operation among farmers in all products; many present remarked that "organization" was the key note, backed by a proper agricultural education. Worthy Master Barber cited the wheat growers of the middle West as an example.

Bro. Shoemaker, as chairman of committee, presented resolutions endorsing the bills now before the State Legislature, providing for instructions in the elements of agriculture in the public schools. We know that much of the progress made in the professions during the past century is due to the association of men and women of minds, to the exchange of thoughts and ideas. It is the farmer who has neglected himself in this respect. Farming has changed; it is now a science, and hard work alone will not make a successful farmer. The mind must be cultivated as well as the soil in order that the hands may be intelligently directed; while agriculture is being taught in some of the public schools of several States, then let it be taught in this great State. E. C. S.

Tulare, Feb. 24.

Lincoln Grange.

Lincoln Grange, No. 318, met Saturday, February 25, Worthy Master George E. Hyde presiding. Elmer Taggart, chairman of the local improvement committee, introduced a resolution praying the supervisor to give attention to Prospect road.

W. E. Stevens presented a written report from the co-operative committee outlining a plan of action for the prune producers and asking support in an endeavor to form local unions for handling this year's crop.

The project of holding a horticultural fair this fall under the auspices of the Pomona Grange was discussed and endorsed.

The Lecturer, Miss Corpstein, furnished a patriotic program in celebration of the birthdays of Washington and Lincoln, the program being varied from the sublime to the wit and humor so originally characteristic of Lincoln. Miss Corpstein read a paper on "True Patriotism" that was greatly appreciated.

The younger members of the Grange presented a comedy entitled "Between the Acts," at I. O. O. F. Hall on March 3, to which all of their frieds were most cordially invited.

A Valuable Paper.

The Pacific Rural Press of San Francisco has been designated by the State Grange Executive Committee as the official organ of the State Grange of California. The Grange has made no mistake in its selection, for the above journal is one of the most valuable in the country for the farmer, orchardist and stock raiser. All subjects are treated in an able, instructive and interesting manner and every effort is put forth at all times to advance the best interests of the State. The Pacific Rural Press has done much to upbuild the farming, fruit growing and dairying interests of California, and each succeeding year the scope of its usefulness increases. It is to be congratulated, and the Pajaronian takes occasion to extend best wishes.—Watsonville Pajaronian.

Be Free

From the Irritation and Exhaustion of an obstinate cold. At the first sign of a Cough take

Allen's Lung Balsam,

The one remedy that never fails to cure Coughs, Croup, Bronchitis, Sore Throat and other consequences of cold.

Large, Medium and Small Bottles.

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Not to be compared to the ordinary Fresno Scraper offered on this coast. Heavier material, stiffer and superior construction. Runners in back of bowl



"Fresno" Improved Scraper.
3½-foot, 4-foot and 5-foot.
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for BUTCHERING, LIFTING HAY, WAGON BOXES, STRETCHING WIRE, ETC. Does away with the labor of two or three men. Guaranteed not to cut the rope.

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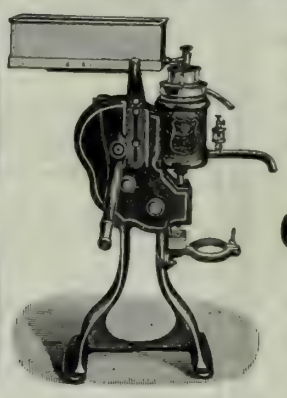
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ARE HELD BY

THE IMPROVED

U. S. CREAM SEPARATOR

THE WORLD'S CHAMPION DAIRY BUTTERMAKER



The SWEEPSTAKES, and *every* highest dairy score in the four great butter scoring contests **open to the world,** at the **World's Fair,** St. Louis, 1904, were awarded to butter made from U. S. Separator cream. **"U. S." Quality Wins!**

The World's Champion Skimmer

The U. S. Cream Separator has **indisputably and conclusively** proven that it is the closest skimming separator in the world. In 50 **consecutive** runs it averaged to leave *only* **.0138** *of one per cent.* of butter fat in the skimmilk.

NEVER EQUALLED BY ANY OTHER SEPARATOR

Now these records mean something to YOU. Find out about it.

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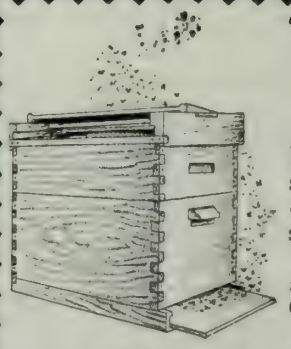
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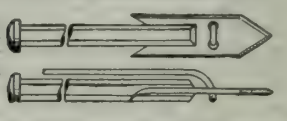
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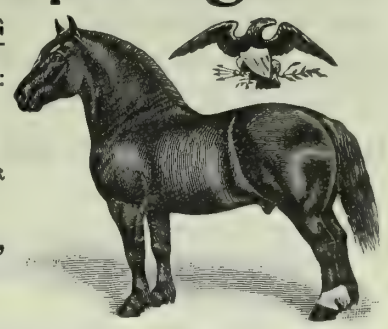
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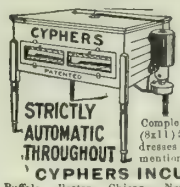
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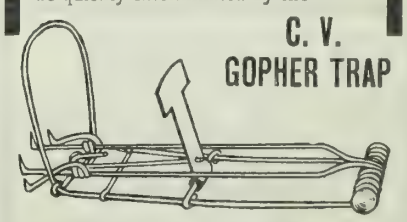
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Five pounds quicklime.

Fifty gallons water.

Dissolve the copper sulphate (blue stone) in a barrel containing twenty-five gallons of water. Slack the quick lime and then add sufficient water to make twenty-five gallons of milk of lime. Unite the two solutions by pouring one pailful of each at the same time into a third barrel. The milk of lime should be well stirred while being dipped from the barrel and should be passed through a fine wire screen when poured into the mixing barrel, but the copper solution should not be passed through the screen. Stir the mixture thoroughly at first and also occasionally while being applied as a spray to the tree.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used for dissolving the copper, it will go to the iron and the effect of the spray is largely neutralized. After it is prepared the mixture may be applied to the trees from the usual galvanized iron spray tank. Apply the remedy cold and as soon after it is prepared as possible. Never allow it to stand over night.

In a letter to the Horticultural Commissioners of Sutter county, Prof. Pierce says the above spray is a fertilizer and invigorator of the tree and will effectually prevent curl leaf if applied very thorougly from one to three weeks before the buds open. This remedy can be applied with safety until the buds finally burst into full bloom.

Of bluestone only the best quality should be used. There is a good deal of variation in bluestone, as it contains always more or less iron sulphate or copperas, but this is readily discernible and a sample that contains any considerable amount of rust color copperas should not be used.

This formula was revised by Prof. Pierce February 9, 1905, and should be used exactly as printed to secure the best results.

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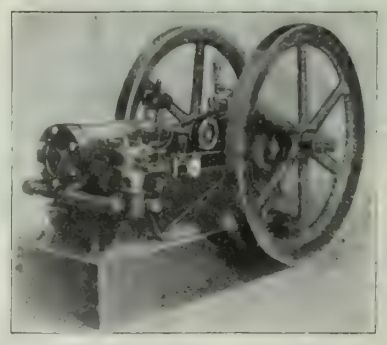
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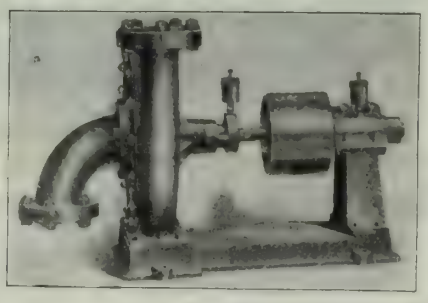
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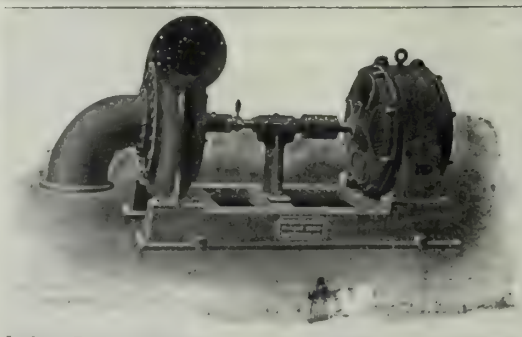
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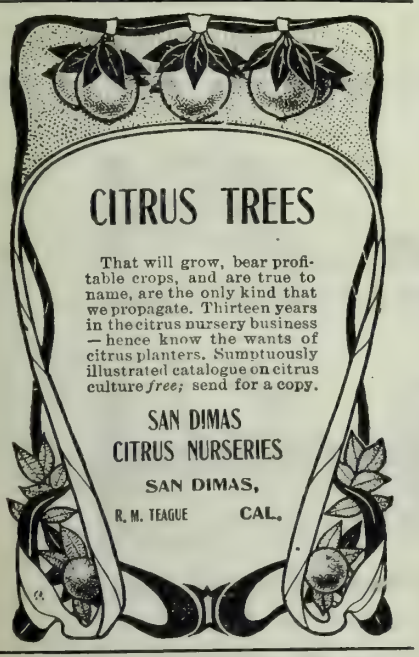
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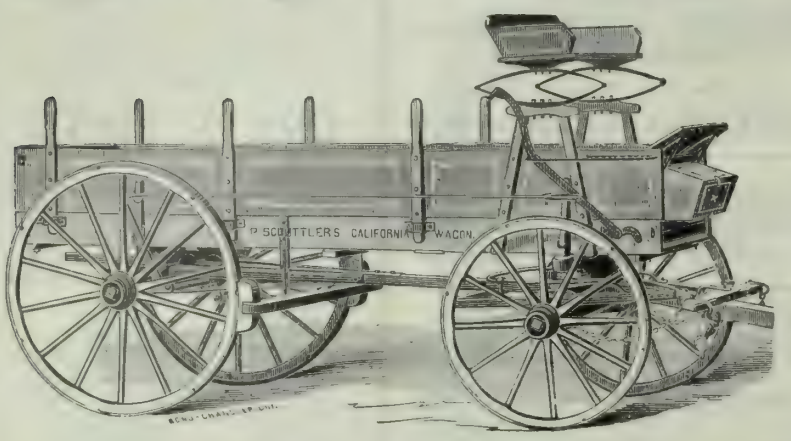
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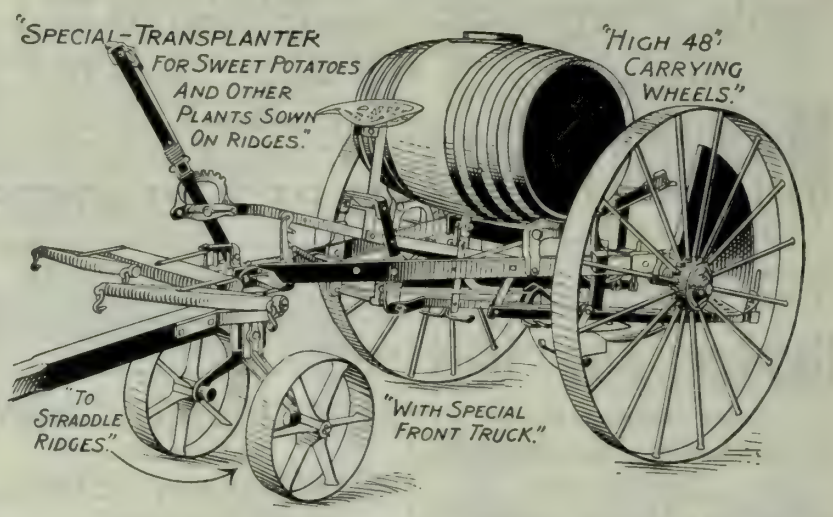
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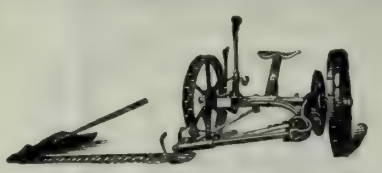
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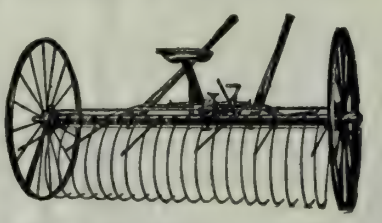
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Tip Top California.

It is probably widely known, though not less striking as a fact, that California has in Mount Whitney the highest uplift of land in the United States, outside of Alaska, and has also in Death valley, which can be seen from the summit of Whitney, the deepest depression of land in the United States, which the ocean would be glad to transform into a salt lake 427 feet deep if it could only get into it. The clouds would also make a lake of it if they descended to business, but clouds in that part of the country are chiefly ornamental. But Mount Whitney, with its elevation of 14,522 feet, and Mount Shasta, about 100 feet less, are only points of the great area which are entitled to be designated "tip top California." For an arbitrary standard we can say all above 10,000 feet can be included in that designation, and our illustrations on this page indicate the character of the surface at that altitude. They give a good idea of the picturesque region, which abounds in glacial lakes, running streams, moraines, striated rock surfaces and other pronounced features of glacial action.

By way of description of this region it has been written that very large portions of the high Sierra are composed of light-colored granite, which is commonly thinly clothed with vegetation and imparts a cold gray tone to the rugged scenery. The peaks and crests have often, however, been sculptured from somewhat metamorphosed sedimentary rocks which have been penetrated by heavy beds of intrusive granite, and are frequently rich in color. The landscape in this portion of the range is in pleasing and striking contrast with the gray monotony of the western slope, and exhibits innumerable shades and tints which combine to form pictures as rich in tone as they are grand in proportions. Besides the splendor of Alpine scenery, the mountains present the additional attractions of living glaciers, which, although small, are worthy the attention of travelers. They have an approximate elevation of 11,500 feet. Nearly all occur in amphitheaters on the northern sides of lofty peaks, where they are sheltered by high cliffs and mountain ridges, and nearly all of them flow northward. The glaciers in the region indicated by our engravings are the southernmost in the United States. The Sierra Nevada glaciers seem to be all simple ice streams without tributaries. They are believed not to be increasing at the present time, which shows that we are in a mild period in climatic oscillation. We are content that this condition be indefinitely continued. When we want to see glaciers we are willing to climb after them; it would be disagreeable to have them insist upon running down into our semi-tropical valleys.



In the Sierra Nevada Mountains, Above Sardine Lake, Looking Eastward—Elevation 10,510 Feet.



Glacial Lake and Moraine in the Sierra Nevada Near Camp Hassan, Inyo County—Pines on the Mountain Side, Aspens Near the Lake.

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SAN FRANCISCO, MARCH 18, 1905.

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The Week.

The spring rains which make the crop are coming generously and widely, and thus advancing the prosperity programme of this well-ordered year. We cannot recall a better, thus far in the season, and we see no reason to discount the part still to come.

The Legislature has adjourned after having passed its judgment in some way or other upon 2069 bills, favoring finally 760 of them. Those who are expert at such matters say that the Governor will sign about 550 of them, which would be at the rate of 55 for each of the ten days given him for that purpose. Manifestly these are busy days with him. In Governor Pardee's message congratulating the Legislature upon the completion of its work are the following specifications concerning advanced legislation for agriculture:

Not least important among the measures of the session has been the legislation for the organization of a great drainage district in the Sacramento valley, which is expected to lead to the control of the winter floods and the reclamation of over a million acres of fertile land. Other measures also tending toward industrial development on a large scale are but little less important, such as the arrangement to continue irrigation and other investigations through co-operative efforts by the State and Federal Governments, the creation of a board of forestry, the cession of the Klamath lake lands preparatory to the development of a large irrigation system in the northern part of the State, the making of appropriations to carry on horticultural, viticultural and agricultural experiments and researches, and the purchase of a farm for the College of Agriculture. The part which the latter will play in the application of science to our leading industry and the solution of difficult problems of practical farming and animal husbandry is destined to be a great one.

Certainly agriculture can not longer claim lack of recognition by the law makers. The agricultural interests are coming into a commanding position in this country and the burden rests upon the representatives of the interest to consider carefully their claims and to unite more fully for the advancement of the understanding of their own industry.

Probably no more fitting recognition of a strong force for the promotion of agriculture in this country has been recently manifested than in the invitation to James Wilson to continue his incumbency of the Secretaryship of Agriculture in the Cabinet of the President. It is not unusual to have a change of furniture when a new presidential term opens, but Secretary Wilson has shown such a broad grasp of his subject, and at the same time such a mastery of its details, that his continuance is but an exponent of the popular judgment of him. He is certainly a good leader in great agricultural affairs.

Wheat in the Eastern markets sold at a lower range than previous week, Chicago declining 3@4c. per bushel, but subsequently recovered the greater portion of the loss. The drop was partly the result of a decision allowing Oregon wheat to be delivered on Chicago contracts. Wheat here remained steady for spot offerings, values neither tending towards the clouds nor drifting in the mud, although clouds and mud were both in evidence with telling effect on prospects for coming harvest. Barley is firm for immediate delivery, with little offering. The arrival of a 2,500-ton cargo of oats from the North is causing some anxiety; it may be dispatched to Japan; choice oats continue scarce. Corn is bringing good prices, both for shipment and local use. Beans are quiet at the generally stiff prices asked. Bran and middlings continue steady. Rolled barley has been marked up 50c. per ton. Hay values are being poorly sustained, owing to weather conditions. Prices for beef rule steady. Veal is in heavy supply and market weak. Mutton market is firm. Spring lamb is in better supply and prices easier. Hogs are not quotably lower, but tendency is to easier figures. Butter is cheaper, through decreased shipping demand. Cheese is arriving more freely and there is some shading of values. Eggs are being actively sought after by speculators, causing further stiffening of prices. Poultry was not in excessive receipt; choice brought good figures. Potatoes of fine quality were not neglected. Onions moved slowly at prices asked. Oranges of high grade were in good demand; choice Navels of the smaller sizes were most sought after. Prices for lemons and limes unchanged and stocks ample. Dried fruit market firm for everything except medium size prunes and common raisins; little else offering. Honey is going to Europe, one steamer this week taking 200 cases, making 400 cases in two shipments within three weeks for Germany. Beeswax is being shipped to Belgium. The wool sale of the Growers' Association of Yuba, Butte and Sutter counties is to open at Marysville May 5th; conditions warrant good prices.

The pear blight work has begun sharply under the co-operative auspices of the State University and the Washington Department. On another page we print the proclamation of the Sutter County Commissioners in whose parish field work is now being done. All who are apprehensive about the pear blight should read the statement published elsewhere in this issue. It will help all to discover the disease and to take up arms against it. There will come later, of course, the summer and fall campaign, but it is well to start in at once and not wait for it. It is an interesting fact that one may be mistaken as to what is the blight and what is not. We are constantly receiving samples of ordinary die-back for diagnosis. Prof. Woodworth went over into Contra Costa county the other day to look into a case of bud failure which was held to be the blight, but he found it to be the work of thrips, like that which is doing so much injury to the bloom buds of other fruits in Santa Clara county and for the investigation of which the county supervisors have just made an appropriation of $500. This thrip injury is a serious business which must be hunted down, but it is not the blight.

Naturally the insect pest business is active. These organisms usually open business in the spring with renewed energy and the conflict should also be on early. The codlin moth spraying will continue in the Watsonville district, largely with lead arsenate, probably because this preparation is less dangerous to the foliage. It should not be forgotten, however, that lead arsenate must be used four times the strength that Paris green is, because the arsenic content is so much less and to use it with the same weight to the amount of water will fail. The lead arsenate spray costs therefore more than Paris green, but there is less danger to the tree. Where this danger is not a factor, the Paris green is the proper material to use.

California cauliflower has had a good show in the Eastern markets this winter, because of injury to the crop of the Southern States by the blizzard. If our people had only known it, they could have sold vastly more than they produced. California asparagus is coming into the Eastern gap. The Fruit Trade Journal of last week prophesied that California shippers should have a good season this year, as the Charleston asparagus crop will be late, on account of the prolonged cold weather. Advices from Charleston say there is yet no sign of shoots coming through and, as the Charleston crop usually may be depended upon to begin by March 15, it may be seen how late this crop is. The California shipments undoubtedly will profit by this.

The Saratoga Blossom Festival will this year be held on Saturday, the 18th of March. For five years this occasion has attracted each spring a great crowd of visitors to the foothills westerly from San Jose. This year will be no exception, and a cordial invitation is extended by Saratoga people to all those who wish to feast their eyes to come to the hills on March 17th, to be ready for the ride on the following day.

Prof. Holden of Iowa will visit California for the purpose of studying corn-growing conditions. He is one of the leaders of a group of agricultural college men in the Middle Western States who have been conducting experiments in corn growing, the selection and improvement of seed and the adaptation of varieties to different soil and climatic conditions, and they have achieved wonders. We are glad that Prof. Holden is to come and look over the Sacramento valley. It is, however, a little unfortunate that the examination should be made in April, while everything he will see and feel will be exceedingly corny. He could judge better of the suitability of the district for corn if he could see it in July, and he could then form a better idea of the limitations with which corn has to contend. It is simply silly to figure the whole area of the Sacramento valley as a corn field and base calculations upon such data. But Prof. Holden will know well enough that, to judge of the corn character of a country, he must see some corn growing to maturity—and that he can not see in April. He will, however, meet some farmers in the Sacramento valley who know more about corn than the promoters do.

QUERIES AND REPLIES.

California-Grown Seeds and Plants.

To the Editor:—I shall greatly appreciate it if you will advise me if plants grown from seeds and bulbs raised in California are as hardy as those grown from northern seed; also the same information relative to rose and vine cuttings. It is my impression that seed grown in California will produce equally as good, or better, results under the same circumstances and conditions, as seed obtained from a more northerly climate I have reference especially to flower seed, but presume that what would be true in one case would be true in another. I shall be obliged for any information you may be able to give me, either in favor or against California seed.—Investigator, Chicago.

Concerning the relative standing of California and northern grown seeds, bulbs and plants, we can only say that the matter has not yet been determined by accurate competitive experiments, but wide experience and commercial judgment are, in a way, quite a satisfactory demonstration of the standing of the California grown products. It is probably true that with some seeds there is an advantage in moving from the more trying northern conditions to the more favorable southern environment, but on the other hand it has been shown that seeds. bulbs and plants reach so much fuller and stronger development under California conditions that the trade distinctly prefers them and the largest dealers in the Eastern cities are each year securing a greater portion of their stock from California growers, who produce it under contract with them. There is, then, perhaps, comparison to be made between the advantage of moving from a shorter season to a longer one and the other advantage of starting from a stalwart stock, secured under conditions most durable for growth. The demonstration seems to be clearly in favor of the latter advantage, especially with reference to flower and vegetable seeds. There are interesting experiments now under way, under the auspices of the United States Department of Agriculture, to determine whether California can not produce Holland and other bulbs which are now im-

ported from Europe and our most experienced bulb grower, Mr. Carl Purdy, of Ukiah, is strong in the belief that these experiments will demonstrate the superiority of the California grown stock over that imported from Europe. As for grains and forage plants, less has been done in California on those lines and there is an impression favoring the northern grown seed, but this matter has not been fully worked out by comparative tests and the impression may not be correct.

As between roses grown in the open air in California and those propagated under glass at the East, there seems to be no room for doubt that the superior size and stockiness of the California plants places them incomparably in advance of the Eastern stock, and, as you probably know, quite large enterprises are under way in southern California in the propagation of roses and some other plants, the product being distributed from St. Louis and, perhaps, from other points by the California growers.

Peanuts and Sugar Beets.

To the Editor:—What soil is best for peanuts and sugar beets, and what time is best to plant? Are peanuts to be planted in the shell, or is it best to break the shell first? My water for irrigation can not be depended on after July 15th; will that be too early for it to stop?—Farmer, Fresno.

Both peanuts and sugar beets grow best on a good loamy soil—the lighter loam, however, for the peanuts and the heavier loam for the sugar beets. Sugar beets can be planted at once, as they are not liable to frost injury. Peanuts should be planted later, when all danger of frost is over, the time generally being the first part of May. The kernels of peanuts should be carefully removed from the shell, so as not to break the skin of the kernel, and all defective kernels should be rejected. It is usual to plant in rows about 3 feet apart, one kernel in a place at distances of 18 inches in the row. It is better to grow the crop without irrigation, and if the ground is wet down thoroughly before the final preparation for planting the crop, will probably come out all right if well cultivated to keep the surface loose, and thus prevent loss of moisture by evaporation.

Tobacco Growing.

To the Editor:—In regard to silk and tea culture received, I thank you very much for the information given. Once more I will ask other information, viz: Has tobacco been experimented with here in southern California? If so, I would be glad of any advice you might give on the subject.—Promoter, Los Angeles.

The difficulty with tobacco growing is very different from that which we described as affecting the growth of silk and tea. Tobacco grows very readily in California and produces heavily; but the difficulty lies in the curing. There is no trouble about drying the leaves—in fact, they dry too quickly and do not cure properly; consequently, do not have the silky texture which is desired. The problem of tobacco production in California has been taken up in all parts of the State during the last twenty-five years, large sums of money have been lost and the only place at present where a product, said to be commercially satisfactory, is produced is in northern Sonoma county, where the crop is largely grown under cloth cover, and a warehouse, to regulate the temperature and moisture of the air, is employed for curing. One of the latest disappointments in tobacco growing was in the Cajon valley, in San Diego county, where considerable investment was made and disappointment resulted, owing to the difficulty of handling the crop after it was successfully grown.

Planting Walnuts.

To the Editor:—I write you concerning the planting of an English walnut orchard. From several articles that I have read I thought the best way was to plant the black walnut where the tree was to be grown, and then, when large enough, have the English walnut budded into it, but I have just been informed that the nuts from such trees are not as salable as those grown on their own roots, on account of there being more partitions in them, like the black walnut.—Inquirer, Colusa.

Your informant is mistaken. The black walnut root does not produce such effect as is described. Whether it is best to plant the black walnut seed and grow the seedling in place to be grafted afterwards, is a question not yet determined. It is a fact, however, that nearly all the thousands of acres of English walnut trees now producing nuts in California were planted with trees grown in the nursery and not in the field. You can buy from the nurseryman all the popular kinds of English walnuts grafted upon the California black walnut root, and if we were starting a plantation of that kind we should use such trees.

Tocalote or Napa Thistle.

To the Editor:—I find seed of a weed which is called tocalote in some barley I bought in the San Joaquin valley. Is it a bad weed?—Farmer, Ventura county.

The plant known as "tocalote" is commonly called Napa thistle and is Centaurea melitensis. It is a slender annual with prickly leaves and flower heads and is a great nuisance in hay fields. It does not seem to be generally common in southern California, although widely distributed in the central and northern parts of the State. It usually seeds pretty late in the fall; so if you are diligent about cutting early enough, you can prevent its spreading.

Killing Ants in Vineyard.

To the Editor:—Please give a preventive of red ant destruction of new grape vines. In refilling an old vineyard nearly every miss shows a red ants' nest. I am unable to find any remedy to a successful extermination of them or a probable preventive of them harming the new plant or vine. Do you know of a remedy either to prevent or exterminate them?—Planter, San Diego county.

The best way to kill ants when you find their nest in the ground is to clear away around the opening and pour in about an ounce of carbon bisulphide, covering the whole at once with dirt. This liquid evaporizes and kills everything in the hole. It is the same material that is used for killing squirrels and can be bought at all general stores. Some, however, succeed tolerably well by the free use of boiling water in the hole, but in that case there is a good deal of trouble in being sure that the water is boiling hot and in using enough of it. The bisulphide treatment is better.

Identifying Resistants.

To the Editor:—How can I find out if the proper resistant stocks are being sold to me? For example, suppose I want Rupestris and Riparia, 3309 or 3306, do I have to get an expert to pass upon them or can I learn to distinguish between them myself? I have read "California Fruits" and articles in the Pacific Rural Press for the last four years, but they fail to give me the necessary information. If you can advise me on this subject, I will greatly appreciate it.—R. H. S., San Francisco.

You can learn much about the character of the different resistant vines by getting the University publications describing them, but these are small characters, which only careful study and experience will make you master of. With the newer kinds, which have not been grown long enough to impress their characters upon growers, you must depend upon the man from whom you buy to have kept his records and his plantings straight.

Transplanting Conifers.

To the Editor:—Kindly give advice as to transplanting pines and firs (three years old) immediately from nursery row, giving the proper time and any particular manner.—E. L. A., Payette, Idaho.

Transplant about at the beginning of the growing season, after the soil has become thoroughly warmed. Have holes prepared beforehand. Take up the trees with a ball of earth and water-settle the ground around the ball in the new place, filling in with loose soil after the water has all soaked away.

Lippia for Cemetery Lot.

To the Editor:—We have a cemetery near a country church and would like to do something towards beautifying it. It is on ground known as hog wallow; water not very plenty. Could a lot be planted with lippia and watered by hand?—Enquirer, Tulare county.

Lippia should do better than anything else we know for such a situation, but if the watering is to be scant and fitful, as is usual in such a place, the plant should be started earlier in the season so as to become established before the drouth comes on. It will stand much drouth, but we rather think it does not care to start in on that basis.

Not Pear Blight.

To the Editor:—Herewith I send you two pear twigs. Please state whether they are affected by pear blight.—M., Aptos.

It is not pear blight. It is simply a die back of twig ends from some cause, which the twigs do not talk about. Suggestions for recognition of pear blight are given on another page of this issue.

Forage Corn.

To the Editor:—Will the Pacific Rural Press please tell me the quantity of sweet corn generally used to sow one acre broadcast, where the object is to procure green feed for the cows?—R. T., Vallejo.

It depends upon the land to some extent—the moister and richer the land the more the plant will stand crowding. The average for broadcasting would be about 75 pounds to the acre.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 13, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Warm and partly cloudy weather prevailed most of the week, with light northerly winds. Rain commenced falling Saturday, accompanied by high southerly winds, and continued through Sunday and to-day. The rain and wind caused considerable damage to fruit trees in blossom, but grain and grass were greatly benefited by the timely precipitation. Crops made good growth during the week, and the outlook for excellent yields is even better than last week. Both the early and late sown grain are in excellent condition. Green feed is plentiful in all sections. Deciduous fruit trees are all in full bloom and give promise of large crops. Oranges are also coming into blossom.

Coast and Bay Sections.

Abnormally high temperature and generally clear weather continued most of the week. Maximum temperatures of 80° to 86° occurred in many places. Warm rain commenced Saturday and continued up to present writing, accompanied by high southerly winds. The heaviest rainfall reported was at San Luis Obispo, where 4.28 inches fell in twenty-four hours. Other sections received an abundance of rain and all crops were benefited. It is probable some damage was done to deciduous fruits in bloom by the high winds, but no reports have yet been received. Grain and grass made good growth during the week and are in excellent condition in all sections. Green feed is plentiful. Peaches, prunes and nearly all other deciduous fruits are in full bloom. Orange picking continues at Cloverdale.

San Joaquin Valley.

Clear and warm weather prevailed until Saturday, when light showers fell in all sections, turning to heavy rain Sunday, accompanied by high southerly winds, which continue. The rain will be very beneficial to grain and grass, which were already beginning to suffer from lack of moisture. All kinds of deciduous fruit trees were in bloom when the storm commenced and the wind and rain have undoubtedly caused damage, but to what extent can not be estimated at present. While the storm has caused some loss to the orchardists, this has been more than offset by the benefits to grain, grass and stock.

Southern California.

Warm, clear weather continued until Saturday, when rain commenced falling and slightly lower temperature prevailed. The rain was quite heavy in some sections and continued through Sunday until up to this morning, accompanied by high winds. The soil had become quite dry in many places and the rain will be of great benefit to the grain and grass fields. There was probably some damage by wind to early deciduous fruits in blossom. All crops are in far better condition than usual at this date and pasturage is abundant. Alfalfa cutting has commenced. Oranges and lemons are being harvested and some orange trees are in bloom. Deciduous fruit trees are in good condition.

Los Angeles Summary.—The week closed with a heavy rainstorm in progress, which will greatly benefit field crops and orchards, but retard orange picking. Volunteer wild oats are heading and with dry weather will soon be ready to cut.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 15, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.12	23 24	50 01	35.41	70	48
Red Bluff	2 71	28 06	24 90	20 78	82	50
Sacramento	1.56	16 16	12 55	15 42	76	48
San Francisco	.84	17 76	15 59	18 62	76	52
Fresno	.76	8 78	4 55	6 85	80	46
Independence	.46	2 14	1.77	3 29	70	32
San Luis Obispo	1.37	17.70	10 03	16 53	72	42
Los Angeles	3 49	15 64	4 95	13 30	74	44
San Diego	.72	11 41	2 63	6 60	70	50
Yuma	.66	7.27	0.94	2 66	76	52

HORTICULTURE.

Pear Culture in Arizona.

Not only to our readers in our sister Territory to the southeast, but in interior parts of California also, some hints on pear growing in Arizona will be helpful. They were prepared by Prof. A. J. McClatchie, formerly horticulturist of the Arizona Experiment Station, and now a resident of southern California:

The Pear in Arizona.—No fruit is more easily grown in Arizona than the pear. The tree is little affected by the heat of the region, and the blossoms are seldom injured by frost; it is free from diseases or insect pests, bears more regularly than any other fruit, ripens good fruit through a longer season, and is longer lived than any other. The shipping of this fruit may never become especially profitable; but for the local market, and for home use it is the fruit of the region. When its value as food, whether eaten raw, stewed or baked, is fully appreciated, the trees will be set more extensively and the fruit will be used more freely. The fact that the different varieties furnish good fresh fruit from early August to the end of January makes the pear especially adapted to family use.

The principal defect that the pear has in this region is the development of hard "knots" that are embedded in the flesh and become more pronounced as the fruit matures. The different varieties vary in the extent to which they are subject to this fault, some being rendered nearly or quite worthless by their presence, while a large number are free from them.

As most pears become thoroughly mellow only after being removed from the trees, some difficulty is experienced in getting them into a marketable condition without letting them decay. The weather is so warm during much of the pear season that all of the injured fruit decays very rapidly. If, however, care be taken not to pick the fruit until it is thoroughly mature, and to handle it very carefully, much difficulty may be avoided. Varieties differ very much in the length of time required for mellowing after being picked, and in the perishableness of the fruit, some quickly becoming ready for eating, with little loss, and others mellowing so slowly that a large percentage decays before they become palatable.

In considering the merits of varieties of pears that a grower contemplates setting, several factors need to be taken into consideration in this region — productiveness, regularity of bearing, time of ripening, freedom from "knots," perishableness, and quality of fruit. If the pears are to be grown for market, external appearance must also be given due weight. Some varieties bear well, but the fruit is unfit for food, while other varieties produce good fruit, but in too small quantities.

How to Grow Them.—In southern Arizona pear trees do best when set during February; and in other parts of the Territory they should be set later. In so dry a climate the stems are apt to dry out and start slowly if set out too early, thus being exposed to the atmosphere before the season of rapid growth begins. When set, the stems should be cut to a stub 12 to 15 inches high, the roots thoroughly pruned and the young tree set in the soil with the roots as near as possible the same distance below the surface as they were in the nursery. They should be irrigated soon after setting and given water frequently enough during the summer to keep them growing thriftily. In fact there is little danger of irrigating them too much the first season.

The second season the young trees should be pruned to three prong-like shoots that should come off from the stub the first summer. These first limbs should be left only 12 to 15 inches long. Frequent irrigation is still necessary in order to secure good growth, but less frequent application of water is needed than the first season. After the second season the trees need less and less water during the summer.

Varieties. — In southern Arizona pears begin ripening in June. The first to mature its fruit at the Station Farm is the Madeline, but in this section the quality is hardly good enough to warrant setting it for family use, and it is too perishable for shipping far. A few other varieties ripen during June, but none can be especially recommended. No varieties tested at the Station Farm ripen during July, but during August a large number of varieties come to maturity. One of the first and best is the old standard variety, Clapp's Favorite. It bears regularly and heavily and the quality is good. It usually begins ripening about the middle of August and continues in season for a week or two. It ripens well, but is liable to rot from the core outwards. Another good variety ripening about the same time is the Flemish Beauty, but its merits are apparent only after the fruit has been off the tree some time. One of the best pears that ripens during the latter part of August is the Howell, but for market purposes the Le Conte is best. Its season is from the latter part of August to the middle of September. It is smooth, free from knots, and mellows well off the tree. The flesh is somewhat coarse, but the quality is quite good. The tree is very vigorous and prolific, the foliage being heavy and of a deep green color.

The Anjou follows the Le Conte, its season being from the early part of September to about the twentieth. It is somewhat subject to knots, but on the whole the quality is good, the flesh being fine grained and juicy.

The Seckel ripens during the latter part of September, and is one of the most desirable varieties for home use. It is most too small for market, but the flavor is so exquisite that it is highly prized.

During the latter part of October the well-known Bartlett begins to ripen, and will supply the table for several weeks. It is somewhat subject to knots in southern Arizona, but is such an excellent variety that it will naturally have a place in every orchard.

During the latter part of October the Beurre Bosc becomes mellow, if picked from the tree. This is a good-sized russet-colored pear of most excellent quality, one of the best of the autumn pears. The trees at the Station Farm are comparatively small and have not yet borne heavily, but in other regions it is a very productive variety.

The Josephine and the Noveau Poteau ripen during November, the former during the early part, and the latter mellowing so unevenly as to furnish fruit for dessert through the month. The Josephine is a very watery pear, while the Noveau Poteau, before being cooked, is quite dry and mealy. Both are very sweet. The Noveau Poteau is a most excellent pear for baking, becoming deliciously juicy under the influence of heat.

During December the popular variety, Winter Nelis, gradually mellows, furnishing fruit for the table throughout the month. It is one of the most desirable varieties for the orchard, bearing regularly, and producing fruit of the finest quality.

The Patrick Barry mellows during January, and may be kept longer under favorable circumstances. The tree is very prolific and the quality of the fruit is good.

The widely cultivated Keiffer's Hybrid has not proven satisfactory in this region, producing heavy crops of fine looking fruit that never becomes edible.

What To Do for Pear Blight.

To the Editor:—Demonstrations are being conducted in several parts of the State by Prof. Ralph E. Smith and assistants, of the Agricultural Department of the University of California, in co-operation with Professor M. B. Waite.

The Disease.—Pear blight is a germ disease, caused by the attacks of bacterium known as the bacillus amylovorous. Without the presence of this bacteria, there can be no pear blight, no matter how favorable the conditions may be for the disease. This germ enters the tree in three ways:

First—The most important method is through the blossoms. The germs are carried from flower to flower and from tree to tree by bees and other flower-visiting insects. The germs are not blown by the winds. The pear blight germ is a very delicate organism and is readily killed by drying out. The pear blight virus, therefore, is always a gummy, sticky matter. They can not live in dust or in the soil, and to be active must always come from freshly blighted material. The germs are able to enter the nectarines in the center of the flower without a puncture, as this is not covered with a cuticle.

Second—The second method of entry is through the tender tips of growing twigs, water sprouts, etc. In these cases, with few exceptions, a puncture by insects, birds, or some other agency is necessary to inoculate the twigs.

The third method, which is comparatively rare, is directly into the fleshy bark of the branches or bodies of young trees. Here again a puncture by birds or insects, or sometimes by bruises in cultivation, is necessary to introduce the disease.

Once in the tree, the germ may merely kill the blossom cluster or a few inches of the twig growth, or, on the other hand, the infection may extend a considerable distance along the branches, therefore, in extreme cases, a single infection may result in the destruction of the tree, by extending down into the body. The majority of infections come to an abrupt termination on the branches. A distinct line or crack forms between the live and dead bark. In these cases the pear blight germs rapidly die and disappear. In certain cases, the germs are able to keep spreading slowly in the bark until the trees shed their leaves in the fall. In these cases the germs are able to live over winter, spreading slowly, until warm weather comes in the spring. Such cases may be termed "hold-over" blight. They form the infection centers from which the contagion spreads on the opening blossoms.

The gummy exudation from these hold-over cases is visited by flies, wasps and other insects, and carried into the opening blossoms. It is then distributed widely over the orchards by bees and other flower-visiting insects.

Method of Control.—Cut out all blighted branches in the winter time, completing the work before blossoms open. Make certain that the cut is made several inches into the healthy wood. In hold-over blight, burn all infected branches removed from tree. Disinfect with suitable germicide, preferably corrosive solution 1–1000 (one tablet to a pint of water). Use a sponge saturated with this solution and wipe off the knives, saws, etc., after every cut into the blighting tissues. Also thoroughly wipe over each freshly cut surface of the tree. Removal of the hold-over blight in winter is the keynote of successful pear blight extermination.

Secondary treatment consists in summer cutting out of the blight, but the cut should be made from one to two feet below the discoloration, using the disinfectant as above described.

Keep the bodies and main limbs absolutely free from watersprouts and fruit spurs, thus removing the possibility of infection of the most vital part of the tree.

As far as possible in pruning, develop the fruit spurs on small lateral branches, rather than on the frame work branches.

Remember, corrosive sublimate is a deadly poison. Keep the bottle labeled and handle with the greatest care.

The Horticultural Commissioners of Sutter county urge the necessity of immediate action on the part of fruit growers in controlling pear blight. Competent inspectors have been placed in the field and will instruct all pear and apple growers in the county on the identification of pear blight and method of control. By general co-operation on the part of fruit growers, the blight can be eradicated and the pear and apple orchards saved.

Mr. W. H. Volck, of the Agricultural Department of the University of California, will co-operate with the horticultural commissioners in pear blight extermination work.

R. C. Kells,
T. B. Hull,
H. P. Stabler,
Horticultural Commissioners.

Yuba City, March 7.

Phillips' Cling Peach in Sonoma County.

To the Editor:—I enclose a letter from my friend, W. J. Hotchkiss, which I mailed to my nurseryman for inspection. He returned it to me, with the suggestion that it would be a good plan to have the letter published and let others have the benefit of the information. Therefore I requested permission to mail this letter to you for publication in the Pacific Rural Press, which Mr Hotchkiss granted.

Now is the time to profit by this method of spraying the Phillips' cling peaches, as they are now in blossom and making leaves fast. We have had no frost this year. Sun spots bring extreme heat—probably more than needful, if showers fail to materialize two weeks later—but fruit is setting splendidly, never better.

Sonoma, March 8. Robert Hall.

Mr. Hotchkiss' Letter.— Replying to your esteemed favor of the 31st in regard to Phillips' cling peaches, I would suggest spraying these peaches in the winter, immediately after pruning, with lime, sulphur and salt, as those I sprayed last year had a crop, while those I did not spray, like all the rest of the peach trees in the country, had nothing. This lime, sulphur and salt I think also is a help against curl leaf, but I have never sprayed them in the winter until last year.

They will not bear any fruit unless you spray them with the Bordeaux mixture to prevent curl leaf, and if you do this and do it at the right time, you will find them a very heavy and consistent bearer. I spray just as soon as the leaves start out. The fungus germ that produces, or is, curl leaf lies dormant at the base of the bud and develops very rapidly. It gets in its work quick unless the spray is applied at the time the leaves first start out. Some years I have sprayed twice, the second time after the trees were in bloom and the leaves good size and I then put on the Bordeaux mixture considerably lighter than the first. Spraying is a comparatively inexpensive operation and I think for the promotion of vigorous growth, aside from being a preventive of curl leaf, pays for the expense of labor and material.

One thing I would say about Phillips' cling peaches is that you can leave each tree very heavily loaded with them, and if you are careful in picking. If you make the first picking from the largest peaches, just when they are ripe enough, you will find that the balance of the fruit will come on much more rapidly and that even the very small peaches will come to size if you will make pickings enough to take the larger ones off the trees. Do not be afraid that the peaches are going to get ripe in a day or two and fall on the ground like most cling peaches. You can let them hang quite a while; in fact, I have had pickings of the cling peaches in my orchard to go over almost fifteen days.

In many sections the Phillips' cling is not a favorite peach , on account of the lack of knowledge on the part of the people who have the trees, in regard to handling them. It is very thrifty and a sure bearer if properly handled. W. J. Hotchkiss.

San Francisco.

The English Walnut on the Eastern Black Walnut.

To the Editor:—I would say to Enquirer, Ogden, Utah, that I have had a good deal of experience in grafting the English walnut into the Eastern walnut and at my old home at Herndon, Fairfax county, Va., there is an English walnut tree that I grafted many

years ago. At the time I grafted this tree the body was about 6 inches in diameter and had three branches about 7 feet from the ground. I grafted the entire top, putting two grafts in each branch. These branches were sawed off about 6 inches from the body and these stumps were split in the center. The scions used were the extreme end or tips from bearing trees and not over 2½ inches long and cut so one bud was at least ½ inch down the cleft. The wax was put on very hot, and the cleft was well filled with wax. The scions were also covered—top, buds and all. Every graft grew. I have been told that this tree has never missed a crop.

J. Luther Bowers.

Monticello, Napa county.

THE DAIRY.

The Difference in Cows.

We have been hammering away on this subject as long as we can remember, and yet poor cows live. The point now, however, is the difference in good cows—for cows selected for display at St. Louis ought to constitute a sort of a bovine aristocracy—and yet there is a world of difference in them. Hoard's Dairyman claims that in this regard the St. Louis cow demonstration was a great light The truth that was dug out of that 120-day trial of cows was of immense value to every man who has mind enough to appreciate the truth. Here are a few figures to tell a great story:

	Cost of Food.	Profits Above Cost of Food.
Best Jersey	$31 99	$50 50
Poorest Jersey	30 30	26 72
Difference	$ 1 69	$23 78
Best Holstein	$36 57	$46 02
Poorest Holstein	34 68	18 08
Difference	$ 1 89	$27 94
Best Shorthorn	$28 57	$32 56
Poorest Shorthorn	27 69	1 95
Difference	$ 88	$30 61
Best Brown Swiss	$33 49	$27 77
Poorest Brown Swiss	32 21	19 75
Difference	$ 1 28	$ 8 02

Look at those figures, says Hoard's Dairyman: The difference in the cost of feed between the best Jersey and the poorest Jersey was $1.69, yet there was a difference in the value of the product against the poorest of $23.78.

The difference in cost of feed between the best and poorest Holsteins was only $1.89, yet the difference in value of the returns was $27.99.

The difference in cost of feed between the best and the poorest Shorthorns was only 88 cents, yet the difference in the value of the returns was amazing, being $30.61, because the poorest Shorthorn made a profit of only $1.95.

The difference between the best and the poorest Brown Swiss in cost of feed was $1.28, and the difference in the value of the feed was $8.02.

How clearly this shows to the farmer that his poorest cost him practically as much to keep as his best cows, yet the difference in profit between the two is immense. Does this not prove the great value it will be to the farmer to establish some system whereby he shall know just what his cows are doing? Does it not prove finally the tremendous value of our knowing a great deal more than we do about this business?

More Jerseys for the Pacific Coast.

Three of the five cows which won the first prize for the best performance of a group of five belonged to the Ladd estate of Portland. These three cows were last month shipped to Oregon, along with the two that stood in their company in the group of five. Of these cows the Breeders' Gazette says: The five cows are thus named, in the order of their relative standing as revealed by the figures of the test, Loretta D., Diploma's Brown Lassie, Eurybia, Dorinda Darling and Prize May's Duchess 2nd. It is interesting to note that the blood lines prominent in the Columbian test are also to the fore at St. Louis. Three out of the five mentioned—the first, third and fifth—represent largely the Tennessee lines of breeding, while the second and fourth are rich in the blood of Combination, which achieved such prominence in the Columbian test. Years ago Messrs. Richardson selected for the Ladd estate quite a number of Jerseys of Combination blood, which proved so satisfactory that Mr. Ladd requested them to secure for him several more representatives of this potent strain to be shipped West with the cows from the St. Louis test. Nine choice cows, chiefly of this line of breeding, were bought and all were assembled at Orfordville, Wis., and shipped by express from that place last week, constituting probably the most valuable consignment of Jerseys that has yet been headed toward the Pacific coast. They were selected by J. J. Richardson, who was chairman of the committee of the American Jersey Cattle Club, which carried the Columbian and the Louisiana Purchase Exposition tests to a triumphant conclusion for the Jerseys.

FLORIST AND GARDENER.

New Potatoes as Seed for Second Crop.

To the Editor:—At your request I prepare the following brief statement of my experience with "new potatoes" as seed for the second crop planting. I planted Burbank potatoes for the spring crop in February, about the 10th; began to dig the same date in June, and did not finish until June 24th. Land selected for fall planting had formerly been in alfalfa, and had been plowed twice during the winter and spring. I irrigated this land July 4th, and began to plant July 6th. I used seed that averaged about the size of an egg, or a trifle larger. These potatoes I cut in two lengthwise of the tuber. I dropped them 14 inches apart. By the 20th of the month a potato sprout could occasionally be found above ground. From the middle to the latter part of July we had exceptionally hot weather for this section, and many potato sprouts were scorched just beneath the surface of the ground. On the heavier, dark land, little damage was sustained, but on the light, sandy soil (a few rows separated from the main patch), about 70% of the plants were practically ruined.

The potato plants on the alfalfa ground grew vigorously. I gave them good culture, and irrigated them twice a month. On the 22d and 23d of July I planted another patch of potatoes on practically the same kind of land (alfalfa land) and used the same seed. The stand was about the same as the earlier planting, good. The later planting, however, set much heavier than the first, and but for one of the severest desert winds we have ever experienced here, on the 16th of October, I think would have given a very satisfactory yield. The second planting was very much damaged by the wind. The first received slight damage. The first planting yielded approximately sixty sacks of potatoes to the acre, the second planting just about half that.

I also tried a fertilizer experiment on the first planting. I applied the special potato fertilizer, put out by the A. C. W. Co. of Los Angeles. I applied the fertilizer at the rate of half a ton to the acre on three blocks of six rows each, leaving six rows untreated between the blocks as a check. I also used nitrate of soda on four rows. The potatoes in the fertilized rows were a trifle smoother than in the rows not treated, but not enough so as to begin to pay for the fertilizer and cost of applying. The nitrate of soda rows gave the best returns of any in the field. We suffered considerable damage from the potato worm the past season, and altogether the year 1904 must be recorded a poor potato year with us. If there is any point in my potato experience of the past season upon which you would like further information I shall be pleased to attempt to furnish it.

Isaac Jones.

Etiwanda, San Bernardino county.

This is very interesting. We shall be glad to hear of any further experiments you undertake.

The Camellias at Sacramento.

Although the Camellia Japonica succeeds widely in California, it is probably most highly esteemed at Sacramento, where conditions are just to the liking of the plant. From recent notes in the Union we take interesting paragraphs:

The introduction of this queen of winter flowers in Sacramento took place quite early, and some of our larger specimens are at least forty years old. Before 1857 there was established on the outskirts of Sacramento, near the Tivoli section, a fine ornamental garden and nursery by the Smith brothers, and one of their earlier investments was the importation of several hundred camellia plants. Although of small size they sold readily at $5 and $10 each, and from this stock many of our larger plants originated. After these gardens were swept away by the flood of 1862, the interest in camellia culture continued, as it was evident the soil and climate brought them to perfection, and many citizens sent for new varieties from the conservatories of the East and from Japan. It is not generally known that some fine sorts are of American origin—the Hoveys, near Boston, having made a specialty of producing the most beautiful varieties. It is probable there are in Sacramento at this time over fifty kinds in full bloom, and there are several specimens over 15 feet high and carrying over a thousand flowers.

Dr. G. L. Simmons, whose home adjoins Capitol Park, is a lover of the camellia in all its stateliness and beauty. In his fine yard the camellia in winter more than takes the place of the rose in summer. Thirty-two varieties of the camellia grow flourishingly. Every shade of coloring, from pure white to darkest scarlet (including a single pink, variegated flower that is rare), are in full bloom. A beautiful double white serrated blossom is one that probably attracts more attention than any other.

The camellia, according to Dr. Simmons, thrives best in the shade, and he thinks if camellias instead of roses—the life of which depends upon sunshine—were planted along the western end of the Capitol Park, under the spreading pines, they would soon cover that strip of the park with winter blossoms that would do more to advertise Sacramento than the profusion of roses to be seen on the lawns of the city in spring and summer.

THE IRRIGATOR.

Important Valley Problems Illustrated by Kern County.

By F. C. Finkle, Consulting Engineer at the University Farmers' Institute at Panama, Kern County.

The matter of extending the irrigated area in that portion of the San Joaquin valley which is embraced within Kern county, Cal., is an extremely important one. At the present time but a small part of the arable lands in this locality are being irrigated, owing to a lack of sufficient water supply for the purpose. If the county of Kern is to continue to expand and increase in population it is essential that the solution of this problem be sought and found.

There are two ways in which the subject may be viewed, namely, from the standpoint of a business man and from the standpoint of an engineer.

The business man will at once say: "It is commercially profitable to further extend the irrigable lands of Kern county if water can be applied to them at a reasonable cost."

Will It Pay?—In answer to this I wish to say that I have consulted most of the leading agriculturists in the county and the consensus of opinion seems to be that, if water can be supplied at a cost not exceeding $3 per acre annually, it would be profitable to reclaim the poorest land in the valley. Of course there are many lands which would be able to stand a much greater charge than this for water if brought under an irrigation system. Such lands are those situated on the higher levels, where first-class crops of fruit can be grown, particularly right in the foothills, where citrus fruit culture would be a paying industry.

Can It Be Done?—The problem from an engineering standpoint, therefore, becomes one of finding, if possible, a supply of water which will not only enable the extension of the irrigated area, but which will permit this to be done at a cost placing it on a commercial basis.

At first glance it might seem almost a hopeless task to find water for the irrigation of all the tillable lands in the San Joaquin valley lying in Kern county. Roughly stated there are 1,000,000 acres of such lands, of which about 800,000 acres would produce first-class crops of alfalfa and fruits if irrigated, there being approximately 200,000 acres of land either too wet to require irrigation or impregnated with alkaline salts. No actual survey has been made to determine the precise acreage, but these are close approximations and are sufficiently accurate for all present purposes. Of course a portion of this 800,000 acres is already irrigated from the waters of Kern river and from some pumping plants operated at intervals. This portion, however, is quite small (probably averaging not more than 200,000 acres annually during the last ten years), being a variable quantity as the amount of water yielded by the Kern river is not constant, but depends upon the rainfall in different years.

How Much Water is Needed?—Before a further consideration of the source of supply by which the remainder of this 800,000 acres can be put under irrigation is entered upon it becomes important to determine how much water is needed to properly irrigate this land for intensive cultivation. Inquiry among the irrigators of Kern county will reveal the fact that the duty of water is a variable quantity; some irrigators have been able to produce excellent crops with about ½ acre foot to each irrigation, while others have used as much as 2 acre feet for each irrigation, and, in extreme instances, even more water than this has been applied. It will of course be impossible to lay down any fixed rule by which the duty of water for all land in this locality can be determined; the nature of the soil and the kind of crop grown, as well as the skill of the irrigator, all enter into the problem. After carefully considering the question in relation to the whole area and the result which can reasonably be expected from practical irrigators, it is my opinion that the annual duty of water would be a mean of 4 acre feet. At this ratio it would require 3,200,000 acre feet to irrigate all of the tillable lands of the San Joaquin valley lying within Kern county.

Records of the flow of Kern river have been kept continuously since the year 1894 up to the present time, covering a period of ten years. During this time the greatest discharge of the river was during the year 1895, when a total of 1,023,058 acre feet was discharged at "first point of measurement." During the same period the lowest quantity discharged by the river, at the same place, was 251,743 acre feet, in 1898. From this it will be seen that all of the water of the river during the past year in this decade would have irrigated only 255,764 acres, and in the lowest year 62,936 acres, according to my duty of 4 acre feet per annum.

Tight Ditches Not Enough.—This shows that the watershed of the Kern river does not discharge

sufficient water annually to irrigate all these lands even if every drop were saved and beneficially applied. It therefore becomes necessary to seek a different solution to the problem. The first question arising is that of the possibility of extending the cultivation of lands by improving the present irrigation system and saving the waste of water now occurring in these systems. It has often been stated that this can be done, some persons even going to the extent of saying that the present irrigated area of Kern county can be doubled by cementing the canals and thus saving the water unnecessarily lost by seepage and evaporation. It is my opinion that this notion is held by those not familiar with the subject and that but little can be accomplished by cementing the canals in Kern county. Measurements made on these canals show that the percentage of loss from the point of diversion to the point of use on the lands is not enormously great and that even were all of the loss saved it would not be possible to add to the irrigated areas approximately more than 20%. We all know that it will be impossible to save all losses, as even with cemented canals there is some loss by percolation and the loss by evaporation is almost as great as in natural earthen canals. A portion of the water lost by seepage in these earthen canals is also of benefit to the lands, particularly in a flat country like Kern county. The water seeping from the banks of the main canals and laterals, where these pass through cultivated districts, certainly tend to render the soil humid for a considerable distance on each side of the water way. It would, therefore, not be right to assume that all of the water lost by seepage from these conduits is a loss and waste.

But the most important light in which this subject must be viewed is, would it pay to cement all of these canals for the saving to be obtained? After carefully figuring this matter out in detail it is my opinion that it would not pay to cement any great portion of the canals now used for irrigation in Kern county. The cost of so doing would add so enormously to the cost of water as to place a very heavy burden upon all irrigators and this would more than destroy all benefit to be derived from the saving of water in so doing. It is possible, however, to cement some portions of the canals for conducting the water from the points of diversion to some of the leading branches and thereby greatly benefit all of the users of water under the systems, particularly in dry years.

Other Ways Proposed.—The solution of this problem must therefore be found in other ways than that of conserving the present waste of water by seepage and evaporation from the canals. Something can be accomplished by properly educating the irrigators to an economical use of water, but this has already been done to a great extent, as the three dry seasons from 1898 to 1900, inclusive, compelled the irrigators in Kern county to economize in the use of water, and they thereby learned a valuable lesson which will not soon be forgotten. These dry seasons also taught them another lesson, namely, that it is possible to pump water for irrigating certain land in Kern county. The experiment of pumping water has been tried with marked success in many parts of the valley and the profits derived from irrigation from these pumping plants are not disputed.

The pumping plants heretofore have been simply for the purpose of assisting the irrigation of the lands now under cultivation during certain periods of low water in the Kern river. No attempt has been made to irrigate new lands by means of pumping plants and, as far as I know, no such thing has ever been considered. The popular objection to such an undertaking is that all of the non-irrigated lands lie at a considerable elevation above the water plane underlying the same and the cost of pumping water from beneath the soil for these lands would be excessive. The irrigated lands in Kern county at the present time, speaking of the San Joaquin valley portion, lie almost entirely below the 420-foot contour. No lands along Kern river, except a small tract on the Rio Bravo ranch, just below the mouth of Kern river canyon, are irrigated from the waters of the Kern unless they lie below the 420-foot contour. Some small tracts are irrigated from other small streams, but these are so limited in area as to be almost unworthy of consideration.

Planning to Use Water Twice.—Like every other question, however, there is a solution to this matter which can be worked out if all of the interests in the county unite in the undertaking. The solution which I propose is the diversion of the Kern river by means of canals on both sides, at a point immediately below the power house of the Bakersfield Power, Transit & Light Co. The elevation at this point is not far from 800 feet above the sea level and by means of canals diverted at this point most of the land lying between the 420-foot and the 800-foot contours can be covered with water. This method would mean the abandonment of irrigation from the waters of the river of nearly all the land below the 420-foot contour, since the supply of the stream is not more than sufficient to furnish water for the lands lying above the 420-foot and below the 800-foot contour. If this project is to be executed, the solution of the water supply for the entire valley would, in my judgment, be solved, since the water plane under the lands below the 420-foot contour permits the profitable pumping of water for the irrigation of all these lands. A portion of the river would still be available for storage in the Buena Vista reservoir, which would irrigate a considerable portion of the lower lands. It would be impossible to divert all of the streams into the upper canals at all times, both because of the magnitude of the floods and because there are certain seasons of the year when the water would not be needed and could be passed down to the lower levels.

Storage Reservoirs.—In order to render this project feasible to the greatest extent, however, it will be necessary to provide some storage in the mountains, as the fluctuating flow of the streams makes it impossible to properly distribute the waters without regulation. There are such storage reservoirs in the mountains which could be improved, but time does not permit the consideration of this matter in detail at the present moment. It is sufficient to say that from this side of the question there is no insurmountable obstacle in the way and that the waters of the Kern river can be so regulated in the mountains as to produce practically uniform discharge throughout the year, or a discharge which can be varied from time to time to suit the requirements of agriculture. This applies in all ordinary seasons and the only exception would be in the case of an abnormally heavy rainfall, when there would be enough water discharged from the watershed not only to fill all the possible reservoir sites, but also to fill the present reservoir at Buena Vista lake.

Pumping.—The other side of this question, namely, that of pumping water sufficient for all the lands which would be deprived of water supply below the 420-foot contour, is equally simple and feasible. The water planes below these lands lie at a depth of anywhere from 2 or 3 feet to 15 or 20 feet. The fill of the valley below the surface soil consists of sand and in nearly every locality will yield its water quite freely. Tests made with these sands show that they contain from 20% to 35% of water, depending on locality. Of this quantity from 10% to 20% can be withdrawn by means of pumping and applied to the surface of the land. By considering the area of the valley, it becomes at once apparent that an enormous quantity of water is stored beneath the soil in this part of Kern county. Borings in the valley outside of the limits of the 420-foot contour show that this water plane extends to higher levels, but at a greater depth below the surface, and that it gradually slopes down towards the thalweg of the valley. The outlet of this enormous quantity of percolating water in the soil is northerly through the San Joaquin valley towards the Stockton slough. The movement of this water is extremely slow and it can hardly be conceived to be more than a few hundred feet per annum on an average. The practical side of this problem is whether the withdrawal of the required amount of water for application on the surface of the land would in time exhaust the supply and make it unprofitable to pump water even on these lower areas, where the water plane is now so close to the surface.

The Plan in Detail.—After carefully studying this side of the question, I feel justified in giving the following conclusions:

First.—The water pumped from beneath and applied to the surface would largely return to the underground reservoir beneath the soil after it has served its useful purpose in irrigating the land. The conditions in the locality referred to are such that from 50% to 70% of the water pumped would again sink and become a part of the subterranean supply below. The 50% or 30%, as the case may be, which is lost, would be consumed in plant life and evaporation from the soil.

Second.—The pumping out of a quantity of water from the water plane in these lower portions of the San Joaquin valley in Kern county would lessen the hydraulic grade of the water plane in a northerly direction and diminish the discharge of water from the locality toward the Stockton slough, and the quantity of water thus intercepted would largely compensate for the consumption of plant life and loss by evaporation in the pumped water.

Third.—The winter discharge of the various small watersheds surrounding this part of the San Joaquin valley during the rainy season would restore the water plane during the time when irrigation is not practiced.

Fourth.—The use of all the water of Kern river on the lands lying above the 420-foot contour would create a larger amount of return or seepage water from the irrigation at that point, which would replenish the deficiency incurred by pumping and using the water below the 420-foot contour.

How It Would Work.—Referring to these matters more in detail the following points are interesting:

In a valley where the surface soil is loose and sandy, it is well known that a greater part of the water applied for irrigation returns to the water plane below the land. This has been abundantly proved by stream measurements made in the vicinity of irrigated sections in many of the States of the arid West. To fix the absolute percentage is of course impossible, unless an experiment has been made for obtaining data over a long series of years; but a conclusion can be drawn from analogous conditions elsewhere. This warrants the assumption which I have already made of from 50% to 70% being returned to the water plane under the conditions existing in this part of Kern county.

(to be continued.)

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JOHN A. SALZER SEED CO.
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Agricultural Review.

Butte.

ORANGE GROWERS FAVOR ORGANIZATION.—Oroville special to Sacramento Bee: The committee on organization of the Butte county orange growers held a meeting Saturday afternoon. E. W. Fogg reported that he was having great success among the Oroville orange growers. I. C. Hussey said in Thermalito the orange growers favor organization. Glenn W. Miller, who is canvassing in the Wyandotte section, made a similar report, as did James Fitzgerald in regard to the Palermo growers.

MYRIADS OF BUTTERFLIES.—Chico special to Sacramento Bee: During the late fall and summer the neighborhoods of Powellton and Stirling City, in this county, were invaded by myriads of butterflies which would, one day, make a flight in one direction and, the next, apparently leave for some other. They had been presumed to have all died during the following cold spell, but are now again making their appearance in large numbers, though not to the extent of the fall flight. In tearing down a large barn at Powellton this week hundreds were found, apparently lifeless, in every crack, but after being exposed to the sun a short time they revived and commenced to fly around apparently as lively as ever.

A BEET.—Chico Record: If there are any who doubt the fertility of Chico soil they would have been impressed yesterday by viewing a sixty-five pound beet grown by C. A. Somes. This huge beet was from a seed planted just one year ago, and it was grown without irrigation.

HOW FRUIT TREES GROW NEAR CHICO.—W. L. Walker, who has a small orchard in the eighth subdivision to the Bidwell rancho, was yesterday exhibiting a specimen of tree growth in the shape of a limb from a prune tree which is 12½ feet in length which grew last year. The tree from which it was cut is ten years old. The land was not irrigated, but the owner attributes the great growth to the fertility of the soil, of which he says there is 17 feet of rich loam before the first gravel streak is reached.

Contra Costa.

CARLOAD OF ASPARAGUS BY EXPRESS COST $1000.—Antioch Ledger, March 11: W. E. Meek shipped a full car of asparagus by express to Chicago and Eastern points Wednesday night. The car was handled by overland train No. 8. There will be another car shipped Friday night and one Saturday night. They are packing several hundred boxes per day and rushing matters as best they can. Mr. Meek says it is a hard proposition to secure labor in Antioch and he has to rely on outside help to carry on the business satisfactorily.

Kings.

EGGS FIFTY CENTS APIECE.—Hanford Sentinel: Howard Lane received two baskets of eggs from Omaha Thursday that cost him $10 for the setting. They are of the Princess White Leghorn variety.

Madera.

INSPECTOR OF RESERVE.—Tribune: Forest Supervisor C. H. Shinn and Forest Inspector H. D. Langville of Washington, D. C., are making an extended tour of inspection of Fresno Flats and expect to cover the entire reserve, and will mark the timber recently sold to the Sugar Pine Company. Mr. Shinn now has full charge of the Sierra reserve, the office of superintendent having been abolished. A. H. Hogue, one of Mr. Shinn's subordinates, has been promoted two grades to the office of forest supervisor of the Modoc reserve, and Boot Taylor has been named by Mr. Shinn to succeed Hogue. Mr. Shinn says that he can now state positively that the Government will permit a limited number of sheep to graze in the snow brush country above the cattle range.

Riverside.

LAVENDER HONEY.—Enterprise: San Bernardino County Bee Inspector R. B. Herron has received from the Department of Agriculture at Washington the packages of lavender and savory seed which will be planted here for the purpose of experimenting to see whether the shrubs will thrive in southern California as well as in southern France. The object is to secure a flowering shrub which will furnish honey during the summer months when the black and white sage is not flowering. If this is a success the seeds will be widely sown and a yield of honey obtained during August when now little or none is secured. In the event of success the department will send large amounts of seed for free distribution. Mr. Herron states that he has already proved that lavender will grow as thriftily and under like conditions as the wild white and black sage.

ONE HUNDRED THOUSAND ACRES ALREADY PLANTED.—A San Jacinto dispatch says: Recent rains have brought to a close the greatest agricultural revival known in the San Jacinto valley. Thousands of virgin acres have been seeded to wheat and barley, as well as great sweeps of land that for several years have proven unprofitable. A bumper crop is expected. Only a calamity, it is averred, can prevent a rich harvest. One big farming company, operating a steam plow, has seeded 11,000 acres. Individuals have seeded fields that vary in extent from a few acres to several thousand. One hundred thousand acres is considered a conservative estimate of the area that has been planted in this vicinity. Already the grain is well up and the only fear felt by the ranchers is that there will be too much of it.

San Joaquin.

PAID $8500 FOR RANCH OF FIFTY-SIX ACRES.—Lodi Sentinel: Delos Beardsley has sold his ranch, about 5 miles southeast of Lodi, to Frank Williams, recently of Stockton. The ranch contains fifty-six acres, eighteen being in vines. The price paid, exclusive of farming implements and stock, was $8500.

Santa Cruz

A NEW INDUSTRY THAT PAYS WELL.—Watsonville Pajaronian: For some time past there have been large shipments of ground squirrels from Pajaro depot—last Saturday evening the shipment totaled 750 pounds—and a quiet investigation disclosed that certain parties in this section are making big money by going in on ranches and shooting ground squirrels. These are carefully gathered up and shipped to San Francisco, where the large size readily command 95c per dozen from the tamale manufacturers, and the small sizes are eagerly snapped up at $1.25 per dozen by the restaurants that make a specialty of frogs' legs.

Shasta.

STOCKMEN MEET.—Millville special to Sacramento Bee: The Shasta County Live Stock Association held its annual meeting at Millville Monday and elected the following officers: J. P. Dunham, president; Fred Dersh, vice-president; P. C. Pawley, secretary, and Joseph Hunt, treasurer. The association is only four years old, yet it numbers 200 members, comprising every stock grower of importance in Shasta county. It is largely a protective association, designed to prevent stock stealing. It offers a standing reward of $100 for the arrest and conviction of any one caught stealing stock, and last year succeeded in convicting one stock thief.

Sonoma.

EGGS TO ARIZONA.—Santa Rosa Press-Democrat, Feb. 18: The statement is repeatedly made in various publications that eggs are not shipped out of the State and that large importations are made each year. This is erroneous, as large quantities of eggs are shipped to Nevada, Arizona and even to the islands of the sea every year from California. The Santa Rosa Poultry Association shipped thirty-six cases of eggs to Clifton, Ariz., yesterday and last week sent as many to Nevada. The larger grocers all ship to Arizona and Nevada from time to time to supply regular customers.

LARGE RANCH SALES.—A. W. Foster, president of the California Northwestern railway, has purchased the Fair ranches in Sonoma and Napa counties. This sale comprises the Bihler ranch, near Petaluma, of 9300 acres, and the Adams ranch of 7000 acres in Berryessa valley. The price paid was $485,000. About twelve years ago James G. Fair paid $245,000 for the Bihler ranch alone. The Santa Rosa Press-Democrat says: The sale to President Foster includes all the valuable live stock, consisting of several hundred horses and cattle, as well as the farming implements, etc. On the Lakeville ranch are several hundred acres of vineyard and a large winery with a capacity of one million gallons. Every acre of the ten thousand on this ranch is good land and it yields big crops each season. Hundreds of acres is rich laguna soil, which produces thousands of sacks of potatoes annually.

PLANTED MANY HOPS.—Santa Rosa Press-Democrat: John L. Peterson, the well-known hop grower, went to Ukiah Wednesday and purchased thousands of hop roots which will be planted out in his new yard near Litton Springs. Mr. Peterson is planting eighty acres of hops there and has acres of hop vines already in the ground. Dr. J. Wesley Clark for weeks past has been busy planting out his 40-acre hop yard on the outskirts of the city. Hundreds of acres of hops are being planted in Sonoma this year. Nearly all the hop growers are adding to their acreage and many others are embarking in the business for the first time.

Shasta.

MAPLE SUGAR.—Redding Searchlight: Charles Paige, who lives on Boulder creek near the confluence of that stream with Clear creek, back of Shasta, was over Wednesday with a novelty in the shape of Shasta county maple sugar. It was made by Mr. Paige from maple trees growing on his farm.

Stanislaus.

EXPERIMENTING WITH WHEAT.—Much interest is being manifested in the wheat experimental station which the Government has established at Modesto. The experiments are being conducted on a 20-acre tract which has been leased on the Jones-Welty tract on the Waterford road, and L. A. Fitz, the representative of the Agricultural Department, who is in charge of the work, has been busy the last two weeks dividing the land into plats and planting seed. He has divided the tract into plats varying in size from an acre down to one-tenth of an acre and less, in which over 400 varieties of grain have been planted, including 350 varieties of wheat, besides barley, oats, rye, emmer and einkorn, the two latter being species of a grain which is supposed to be the original form of wheat. The wheat seed which has been planted was gathered by the Agricultural Department from every quarter of the globe. Among the places from which seed was sent are Russia, Algeria, Egypt, Abyssinia, Arabia, Japan, China, Spain and Italy, besides some from the wheat growing States of the United States. The rye seed came from Italy, the barley from Tennessee and the oats from Georgia. In fact, nearly every part of the world has contributed to the experiments which will determine the variety best suited to California. The experiments are under the auspices of the State Agricultural Experimental Station at Berkeley and the Agricultural Department at Washington.

WILD HOGS.—Record: Edward McPike, who has a big ranch on the West Side, near Grayson, and his foreman, Thomas Standard, recently killed eight big wild hogs on the river bottom about a mile south of Grayson. McPike killed a hog that weighed 500 pounds, and his foreman got one that weighed 400 pounds. From the eight hogs the men got 750 pounds of lard. The brush on the river bottoms is full of wild hogs, many of them large, fierce, tusked boars. The men were on horseback and armed with rifles. They used a pack of hounds to "jump" the porkers and bring them to bay. The hunting is exciting and dangerous.

Sutter.

SHEEP GO TO ALASKA MINES.—Marysville Democrat: Mrs. Elmira Wilbur has been engaged in shipping a lot of sheep to Tacoma from her Sutter county ranch, where they have been pastured during the winter. She has shipped about 1500 head and they will be taken from Tacoma by ship to Alaska, where they will furnish meat for the miners in that frozen field. A Government sheep inspector has been examining the flock and his judgment was favorable, although he has some severe criticisms for some of the county sheep inspectors, who, he thinks, show favoritism in passing upon flocks and are not careful enough in their inspection.

POULTRY PRODUCTION.—Yuba City Independent: Mart. Gregg, who lives on the Harkey ranch, north of town, has just taken from his incubator a freak in the poultry family. It is a chicken with four well-developed legs located on its body in the order of the legs of other quadrupeds. Near its tail and on the backbone is a distinct protuberance indicating an undeveloped head of another chicken. The little fellow, which is now five days old, seems well and as lively as the rest of the family of the same age.

Yolo.

JAPS HAVE FRUIT MEN IN THEIR POWER.—Winters special to Sacramento Bee: The labor proposition promises to be an interesting one here this summer. From the present outlook the fruit crop will be large beyond precedent. This the Japs know as well as any one, and, in some cases, they have informed employers that the price will be $1.75 per day "and up." At that rate fruit growers would almost welcome a frost, for such wages would leave them a mighty small margin. There would be no objection to paying white labor $1.75 per day. A prominent grower stated yesterday that he would be glad to contract for his white help at that price, but Japs are not worth it. A Japanese contractor says that he can have 500 more men here if wanted, and unless white help is available they surely will be needed. The new cannery, which will be in operation this summer, will require seventy-five or a hundred hands during four or five months, and that will about exhaust local help. No doubt 400 or 500 white people, girls and boys, as well as adults, could get steady work here all through the fruit season at good wages.

Yuba.

MUST KEEP STALLIONS OFF STREETS.—Marysville special to Sacramento Bee: At last meeting of City Council an ordinance somewhat out of the usual nature came up for consideration and was adopted. The new law prohibits the leading or driving of stallions through the streets of Marysville for the purpose of exhibition, advertisement or exercise. The ordinance was asked for by citizens who have become tired of seeing these animals paraded on the principal thoroughfare day after day by owners who took this means of advertising their stock.

Oregon.

TAXES WILL DRIVE SHEEP OUT.—Red Bluff News: The Oregon House of Representatives has passed a bill providing that all sheep driven into the State for pasturage shall be taxed 20c. a head, and 5c. for each county through which the sheep are driven. If the tax is unpaid, the stock inspector shall seize the sheep and publish notice. The owner may redeem them within ten days by paying the tax and all expenses. Any diseased or unhealthy sheep are to be deported by order of the inspectors. Neglect to obey the order of deportation may be punished by a fine of $25 a day. This measure, however, does not apply to sheep brought into the State for winter feeding, during November, December, January and February or to stock being shipped to market.



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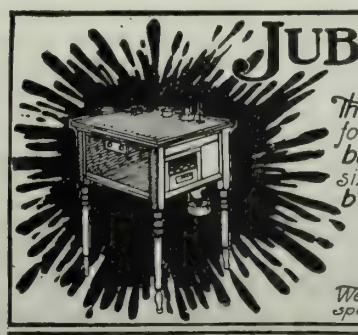
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The Home Circle.

The Village Doctor.

Along the village streets where maples lean
Together like old friends about the way,
A faithful pair oft and anon were seen—
He and his nag, both growing old and gray.
What secrets lurked within that old soul's breast,
Of mother-love, of throbs of pains and ills,
All safely kept beneath that buttoned vest,
Receptacle of powders and of pills.
Thrice happy he when some fond mother's eyes
Grew moist with love unspeakable to find
Snugged to her breast her babe whose paradise
Within her soul and bosom were entwined.
How oft he held the wrist to mark the slow
Pulsations of the feebly flut'ring heart,
While his kind words, soft-murmuring and low,
Essayed to calm the mourner's pain and smart.
He was to all a father, brother, friend;
Their joys were his, their sorrows were his own.
He slept for years where yonder willows bend
Above the violets that kiss the stone.

—Horace Seymour Keller.

The American Queen.

DEDICATED TO THE AMERICAN PRESIDENT.

The queenliest woman, bravest, best
Of all sweet things beneath the sun?
I say the queenliest is that one—
Seek north or south or east or west—
Who loves to fold the little frock
And hear the cradle rock and rock.

I say the purest woman, best
Beneath our forty stars, is she
Who loves her spouse most ardently
And rocks the cradle oftenest—
Who rocks and sings and rocks, and then
When birds are nesting, rocks again.

—Joaquin Miller, in The Cosmopolitan.

Not an Illusion.

When Marjorie Mervin first intimated to her friends that she intended to become a hospital nurse, they one and all, with the exception of one person who proved the rule, declared to her that she was mad.

But Marjorie only smiled, and quietly went on with her preparations, aided and abetted therein by the exception, Frank Ashton, a medical student at St. Paul's, the hospital Marjorie proposed entering. And not to a living soul did she explain the true reason for the step she was taking.

Time went on and Marjorie struggled bravely against the inclination to go home at the end of the first week, when foot and backache made life scarcely worth living, and, finally, in her fourth year, gained distinction in the shape of a gold medal and the sistership of a ward.

Although Frank Ashton was long since qualified he still remained at the hospital, ostensibly to specialize, but in reality to watch over sunny-haired, brown-eyed Sister Marjorie, whom he had loved for years. Marjorie frankly told him that she liked him, but that was all.

* * * * * *

Marjorie was taking a well-earned rest in her large sitting room one day when a nurse tapped at the door.

"Come in," said Marjorie sleepily. The nurse entered—a pretty blue-eyed girl in neat cap and apron.

"There's a letter for you, sister, and I don't like the look of sixteen; his temperature has risen two degrees since one o'clock."

Marjorie looked at the patient, gave the nurse some directions, and returned to rest and her letter. An invitation for an At Home fell out. With it was a hasty note:

"Dearest Marjorie—Do make a special effort to come to this function. Several nice people are coming—among them Paul Burton, the poet, who was so gone on you at Lympstone. He asked after you the other day, and would like to renew acquaintanceship. Ever yours,

"Bee Paget."

For a minute her heart beat to suffocation. Her memory carried her back to the year before she entered the hospital and an episode that only Bee Paget knew of, and even Bee did not know how deeply it had affected her and treated it merely as a joke.

How long ago it seemed, that summer which she had spent with Bee before her marriage! Mr. Paget was staying there, too, and his absorption in Bee threw Marjorie into the society of the only other guest, Paul Burton, the rising poet. Marjorie was young, pretty and impressionable, and Paul Burton did not neglect his opportunity of instructing Marjorie in the lesson of love, and he found her an apt pupil

With the refinement of cruelty, Burton made Marjorie understand he was wedded to his art, and to art alone, and poor Marjorie's love was such that she thought it a noble thing, and loved him all the better for it.

And for all these years she had remained true to her ideal, though Paul had passed out of her life completely. And now there was an invitation from Bee inviting her to meet him.

How Marjorie lived through the day which intervened she never knew. Her nurses found her a trifle hard to work for, and Frank Ashton was severely snubbed more than once, which did not, however, prevent him from knocking at Marjorie's door on the eventful evening with a huge bunch of violets.

She blushed as Frank entered, and, murmuring thanks, fastened the violets into the belt of her gown, saying: "You are a good boy to remember my favorite flowers."

"Why, Marjorie," he said, delightfully, "you look altogether radiant. What has happened to you?"

"Don't be stupid, Frank; it's useless telling a woman who has been nursing all these years she looks radiant—it's nonsense!"

"It isn't, Marjorie. I've never seen you look better; and what a jolly suit."

"I'll look in and fetch you if I can," he said, as he tucked her into a cab; for Frank Ashton knew the Pagets also.

Arrived at the Pagets', Marjorie made her way up the large stairway, and having greeted Bee, passed on into the crowded room. At the far end, seated on a luxurious divan, was Paul holding a small court. When he caught sight of Marjorie he advanced to meet her.

"Marjorie," he whispered, "can it be Marjorie? Come with me away from these people. I have much to tell you."

Together they strolled into the dimly-lighted conservatory.

"Ah, Marjorie," he was beginning to say, when a high pitched voice was heard, and a stout, plain woman, whose personal appearance bore more evidence of dollars than refinement, stood before them.

"Paul," the woman said, "I have been looking for you everywhere, as we are due at the Duchess' in ten minutes."

"All right, Clinda. Allow me"—turning to Marjorie—"to introduce my wife."

For a moment Marjorie's senses reeled. Then the long habit of self-control came to her aid. But to her surprise the pain was not what she imagined it would be—disgust, rather, that the man who had talked so much about marriage of soul with soul, and of affinities, should have married the almighty dollar.

The shallowness of his nature came before her. His small affectations and conceits, unnoticed in the old days of infatuations, impressed themselves on her; and how insignificant his appearance was compared with Frank Ashton's, for instance.

In the doorway she met Frank Ashton, who looked at her curiously. "Hello, Marjorie," he said, "you look a little pale. Can I get you anything?"

"You might get me a carriage, Frank; I'm a bit tired. Nursing and frivolity don't go well together."

Frank complied and stepped into the cab after her, when, to his surprise, Marjorie, the calm and self-controlled, buried her face in her slim, white hands and fairly sobbed.

"Marjorie, darling," he said, as he slipped an arm around her unresisting waist and drew her sunny head on to his broad shoulder—"my precious darling, tell me what is wrong."

"Oh, Frank," she sobbed, "I had such a beautiful illusion! I loved it so! I made such a dear little shrine for it; and I've lost my poor little illusion, and it hurts—Oh! it hurts."

And then the cab drew up at the great hospital gates, and Frank took Marjorie to the ward door, and there had to leave her. The gas in the great corridor shone on her wet eyes and sunny hair.

"Good night, Frank," she said. And then the love-light or something in his brave, gray eyes touched her, and with a sudden impulse she unfastened the bunch of violets from her belt, and handing them to Frank, vanished into her ward, saying, "Thank heaven, Frank, you are not an illusion!"—Forget-Me-Not.

Gross Adulterations.

The Health Protective Society of New York was recently addressed by R. E. Doolittle, the chief of the New York Laboratory of the United States Department of Agriculture, and he told them that the country had little protection against adulteration and misbranding, except in the case of foreign products. These, in consequence of recent legislation, are now denied admission to the country if adulterated or if of inferior quality, thus placing a premium upon foreign goods. Not all adulteration is prohibited, it is true, but the necessity for calling things just what they are is as effective as actual prohibition.

"Importers say," said Mr. Doolittle, "that to mark their products 'artificially colored' is just the same as to inscribe the word 'poison' upon them."

One resolution which the women present made was to grind their own spices henceforth and forever. It is practically the only way, Mr. Doolittle said, to secure pure coffee and spices, and even then one cannot be absolutely sure that some of the coffee beans are not made out of wheat "middlings."

Mr. Doolittle passed around some specimens of coffee and spices which were made up, according to the analyses pasted on the bottles, of almost everything except the substances indicated by the names. Black pepper was composed of ground olive stones, cocoanut shells, wheat middlings and white pepper shells. An analysis of ginger brought to light such things as wheat flour, rice bran, mustard hulls, and in one case 20% of plaster. Mustard was colored in one case with tumeric, a harmless vegetable oil, and in another with martius yellow, a poisonous coal-tar dye. It was adulterated with flour and in one case with 20% of plaster. Coffee was adulterated with chicory and various other things, but here, it appears, the housekeeper is not without protection.

"If you want to test coffee," said Mr. Doolittle, "just put a little of it in water. The coffee will float and the adulterants will sink to the bottom."

Other specimens which the speaker showed were even worse than the spices. A sample of cream of tartar was made up of acid phosphate of lime and 70% of plaster.

"Just such ingredients as are ordinarily used for fertilizers," commented Mr. Doolittle.

A specimen of currant jelly had been analyzed into starch paste, sweetened with glucose, colored with coal-tar, flavored with chemicals and preserved with salicyclic acid.

"Jellies and jams are among the most grossly adulterated products on the markets, and flavoring extracts, such as vanilla, lemon and orange, are as bad. These vile mixtures have been found to contain as much as 90% of wood alcohol, an almost deadly poison, which acts upon the eyes and produces blindness.

"The extent to which artificial coloring matter is used in food products is something tremendous," proceeded Mr. Doolittle, "and for this the consumers have themselves to blame, to a great extent. They are attracted by brilliancy of color—heaven knows why!—whereas, they ought to regard it as a flag of danger.

"Why can't the use of all artificial coloring be prohibited," asked the president, Mrs. J. Augustine Wilson.

"That is what I should like to see done," returned the speaker. "I don't see why any one wants the color. But as a matter of fact, it would be very difficult to carry out such a measure as long as the consumer demands brightly colored food products. What we need is a better educated public, and that is where organizations like this can do good work."

Cold Feet and Indigestion.

Coldness of feet and limbs is almost invariably an evidence of indigestion. The coldness is not due to the weakness of the heart or feebleness of circulation, as is generally supposed, but to the contraction of small arteries, preventing blood from entering the parts. There is generally an irritation of the abdominal sympathetic nerve centers which controls the circulation of the lower extremities. This difficulty is not to be removed by exercise or by any special application to the limbs, but by removal of the causes of the irritation. This may be a prolapsed stomach or chronic indigestion. Hot and cold foot baths are valuable. These act, not simply on the feet and limbs, but reflex action affects beneficially the abdominal sympathetic centers, which are in a diseased condition.

Rubbing of the feet and legs is also an excellent method of overcoming spasm of the blood vessels, thus preserving the normal circulation. The rubbing should be from the feet towards the body. The surface should be well lubricated with vaseline. To avoid irritation of the skin care should also be taken to clothe limbs very warmly. In many cases this is necessary, even in the summer season.

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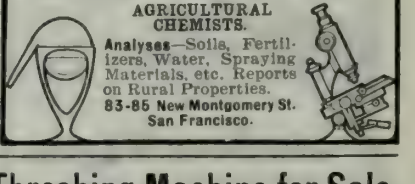
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Notes for the Sickroom.

Keep all medicine bottles out of the room, or at least where the invalid cannot see them.

Tea and coffee, where a patient is allowed to have them, should always be taken immediately after they are made.

Food for the sick should be of the best quality, neatly and delicately prepared. Every meal should be a surprise, and it is a good plan to leave the patient alone while eating, and never bring him more than he will probably want.

Of course, every one knows that plenty of ventilation is necessary, though there should be no draughts of air directly blowing on the patient.

Each individual disease should have a peculiar diet of its own.

It is well not to heap much bedclothing over an invalid. Down comfortables are desirable, because they are so light, and at the same time so warm. There are not many things more annoying than to lie under the weight of heavy blankets and comforters. It is a good plan to wrap an old baby blanket or shawl around the feet to keep them warm. Another small blanket to lay against the back will be appreciated.

No food or drinks should be allowed to remain in the sickroom. They should be kept in an adjoining room or on the outside of a window, carefully covered, and where they may be kept perfectly cool.

Where one is just recovering from a long illness or is a chronic invalid, it is often a good plan, if permissible, to move him from one bedroom to another, a week perhaps in one and then a week in another. This will give variety, for an invalid tires of seeing the same furnishings and bric-a-brac in the same place day after day and week after week. It has been suggested that an invalid or a patient who is convalescing, and can be moved, might sleep in one bedroom and spend the daytime in another.

Never tell horrifying stories or anything unpleasant to any invalid. This would seem like an unnecessary injunction, but it is a common thing done by many well-meaning, thoughtless people. Talk to the patient only about agreeable, cheerful or uplifting topics.

Lettuce.

A recent bulletin of the Department of Agriculture has the title "American Varieties of Lettuce," and contains information of very particular interest to the great body of lettuce eaters as well as to growers of lettuce. The Bureau of Plant Industry applying the methods of systematic botany is undertaking a critical study of five thousand varieties of vegetables offered by seed sellers in 1901 and 1902, and lettuce, the most important of salad plants, is the first to which the bureau has devoted itself.

California is the main American source of lettuce seed supply, and grows on five hundred acres, about 250,000 pounds of seed a year. There are three hundred varietal names of lettuce representing more than one hundred distinct varieties. This latter fact must surprise the ordinary buyer of lettuce; for the main distinction known to the every-day cook and housewife is that of head and leaf lettuce. Of the three classes of lettuce the connoisseur and gourmand are likely to prefer "the soft, delicate flavored butter varieties" or the sweet but coarse leaves of the cos lettuces than which there is no salad superior when it is served with a French dressing, but the ordinary buyer is content with the hard-textured, crisp sorts, those most grown for the winter market.

Bad Memories.

Many people complain of having a bad memory, as if it were something they could not help, like a headache, or some similar ailment; yet even that can be helped nowadays by the application of a little common sense. After all, there is no reason why anybody should have a bad memory. It is merely a matter of training, and is, moreover, a matter in which it is never too late to attend to its training. For grown-ups many methods are advocated, all of them, no doubt, based on the principle of mental concentration. In a young child the faculty can be cultivated by making the child describe everything it has seen in its morning walk, taking care that no fact is exaggerated, but that strict attention is paid to truth in every detail. In the matter of memorizing it is an excellent plan to let the child learn one line of poetry a day, which it should repeat the following morning, and at the end of a week it will be able to say the seven lines. The young brain should not be overloaded with knowledge, but allowed to assimilate a fragment each day.

Hints to Housekeepers.

Virginia Beaten Biscuits.—To one quart of flour add one tablespoonful of butter and one-half teaspoonful of fine salt. Mix these well together, using sweet milk or cold water, and mix until the dough is as stiff as can be handled; then beat and beat until it becomes soft and pliable. Roll out an inch thick, cut and prick with a fork and bake in a moderately hot oven until they turn a nice brown. Must be eaten at once.

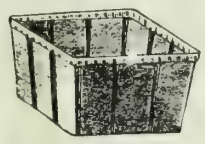
Cornstarch Pudding Without Eggs.—One pint of new milk with six tablespoonfuls of cornstarch, stirred to a paste; have one quart of milk in a double lined boiler, and while boiling hot, stir in one coffee cup full of sugar, and the cornstarch dissolved in the cold milk. Flavor with lemon or vanilla, and stir constantly until it thickens. Turn it into a glass or a china bowl and serve hot.

Sponge Pudding.—One pint of sweet milk, one-half cup of sugar, one-half cupful of flour, one-half cupful butter and five eggs. Wet the flour with part of the milk; then add the remainder and cook ten minutes; add butter and sugar while hot; when cool, add yolks of eggs well beaten, then the beaten whites and stir thoroughly. Bake in a two-quart double boiler. Serve with a butter and sugar sauce.

Chicken Sambayon.—Here is a delicious variation of chicken soup: Make a strong broth by boiling the carcasses of two chickens, together with the skinned feet, the ends of the pinions, and any scraps of meat left uneaten. Clear the broth of fat, season, and add the yolks of six or eight eggs, well beaten. Cook the eggs and the broth together in a double boiler, stirring all the time until the mixture thickens like a thin boiled custard. Serve in bouillon cups. This is called chicken sambayon.

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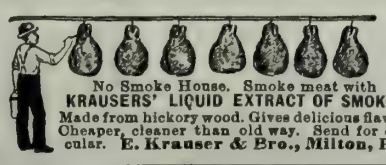
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The Markets.

San Francisco Produce Report.

San Francisco, March 15, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 14¾@1 12½	96⅞@ 93¾
Thursday	1 12⅝@1 14	93⅝@ 94½
Friday	1 14½@1 13	94⅝@ 92
Saturday	1 13½@1 11½	93½@ 91¼
Monday	1 09 @1 13	91½@ 93¼
Tuesday	1 14½@1 12½	92⅝@ 93½

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	48½@47¾	48⅜@48¼
Thursday	48 @48½	48½@48⅞
Friday	48¾@47⅞	48¾@48
Saturday	48¼@48	48⅞@48⅛
Monday	48⅛@49⅛	48⅛@49⅜
Tuesday	49 @49⅞	49¼@50

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 44 @1 44½	$1 28 @1 28⅛
Friday	1 43⅝@1 43⅞	1 27⅝@1 27½
Saturday	1 43¼@1 43¾	1 27 @1 27⅛
Monday	——@——	1 27⅜@1 26½
Tuesday	——@——	1 26⅝@1 27¾
Wednesday	1 44½@1 44⅞	1 27¼@1 27⅝

Wheat.

Values in the spot market in this center have been without material change the past week, offerings continuing light and confining the trade to immediate local needs, but the general trend of values in Eastern and foreign centers was to slightly lower figures than had been ruling. Weakness abroad in connection with the rain storms here caused the local speculative market to favor the bear interest, May wheat selling down to $1.43¾ and December option declining to $1.26½, but latest sales were at an improvement on these figures. Stocks of wheat are extremely light, not only on this coast but throughout the United States. The last Government report announced 20.1 per cent. of 1904 crop remaining in farmers' hands on March 1, being about 111,000,000 bushels. This is 21,000,000 bushels less than a year ago, and 53,000,000 bushels less than two years ago. The percentage on hand March 1, 1904, of previous crop was 20.8, and on March 1, 1903, was 24.5 of 1902 crop. Chicago values for wheat are about 15 per cent. higher than a year ago and about 50 per cent. higher than two years ago.

California Milling	$1 55	@1 62½
Cal. No. 1 shipping, alongside	1 42½	@1 45
No. 1 Oregon Club	1 42½	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.43¼@1.44⅞.
December, 1905, delivery, $1.26⅛@1.28.

Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.44½@1.44⅞; December, 1905, $1.27¼@1.27½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7s2d@—s—d	—s—d@—s—d
Freight rates	14½@—s	12½@—s
Local market	$1 37½@1 40	$1 42¼@1 47½

Flour.

Business is not brisk and is likely to continue of comparatively small proportions during the balance of the current season, stocks being too small and prices too high for active export trade. There are no changes in quotations and on favorite marks current values are being tolerably well maintained.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Light supplies of this cereal prevent buyers from operating to advantage in the spot market. Demand at extreme current figures is not active, however, there being no desire on the part of handlers of this cereal to stock up heavily, an easier market being expected at opening of coming harvest year. That there will be scarcely any old barley left when new crop begins to come upon the market is altogether probable. The rainy weather of the past week caused some weakness in Dec. option for No. 1 feed, which sold as low as 86⅜c, being a decline of about 3½c from best figures of previous week. A year ago Dec. option was about $1.02 and within 10c of the price of May barley, while in the recent speculative trading Dec. option has been about 35c per cental under May or the price of spot barley.

Feed, No. 1 to choice	$1 20	@1 22½
Feed, fair to good	1 17½	@1 20
Brewing, No. 1 to choice	1 22½	@1 25
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 22½

Oats.

Trade in this cereal is of a light order in the local market at present. Spot stocks were of small volume and mostly under control of millers and dealers, but were augmented this week by a cargo from the North, which had been purchased for shipment to Asiatic Russia. Values are ruling steady for ordinary feed qualities. Choice to fancy oats are so scarce as not to admit of any wholesale transactions. In the East supplies of oats are more liberal. Some Eastern oats have been lately landed here.

White oats, fancy feed	$1 52½	@1 57½
White, good to choice	1 47½	@1 52½
White, poor to fair	1 40	@1 45
Milling	1 45	@1 55
Black oats	1 35	@1 65
Red, fair to choice	1 35	@1 55

Corn.

Further shipments of White corn have been made this week to Central America, one steamer taking 64 tons. Large Yellow is in fair request on local account. Current values on large corn of prime to choice quality are being well maintained. Small Yellow remains scarce and high.

Large White, good to choice	$1 35	@1 40
Large Yellow	1 35	@1 40
Small Yellow	1 80	@1 90
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 35	@1 40

Rye.

Market is lightly stocked and unfavorable to buyers.

Good to choice	$1 52½	@1 60

Buckwheat.

Not enough offering to admit of any noteworthy trading.

Good to choice	$1 75	@2 00

Beans.

There are no heavy offerings of good to choice beans of any variety. Spot stocks are principally Large Whites, Bayos and Pinks. Most of the Limas and Blackeyes remaining are held at producing points south. The Limas are understood to be largely under control of a few speculative operators.

Pea, fair to good, 100 lbs	$3 00	@3 25
Small White, good to choice	3 25	@3 50
Large White	2 75	@3 00
Pinks	3 50	@3 75
Bayos, good to choice	3 00	@3 25
Red Kidneys	4 50	@——
Reds	5 50	@——
Limas, good to choice	5 15	@5 25
Black-eye Beans	2 60	@2 85

Dried Peas.

Domestic of prime to choice quality are so scarce as to be hardly quotable. Some Eastern Green have been imported at a cost of about $2 per cental.

Green Peas, California	1 40	@2 10
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 40	@2 00

Hops.

Little doing in this center, either for shipment or on local account, and aside from asking prices there is scarcely anything at the moment upon which to base quotations. There are no large quantities offering from the hands of either growers or dealers. The Producers' Price Current of New York says: "Sales of considerable quantities are reported from the different counties in New York State the past week and it is estimated that 1,000 to 1,200 bales have changed hands at prices ranging from 24½c. to 26½c. Owing to this, the growers seem to have more confidence in the situation and are not offering their goods as before. Reports from London indicate that a pool has been formed by the larger English growers who are said to control at the present time 20,000 bales. What effect, if any, this will have on the market remains to be seen. Reports from Germany show a dragging market."

California, good to choice, 1904 crop	24	@27

Wool.

Manufacturers and dealers who are lightly stocked, and many if not most of them are in this position, are doing all in their power to make the market appear weak, so as to be able to operate to advantage in producing sections. There are no evidences, however, of their meeting with any special success in talking down the market. The world's supply of wool is light as compared with average requirements. All will be needed. Much of this year's wool has been already contracted for at comparatively stiff prices. The Wool Growers' Association, controlling most of the wool of Yuba, Sutter and Butte counties, has fixed May 5th as date for opening sales of Spring clip at Marysville.

SPRING.

Northern, free	22	@24
Northern, defective	18	@21
Middle County, free	20	@23
Middle County, defective	17	@19
San Joaquin and Southern, free	15	@17
San Joaquin and Southern, defective	13	@14
Southern lambs, as to quality	13	@16
Oregon, good to choice	20	@23
Nevada	16	@22

Hay and Straw.

Although receipts showed decrease, partly due to stormy weather during a portion of the week, offerings proved more than ample for the demand and the market lacked firmness. The wet weather which checked the receipts also tended to correspondingly check the demand.

Wheat, good to choice	$11 00	@ 13 00
Wheat and Oat	9 00	@ 11 50
Tame Oat, fair to choice	8 00	@ 10 50
Wild Oat	7 00	@ 9 50
Barley	7 00	@ 10 00
Alfalfa	7 00	@ 10 00
Clover	6 00	@ 9 50
Stock hay	6 00	@ 7 50
Compressed	11 00	@ 13 00
Straw, ₱ bale	25	@ 50

Millstuffs.

Demand was slow for Bran and Middlings, but stocks were principally in few hands and were rather steadily held. Prevailing values on Milled Corn were well maintained. Rolled Barley was advanced 50c per ton.

Alfalfa Meal, ₱ ton	$21 00	@ 22 50
Bran, ₱ ton	20 50	@ 21 50
Middlings	25 00	@ 28 00
Shorts, Oregon	20 50	@ 22 50
Barley, Rolled	25 50	@ 26 50
Cornmeal	30 00	@ 30 50
Cracked Corn	30 50	@ 31 00
Oilcake Meal	32 50	@ 34 00

Seeds.

Market for the several kinds quoted herewith is quiet at quotably unchanged values. Good to choice Alfalfa is not offering in great quantity, nor is it being pressed to sale.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		12 @13½
Canary		6¼@ 6½
Rape		1¾@ 2¼
Hemp		3½@—
Timothy		5 @ 5½

Honey.

Local demand is light, but there is considerable going outward, another shipment of 200 cases being made this week to Germany. Stocks are largely of amber grades and are not of very heavy volume, but are ahead of immediate local requirements, there being no disposition on the part of jobbers and retailers here to carry much honey at this advanced date in the season.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@ 5½
Extracted, Amber	3¾	@ 4¼
Extracted, Dark Amber	3	@ 3½
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

Not much arriving. Another shipment was made this week to Belgium, the steamer Acapulco taking 6018 lbs.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Supplies of Beef are of fair volume and ample for the somewhat limited demand. Veal is arriving in heavy quantity, and only most desirable sizes are meeting with prompt custom, these going at reduced figures. Market for Mutton is firm at the prevailing prices, the good demand for wool and the abundance of green feed tending to keep sheep on the ranges. Hogs are arriving a little more freely, but are not in sufficiently heavy supply to cause any particular weakening in values.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	6	@ 6½
Beef, 2nd quality	5½	@—
Beef, 3rd quality	4½	@ 5
Mutton—ewes, 6½@7c; wethers	7	@ 7½
Hogs, hard grain, 130 to 200 lbs	5¾	@—
Hogs, large, hard, over 200 pounds	5½	@ 5⅝
Hogs, small, fat	5½	@ 5⅝
Veal, large, ₱ lb	6	@ 8
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8½	@ 9
Lamb, spring, ₱ lb	12½	@—

Hides, Skins and Tallow.

Dry Hides are in good request, but Wet Salted are not so eagerly sought after, although not quotably lower. Pelt market is firm, with no likelihood of there being a glut of offerings for some time to come. The German steamer Denderah, sailing Saturday, carried 87,816 lbs. Tallow for Central and South America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.		Culls.	
Heavy Steers, over 56 lbs	—	@11	—	@10
Medium Steers, 48 to 56 lbs	—	@10½	—	@ 9½
Light Steers, under 48 lbs	—	@ 9½	—	@ 9
Heavy Cow Hides, over 50 lbs	—	@10	—	@ 9
Light Cow Hides, under 50 lbs	—	@ 9½	—	@ 8½
Stags	7	@ 7½	6	@ 6½
Wet Salted Kip	—	@11	—	@10
Wet Salted Veal	—	@11½	—	@10½
Wet Salted Calf	—	@12½	—	@11½
Dry Hides	—	@18	—	@17
Dry Kip and Veal, 11 to 16 lbs	—	@15	—	@13
Dry Calf, under 4 lbs	—	@20	—	@18
Pelts, long wool, ₱ skin		1 50		@2 00
Pelts, medium, ₱ skin		90		@1 10
Pelts, short wool, ₱ skin		50		@ 75
Pelts, shearling, ₱ skin		15		@ 40
Horse Hides, salted, large prime, each		3 00		@——
Horse Hides, salted, medium		2 75		@——
Horse Hides, salted, small		2 25		@——
Horse Hides, dry, large		1 75		@——
Horse Hides, dry, medium		1 50		@——
Horse Hides, dry, small		1 00		@——
Tallow, good quality		4		@4½
Tallow, poorer grades		3½		@3½

Bags and Bagging.

Business in this department continues light, this being generally a quiet time of year in the bag trade. Grain Bags are being steadily held, owing to favorable crop prospects and the rather firm jute market in Calcutta.

Bean Bags	$	4½@5
Fruit Sacks, cotton		6½@7½
Fruit Sacks, jute, as to quality		5½@7
Grain Bags, Calcutta, 22x36, spot		6 @6½
Grain Bags, Calcutta, buyer June-July		6½@6¼
Wool Sacks, 4-lb		32 @—
Wool Sacks, 3½ lb		30 @—

Poultry.

There were only moderate arrivals and the market for poultry in prime to choice condition showed a generally firm tone. Young Chickens were in good request and when of very superior quality brought an advance on quotations. Ducks in good flesh were salable to advantage, as were also fat Geese and Goslings. Inquiry for Turkeys was light and was mainly for Live. Prevailing prices for Pigeons, both Young and Old, were well maintained, the Young being higher.

Turkeys, Dressed, choice, ₱ lb	$ 20	@ 23
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	5 00	@ 5 50
Hens, large	6 00	@ 7 00
Roosters, old	5 00	@ 5 50
Roosters, young (full-grown)	6 50	@ 7 50
Fryers	5 50	@ 6 00
Broilers, large	4 00	@ 5 00
Broilers, small to medium	3 00	@ 3 50
Ducks, old, ₱ dozen	6 00	@ 6 50
Ducks, large young, ₱ dozen	6 50	@ 7 50
Geese, ₱ pair	2 00	@ 2 25
Goslings, ₱ pair	3 00	@ 3 50
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	2 50	@ 2 75

Butter.

Prices have been on the down grade the past week, the result of being crowded too high the previous week and cutting off outside demand. It is likely values will go as much too low as they had been too high before a steady market is again experienced. The booming of prices to unwarranted levels is generally followed by a relapse to the opposite extreme. This is very convenient for speculative manipulators, but works no good to the producing interest.

Creamery, extras, ₱ lb	26	@—
Creamery, firsts	25	@—
Creamery, seconds	24	@—
Dairy, select	25	@—
Dairy, firsts	24	@—
Dairy, seconds	22	@23
Mixed Store	17	@18

Cheese.

Supplies of domestic flats are showing some increase and market is easier in tone. Young Americas are not in heavy supply and in fair request. Eastern markets are lightly stocked and firm.

California, fancy flat, new	12	@12½
California, good to choice	11½	@12
California, fair to good	10½	@11½
California, "Young Americas"	11	@13
Eastern	15	@16

Eggs.

There has been a sharp recovery in prices, owing to keen competition among dealers to secure eggs for cold storage. The California production is the heaviest and the quality the best from the middle of March to the middle of May, which accounts for the active speculative demand during this period.

California, select, large, white and fresh	20	@—
California, select, irregular color & size	18	@19
California, good to choice store	17	@18
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Asparagus was in free receipt and lower, but the demand was good at the reduced figures, both for immediate consumption and canning. Rhubard was in liberal supply and sold at a further decline. Green Peas from near-by gardens are now arriving in considerable quantity. Onion market was slow and lacked firmness, with offerings tolerably heavy, mainly Oregon product representing prior arrival purchases by dealers.

Asparagus, No. 1 to choice, ₱ lb	4	@ 6
Asparagus, No. 2, ₱ lb	3	@ 3½
Beans, Lima, ₱ lb	—	@ —
Beans, String, ₱ lb	15	@ 20
Beans, Wax, ₱ lb	—	@ —
Cabbage, choice garden, ₱ 100 lbs	50	@ 60
Egg Plant, ₱ lb	10	@ 15
Garlic, ₱ lb	8	@ 10
Mushrooms, ₱ lb	—	@ —
Onions, Yellow Danver, ₱ ctl	3 25	@ 3 40
Peas, Green, ₱ lb	4	@ 8
Peppers, Bell, ₱ lb	—	@ —
Peppers, Green, ₱ lb	7	@ 12½
Rhubarb, ₱ box	50	@ 1 25
Summer Squash, small box	—	@ —
Tomatoes, Los Angeles, ₱ box	1 00	@ 1 75

Note.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market was not heavily stocked with choice to select Burbanks, and demand was fair at much the same prices as were realized the previous week. Common

qualities dragged at low figures. Early Rose for seed were in limited supply and firmly held. New Potatoes were in fair receipt and demand not very active at the prices asked. Market for Sweets was quiet and easy in tone.

Cal. Early Rose, ₱ cental	1 90	@	—
Salinas Burbanks, ₱ cental	—	@	—
River Burbanks, ₱ cental	40	@	95
River Reds, ₱ cental	65	@	85
Oregon Burbanks, ₱ cental	1 00	@	1 40
New Potatoes, ₱ cental	2 50	@	3 00
Sweet Potatoes, ₱ cental	75	@	1 00

Fresh Fruits.

Apples now on market are mostly cold storage stocks. Demand is not active and is mainly for choice to select table fruit, prices for which are being maintained at much the same range as current for weeks past. Cooking apples are not receiving much attention and sales of the same are in the main at comparatively low figures.

Apples, fancy, ₱ 50-box	1 75	@	2 00
Apples, good to choice, 50-lb. bx	1 00	@	1 50
Apples, fair to good, ₱ box	75	@	1 00
Apples, Lady, ₱ box	—	@	—
Persimmons, ₱ regular box	—	@	—
Strawberries, large, ₱ chest	—	@	—

Dried Fruits.

The market for most kinds is showing decidedly healthy condition, stocks being light and the demand fair, with inquiry principally for assorted rather than straight lots. Prunes of the middle sizes are the only noteworthy exception to above remarks, and the general tone of the Prune market is showing improvement, in the absence of large offerings of any other dried fruit. Apricots of desirable quality are in particularly light supply and are bringing comparatively stiff prices. An early clean-up of nearly everything with the possible exception of Prunes is altogether probable. The steamer Siberia, sailing for the Orient the past week, carried 29,600 lbs. assorted dried fruit. The steamer City of Puebla, bound Saturday for British Columbia, took aside from Raisins 33,125 lbs. dried fruit assorted.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice			4½@ 5
Apples, extra choice to fancy, 50-lb boxes	6	@	6½
Apricots, Moorpark	10	@	13
Apricots, Royal, good to choice, ₱ lb			8½@10
Apricots, Royal, fancy	11	@	13
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	8	@	8½
Peaches, unpeeled, fancy to extra fancy	9	@	10½
Pears, standard, ₱ lb			6½@ 7
Pears, choice to fancy	8	@	10½
Plums, Black, pitted			5½@ 6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted			6½@ 7½
Prunes, Silver, good to fancy			—@—

Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced			3½@ 4½
Apples, quartered			3½@ 4½
Figs, White, in bulk	2	@	2½
Figs, Black			2½@ 4

Raisins.

The general features of the market remain much the same as previously noted. Offerings are principally common qualities of loose Muscatel, and in consequence values for the higher grades are largely nominal. The steamer City of Puebla, clearing Saturday, took 6,900 lbs. Raisins for British Columbia.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel			3¼@3½c
3-Crown Standard			3¾@4 c
4-Crown Standard			4¾@ —c
Seedless Thompsons			—@4½c
Seedless Sultanas			—@3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4½c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s			4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s			5½@8 c

Citrus Fruits.

The rainstorms of the current week interfered with the picking and shipping of Oranges, but there were fair carry-over stocks in this center, especially of common qualities and large sizes, market for these continuing favorable to buyers. Choice Navels of the smaller sizes were most in favor and sold to best advantage. Lemons were without quotable change, with demand rather slow and supplies of fair proportions. Limes were in ample stock for present needs.

Oranges, Navels, choice to fancy, ₱ bx	1 50	@	2 00
Oranges, Navels, fair to good, ₱ box	85	@	1 25
Oranges, Seedlings, ₱ box	75	@	1 10
Oranges, Cal. Tangerines, half box	90	@	1 25
Oranges, Blood, ₱ box	1 25	@	1 50
Lemons, California, select, ₱ box	2 50	@	2 75
Lemons, California, good to choice	1 75	@	2 25
Lemons, California, fair to good	1 25	@	1 75
Grape Fruit, ₱ box	1 50	@	2 50
Limes, Mexican, ₱ box	4 00	@	4 50

Nuts.

Little doing in nuts of any kind, either in a wholesale or jobbing way. Quotations are without change, but are of necessity at present based mainly on asking figures.

Chestnuts, Italian, ₱ lb			7 @ 8
Nonpareil Almonds			13 @16
Ne Plus Ultra Almonds			11 @14
Languedoc Almonds			8 @11
Peanuts, fair to prime			4½@ 5½
Cal. Walnuts, No. 1 soft shell			12 @13
Cal. Walnuts, No. 2 soft shell			10 @11
Cal. Walnuts, No. 1 hard shell			11 @12
Cal. Walnuts, No. 2 hard shell			9 @10

Wine.

The wholesale market is quiet for both dry and sweet wines. Dry wines of last vintage are quoted at 14@17c. per gallon, San Francisco delivery, for fairly good to choice, but dealers are not taking hold to any great extent, being apparently tolerably well stocked for the time being. Sweet wines of 1904 are obtainable at 25c. per gallon at wineries, or at 27½c. San Francisco. The steamer Acapulco, sailing Saturday, carried 56,711 gallons and 55 cases, including 45,136 gallons for New York. Receipts of wine at San Francisco last week were 248,600 gallons, and for preceding week were 361,150 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	76,961	3,315,622	4,053,519
Wheat, ctls	29,140	2,303,746	1,693,159
Barley, ctls	157,214	2,925,036	4,812,749
Oats, ctls	28,246	724,880	788,916
Corn, ctls	1,083	155,766	122,332
Rye, ctls	757	44,959	44,589
Beans, sks	19,564	554,136	647,108
Potatoes, sks	18,753	985,921	1,010,483
Onions, sks	4,411	106,676	122,026
Hay, tons	3,213	138,676	133,216
Wool, bales	555	41,057	36,432
Hops, bales	95	37,376	28,944

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	63,184	2,285,196	2,677,188
Wheat, ctls	312	801,203	752,141
Barley, ctls	132,438	1,734,551	3,784,702
Oats, ctls	23,636	74,997	18,653
Corn, ctls	3,848	78,394	14,715
Beans, sks	1,233	43,533	33,719
Hay, bales	8,201	196 331	125,575
Wool, lbs	....	830,690	1,848,923
Hops, lbs	6,606	326,641	562,526
Honey, cases	45	1,846	4,264
Potatoes, pkgs	5,777	92,080	85,899

Another California Poppy.

Mr. Charles E. Jenny writes in the Fresno Republican about a less known eschscholtzia than the common one, which is the State flower of California, as follows:

There is another poppy, indigenous to our valley, but so much scarcer that not many people are familiar with it. About the only place I have found it is in the wheat fields along the San Joaquin and much more plentiful on the Madera side than on ours. This is Eschscholtzia eæspitosa. It is yellow and might very easily be mistaken for a cream cup, Platystemon Californicus, by a short-sighted person. The foliage, however, is like that of the California poppy and could not be easily distinguished from it without the flowers, though ordinarily it is much smaller, growing only 2 or 3 inches high. But the flower stems rise tall and slender several times the height of the leaves, 6 inches to 10 inches, and usually quite a cluster of them. The flowers are about 1 inch in diameter or less and not so deep as Eschscholtzia Californica, but more saucer-like or even flat. The receptacle at the base of the petals or capsule has no rim like the commoner species. It may be the scarcity of these flowers, or it may be the relief from the intense color of the golden poppy, but one often exclaims at sight of these little poppies that they are even handsomer than the large ones. They certainly have attractions of their own.

Adulterated Wine and Beer.

Wine of good quality can be got very cheaply in these days. Yet much of it is adulterated. Cheap claret is actually made in London from raisins with sugar and yeast thrown in. From the remains of the raisins another brew is taken off. It is as light as hock, and would not sell readily in that condition, so it is brought to the redness of claret with an admixture of fuscinct and campeach bark. Champagne of the cheaper kind is often made from cider. Beer probably takes the palm for adulteration, and here again you find the adulterator saying he only does it because his customers do not like the pure article. Few of them have ever had the chance of forming an opinion. To impart bitterness, picric acid, picrotoxin, wormwood, aloes and gentain are put in. To give beer a "head" and the flavor of age, the brewer introduces sulphuric acid, sulphate of iron and alum. To make you drink more, the publican puts in salt sometimes.



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Patrons of Husbandry.

Potter Valley Grange.

To the Editor:—The Grange here has recently increased its membership by an addition of fifteen, who took the fourth degree, followed by a harvest feast on the 4th inst. After the feast the Worthy Master gave the new members some valuable instruction, as well as the old members, principally along the line of degree work, emphasizing the fact that the Grange is what we make it. The Overseer also offered some timely instruction. A communication was read from Prof. D. T. Fowler as valuable instruction to new and old members.

Several speeches were made, encouraging and welcoming the new members.

Although we cannot boast of any great work done in our Grange in the past, as a body the members have been united, always observing their anniversary by a feast, discussing topics from time to time, and meeting not always, but never failing to meet now and then, usually the specified times in winter.

The Grange is the only Order in our midst which owns its hall, and has also an organ and a piano.

Foremost among the promoters of the Farmers' Institute work are the Grangers, giving their hall and helping otherwise. Ere another Institute year we expect the Institute work to be conducted under the auspices of the Grange.

Our class began with sixteen, but one could not be with us for the last degree. We expect soon to take in another class with the third degree member, as others are waiting and anxious to come in.

A committee was recently selected in our Grange to draw up resolutions favoring agricultural education in our common schools, as per State Grange action, which were forwarded to our Congressman and Assemblyman. A reply was received from our Congressman, saying he would do all in his power for the passage of the measure.

We are expecting development in our Grange work here if unity can be preserved, and development in our community, as in a little over a year's time Eel river, which is 6 or 7 miles from us, will be so operated as to irrigate our lands and furnish electric light for this place and the surrounding country.

Rosa L. Sides,
Lecturer.

Agriculture in the Public Schools.

The declarations of the Maine State Grange upon important questions related to agriculture are strong, forceful, positive and conservative. Especially is this true regarding the position of the State Grange upon the subject of education. During the session which closed December 22, with more than 1000 people present at the deliberations, it was unanimously voted to go before the Legislature and secure action by which a department shall be established for training teachers in our normal schools to teach the elements of agriculture in all the schools of the State. This is the beginning of a united movement for the more thorough training of the coming generation in the next quarter of a century. As indicating the views of the Order upon the subject of education, I present the report of the committee, a report which was enthusiastically adopted, and provisions were made for issuing the same in pamphlet form for distribution among the Patrons of the State. It was prepared by a practical farmer, and voices the convictions born of experience. Here are the main portions of it:

"We learn not for school, but for life, and the State owes each of its future citizens a thorough training in the rudiments of education which pertains to a practical life. The only hope the State can have of maintaining the perpetuity of its republican institutions is through the efficiency of its schools along practical lines. It is not what to do for the child, but what we can encourage the child to do for himself that helps him most. Herein lies the great secret of the successful teacher. The wise teacher looks forward and encourages her pupils along such lines of study as will best enable them to acceptably perform the complex duties that are soon to devolve upon them.

"The great mission of the public school is to fit our young men and women for honest, intelligent citizenship. It is far better to have a distinct idea of a few things than to have a faint idea of many things. We, therefore, believe that the number of studies now taught can be judiciously abridged. A less number of branches better taught will materially add to the efficiency of our schools. We insist upon a sufficient knowledge of the English language to enable one to read fluently and understandingly. Reading will then be a pleasure, and will become a favorite pastime in after life.

"Sufficient drill in composition should also be given to enable one to express his thoughts in clear, concise, idiomatic English, either orally or in legible, correctly spelled script.

"As 90% of our boys and girls complete their education in the grammar school, it is evident that the grammar school should be the strongest link in the educational chain.

"We believe that the grammar school course should be lengthened by at least one year, and that the salaries of its teachers be increased to a level with the salaries received by high school teachers. The present gradation of teachers' salaries is wrong, for it calls the best teachers to the highest grade, while in reality the lower the grade the better the teacher required. But good teachers alone will not insure good schools. The parents must extend the hand of sympathy and encourage the teacher by manifesting an interest in her behalf.

"It frequently happens that many good graduates of our high schools become interested in special lines of work, and while they have neither time nor means to take a full college course, yet they would like the privilege of pursuing special lines of work in our higher institutions of learning. We believe that our colleges should carefully consider the needs of this class of students and provide for their admission to various special courses.

"In addition to the foregoing report, we desire to make three special recommendations:

"First—That the laws relating to scientific temperance instruction in our public schools be enforced.

"Second—That some systematic arrangement be made whereby all those who desire to become teachers in our public schools shall first receive a special training in some practice school under the careful supervision of an able principal.

"Last, but not least—That provision shall be made for a general introduction of a systematic course of industrial education."

Tulare Grange.

To the Editor:—The regular meeting of Tulare Grange was largely attended. Past Master F. Stiles called the meeting to order.

The Grange, by resolution, indorsed the Raisin organization and requested all vineyardists to give their influence to it.

A committee was appointed to note what benefit had been received from the increase of bounty on squirrel tails and report from time to time.

The question box contained several questions which, under the leadership of Lecturer pro tem Miss Swanson, were answered by several members in an intelligent manner.

Question: "What Are the Possibilities of the Grange?"

The possibilities are great. Its success depends on the liberality of the opinions of its members, backed by united action, by which it will have agriculture taught in our public schools, and this will have a tendency to keep the farmers' sons and daughters on the farm. No one can picture what the results may be, for the field of its usefulness is a large one.

Question of the day: "What Grange Events Should Be Observed by Our Grange in Addition to Holding the Regular Meetings?"

There are various events in the Grange calendar that should be observed with appropriate exercises, resulting in increased interest in the Order. One is Arbor Day, for planting of trees and decorating the school grounds; Children's Day, when the little ones are permitted to gather at the Grange halls and there make the old folks' hearts glad with their songs, recitations, etc.; Memorial Sunday, in memory of the departed members. The fourth day of December is observed as the birthday of the Order and celebrated from one end of the land to the other. The regular summer picnics in some convenient grove are looked forward to by members and friends. The Grange members should go as a body and exhibit their products at the county agricultural fairs. This is useful, as well as interesting.

E. C. S.

Grange Notes.

Sonoma county is the banner county, having eleven subordinate Granges and one Pomona Grange. Deputy Master D. M. Winans has been doing good work for his county. El Verano Grange was reorganized by him January 19th with 29 members; Penn Grove on February 18th with 39 members; Windsor Grange was organized March 4th with 32 members. He has also brought in 79 applications for Petaluma Grange, making a total of 179 members. Mr. Winans will begin in Hopland next week.

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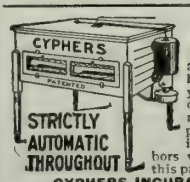
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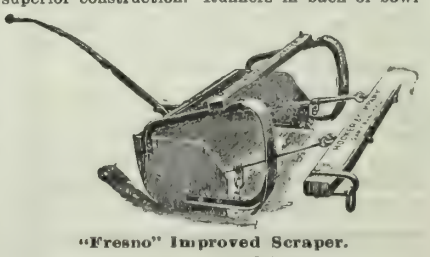
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THE ORNITHOLOGIST.

Two Bad Animals.

Dr. J. M. Barrickman of Sacramento, an amateur naturalist, thinks the fish and game bills introduced into the Legislature to protect game birds should be so framed as to destroy certain animals that do more damage in a single season to birds of all kinds than all the sportsmen in the State in ten seasons. Dr. Barrickman's special aversion is the mephitis mephitica, more familiarly known as polecat or skunk, and the viverra civetta, or civet cat. These animals prey upon birds and eat up their eggs. According to the doctor, in an account published in the Union, the State should prey upon them.

Skunk and Cat.—There are two animals that kill more birds, game and others, than all the sporting men and pothunters put together. They are the skunk and civet cat, both of the cat family. The former, from a little before sundown to a little after sunrise, goes about poking its nose into tufts of grass, under trees and bushes, stumps and niches in search of birds' eggs and young birds. It pounces upon old ones in the darkness, scattering broods of quail, grouse, etc. Then it picks up the hiding young ones at leis ure, something like one eats strawberries off the vine.

The civet cat is little, if any, less a bird scourge. And more than this, these two varmints follow the "bird belt," changing their habitat higher or lower—in fact, so worthless or lazy are they that they do not even dig their own burrows, but drive out of house and home with their offensiveness other animals that burrow. Nor do either of them compensate in any degree, so far as known, for what they take from Nature's stock and store, as do most all other animals. If a sportsman, regardless of his enthusiasm or size of his family, kill one bird, perchance at the last shot, than the law allows, he is dragged before a peace officer and made to feel like a criminal. I do not condemn this law; I merely claim that it should include all the other animals that kill birds besides sportsmen.

The Proscribed Coyote.—The coyote is proscribed on account of the occasional lamb he may kill—often a cripple; yet many a coyote never tastes mutton during his lifetime. The reason of this is that he makes a noise, or otherwise attracts attention to his depredations. But the skunk and civet cat make no noise; they insidiously do their destructive work year in and out. Quail build nests upon the ends of broken bushes that extend near the gronnd or upon stumps, and naturalists believe this change in habitat—they formerly nested on the ground—due to the depredations of skunk and civet cat.

Again, there are men who are earning from $5 to $15 a day (so one testified at Fresno), killing birds for millinery purposes. An embalmed blackbird sells for $1.50, and others at higher prices, relative to size or color. Mrs. Josephine Clifford McClatchin of Wrights, Santa Clara county, who is known as Bret Harte's "Rose of Tuolumne," has done good work in organizing societies pledging women not to wear bonnets ornamented with bird carcasses.

Effect of Poisoned Wheat.—Again, the State allows poisoned wheat—or wheat boiled in a strychnine solution—to be used to poison to death ground squirrels. The ranchers to whom it is distributed cast the stuff at the burrow entrances instead of into the burrows. The consequence is that a few squirrels are killed, but many refuse to eat it. But the quails come along and eat it up. I have seen them lying in the sun, poisoned to death from eating the stuff, by hundreds.

I know one man who gathered 350 birds that had fallen along a hedge the day after he had placed poisoned grain in an adjoining field. This did not include those poisoned, but not killed, nor those that fell before reaching the hedge and water. The editor of the Fresno Republican will verify this story. I once saw a field literally covered throughout the length of an irrigating ditch with feathers of birds, bones of rabbits, etc., that had been poisoned to death.

Millions of birds are yearly killed by officials of the Southern Pacific Co. in their efforts to get rid of squirrels. After eating the stuff the birds usually alight upon the nearby telegraph wires and then fall dead beneath.

Squirrels as Fertilizers.—There is not a cubic foot of soil lying in the valleys of this State that has not been dug up from below and spread upon the surface by these same squirrels, either after or before reaching the valleys. Thus, during past and present geological ages the squirrel has been preparing the earth for our profit. Besides, he is a sub-irrigationist; he admits water to lower depths and, in the form of bedding, carries down nitrogenous matter to rot and be afterwards fetched to the surface by erosion. Does a squirrel destroy grain in a properly cultivated field? If so, how much? He eats seeds and roots, thus recompensing hundreds of times over for the few handsful of wheat he may eat or destroy during the few days of harvest or weeks of growth.

I do not condemn altogether the present laws, for they are far better than none at all, but I would have laws framed that include the very worst enemies of the gentle bird, viz., the worthless skunk and civet cat.

Dangerous Pole Cat.—The skunk is the only true dangerous animal that we have on the coast. His bite is very poisonous, and by some it is claimed causes hydrophobia. The animal will attack you if you lie down near its burrow or young. It will linger near, making a sound like the breaking of dry twigs, but will not attack you until after you move or wake, when it will rush up and seize you by the ear, nose, toe or finger. It has not sense enough or cannot let go its hold even after being beaten to death.

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FRUIT MARKETING.

A New Shipping Box.

A change is to be made this season in the crate or package used by deciduous fruit shippers affiliating with the California Fruit Distributors. If the experiment proves successful, as it is expected to, the new package will probably be adopted by practically all California packers of deciduous fruit.

The nature of the change is explained in a resolution adopted by the California Fruit Distributors at a meeting held recently:

Resolved, That all shippers affiliating with the California Fruit Distributors discontinue the use of the present form of crate and basket for the shipment of crate fruits, and that they use a package based on the size of the present peach box, with three baskets made to fit therein side by side, the reason for the change being that the fruit can be packed more easily in the contemplated baskets and that the peach box or crate of that dimension will load more readily and easily in the cars for Eastern shipment. There will be no stoppage of air passages in the cars and circulation will be unimpeded. Fruit of the different varieties can be loaded directly into the iced cars from the wagons without having to wait for tiers of the same variety of package.

It is thought that better success can be had in the sale of the fruit and use of the package by unanimity of action on the part of the shippers. Fruit shippers and manufacturers of packages have been notified of the resolutions, and it is probable that most of them will concur in putting it into effect. The extent of the use of the packages will depend largely upon the attitude of the trade toward it, but it is thought that this will be favorable. One good point in connection with the use of the proposed new package is that long bunches of grapes will lie better in it than in the square packages formerly used.

Many people raise poultry without endeavoring to make it a business. If prices are any criterion there is every incentive to increase the flock and the profit. George H. Stahl of Quincy, Ill., says he has sold hundreds of his 200-egg hatchers to people who are making good money with them.



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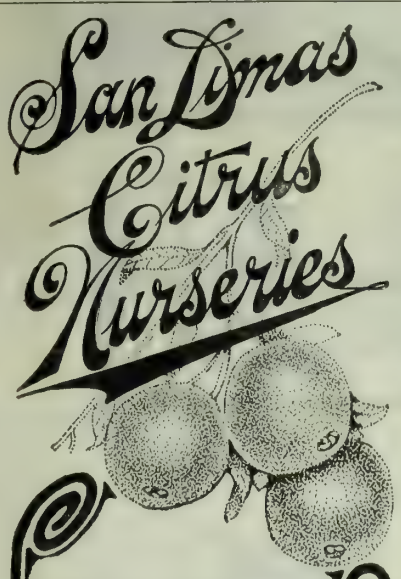
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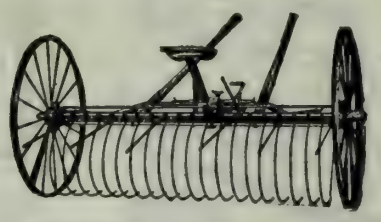
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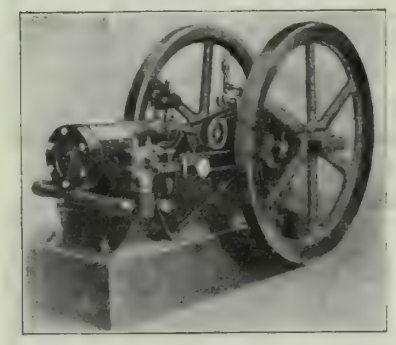
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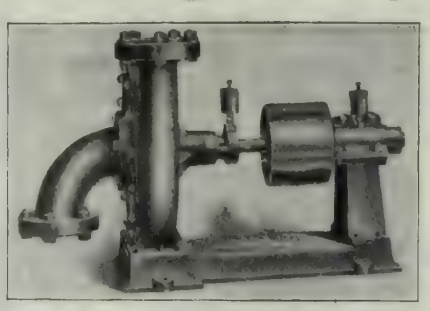
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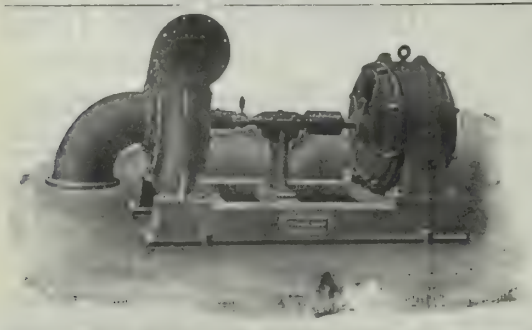
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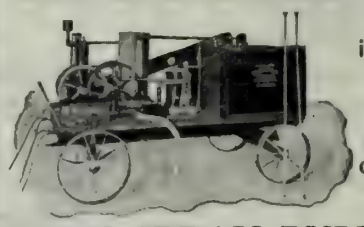
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Long Distance Water Piping.

We have during the last few years given several illustrations of long conveyance of water over and through most uneven country by pipe lines. California has a number of notable undertakings of this kind. To compare with these, and to show that the method widely prevails on the Pacific coast, we show herewith interesting pictures of the construction of the pipe lines and of its traversing most irregular topography of the perpendicular cliffs which mark the boundaries of the canyon of the Walla Walla river.

It was along the south wall of this gorge that the line was located. At five different points along the line deep narrow side canyons entered the main canyon. These were too deep to cross at grade. At these points inverted syphons were introduced into the line.

The staves for the pipe were cut from 2x6-inch yellow fir and kiln dried. They were provided with a large percentage of the line was on trestle foundation, which made the work of curving the pipe extremely difficult, as the character of the bluffs made it impossible to brace the trestles against the strains imposed by curving the pipe. It was often necessary to drive gads into the rock and anchor the trestle by means of a chain and "twister" until the pipe was in place and cinched. In curving the pipe away from the bluff ordinary screw jacks were employed, a saddle cut to fit the outside of the pipe



Curving the Pipe by Means of Chain Blocks.



One of the Inverted Syphons.



Pipe Line Skirting a Perpendicular Cliff.



Approach to Tunnel on 70-Foot Trestle, Built on 200-Foot Radius.

A Notable Piece of Pipe Line Construction for Water Conveyance in Oregon.

surface, suspended over ravines, shooting through tunnels and climbing mountains, adapting itself to the lateral and vertical curvings and generally getting there with its water as no ditch or flume could do.

The enterprise indicated by the pictures is situated in eastern Oregon, but the system was designed by a California engineer and the pipe was built by a California firm—the National Wood Pipe Co. of this city.

The one feature of the work which gives the structure especial prominence in the list of difficult undertakings is the alignment made necessary by the horizontal slot in each end to receive the oak tongue used for butt joint connection. The bands were round mild steel, having a tensile strength of from 58,000 to 68,000 pounds, ½-inch in diameter, except for pressures over 100 feet, where those having ⅝-inch diameter were used.

The line being from 20 to 350 feet above the valley, and on an almost perpendicular bluff, the task of delivering material to the work was no easy matter. The work of construction was attended with many difficulties, both in actual erection of the pipe and in providing for the safety of the workmen. A very being used to jack against, this preventing flattening. When necessary to curve the pipe toward the bluff, chain blocks of one ton capacity were used, making fast to the bluff by means of a gad driven into the rock and to the pipe by a chain sling. In this case it was necessary to put a strut inside the pipe to prevent crushing. The chain blocks were left in place until the section was driven and firmly cinched, after which it would remain in position, then the whole operation would be repeated. These operations on trestles, themselves 60 to 70 feet high, made the utmost caution of the workmen necessary.

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SAN FRANCISCO, MARCH 25, 1905.

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The Week.

Since our last, rains have been widespread and liberal, dry places have been made wet and wet places have gone under water in spots. Of course the benefit, on the whole, will be almost incalculable, and the season's field crops are assured by the generosity of the spring rains. Fruit has set well except in late blooming sections where the blossoms have had too much drenching.

Those who have gone through the Sacramento valley recently have found the inland seas widespread because of too much water for the capacity of the river channels, and some loss of promising grain has been experienced. This fact will increase the satisfaction over the work of the last Legislature, which has just been approved by the Governor. This is the first fruits of the engineers' experting of the situation last summer and there is now provided a reclamation district which should embrace practically all the lands along the San Joaquin and Sacramento rivers, which are subject to overflow, in one grand reclamation district of over 1,250,000 acres, which will be governed in reclamation and drainage work by a Board of Commissioners elected by property owners on a basis of assessed valuation of their land. Nine commissioners, representing the several counties in which this vast reclamation district lies, will be elected in September. The next effort will be to enlist the United States in doing its share of the work for the improvement of the rivers. It is now proposed by the California River Improvement and Drainage Association, as well as other promoters of this work, to ask the Federal and State Governments and land owners to share each one-third the expense. This, if it works out in this way, will ensure the safety and productiveness of a large area and add largely to the production and taxable valuation of the State.

Spot wheat is unchanged, slow and little offering. Futures have been mostly upward since our last report, but close lower in sympathy with the condition at distant centers at home and abroad. A part cargo of barley has gone to Japan and this leaves the market bare of engaged tonnage. Barley is firm for feed, but unchanged. Oats are quiet; a cargo of common feed from the north is still unsold; fancy oats are scarce. Corn is stiff. Beans are firmer for large white and blackeye, but easier for Limas. Millfeeds are steadily held, but little doing. The only hay demand is for small lots of choice stable. Beef, veal and mutton are steady and lamb lower; hogs are holding up well. There is a good shipping demand for butter, but supplies are ample; prices are lower than last week, but the market is steady at the decline. Cheese is in good demand and flats for shipment are firm. Eggs are dragging a little, as prices seem above the views of buyers for storage. All choice, full-grown young poultry is in good shape and receipts moderate. Choice table potatoes are firm; others weak. There is a fair supply of onions, but they are not very active at the prices asked. Fancy table apples bring fair figures; others are unchanged, with small supplies and scant demand. Good oranges are firm, but punky fruit is weak. Lemons are stationary. All dried fruits except prunes are in good shape. Nearly 200,000 pounds of dried fruits have gone out by sea to all parts of the Pacific. Nuts are unchanged. Honey is quiet and weak, with another receipt of 248 cases from Hawaii. Hop values are wide apart between buyers and sellers. Wool is strong, and none of 1904 clip now in dealers' hands, but buyers are amusing themselves by talking downward.

The making of "sugar wine" is a safer business in some nearer places than it is in Germany. This week's consular reports tell of one Kerth at Landau who had made wine from grape skins and sugar and put part of it on the market. At an official examination of his wine cellar a large quantity of this wine had been sealed. Kerth sold about 5000 quarts from these sealed casks, and the penalty imposed by the court was five months in jail and confiscation of the wine. We wonder what would have happened to him if he had made alleged wine without even getting as near to the grape as the skin!

Co-operative organization for fruit selling seems to be on the up grade again. Mr. Theodore Kearney at Fresno has rallied the raisin interest again in what it may be hoped will be a more effective organization than has been attempted hitherto. In the prune world at San Jose there is also new promise, for the Cured Fruit Promotion Committee is actively at work. The packers are already organized to some extent, and now it is proposed to effect organization of the growers where local co-operative establishments do not exist, so as to enable the fruit raisers to market their produce to better advantage.

There may be a suggestion for California in the good road work now in progress in Iowa. They are going to have a Good Roads School at the Iowa Agricultural College at Ames on June 12 to 18 and one of the instructors is to be Mr. D. W. King of Maitland, Mo., whose specialty is the maintenance of earth roads. A large proportion of Iowa's 100,000 miles of public highways for an indefinite period will be necessarily maintained as earth roads and the Commission has been very strongly recommending some form of continuous maintenance as the best and most economical. A number of farmers' clubs have been organized to try this plan this year, and many individuals will also take it up. A variety of tools may be used, including an ordinary harrow, a light steel railroad rail, and several forms of home-made scrapers. The idea of the continuous maintenance is to go over the road when it is beginning to dry after each wet period, to smooth the ruts and to preserve the crown of the road. Mr. King is, perhaps, the most prominent and successful advocate of this system, and he has contrived the "split log" or "Missouri drag"—the name explaining the material from which it is constructed—for the purpose. There is much sense in the proposition. If California earth roads could be put in good shape and kept in shape to shed water, the local problem would be largely solved in some parts of the State. It is worth thinking hard about, just as they are thinking in Iowa.

The merchandise movement in practically all sections except in portions of the South, says Bradstreet's, has expanded, the railways are handling a large traffic, preparations for an active building season are reflected in the market for material, and the iron and steel and allied industries report unprecedented consumption for this season. No diminution in the hitherto existing confidence regarding the outlook for the year's trade is visible, and an immense turn-over at profitable rates is evidently expected.

QUERIES AND REPLIES.

Will a California Farm Do It?

To the Editor:—I am thinking about a farm property that will combine social and climatic advantages, proximity to some fair-sized town, in a location with no extremes of heat and cold. The maximum I can invest will be about $7500, and the property must carry itself in my absence and afford my parents, who are getting along in years, a fair maintenance. It should be large enough to require the services of a hired couple to do the heavy work. Am I looking for that which California will not afford? It occurred to me that a property which would maintain a small dairy, a fair-sized poultry flock and some fruit would offer the best solution of the problem. Any suggestions which may occur to you will be very gratefully received.—Enquirer, New York.

To be perfectly frank, we hesitate to give you any assurance that you could be sure of clearing 10% by an investment of $7500 in farm property. The income of such a property is so thoroughly conditioned upon the management that it is not safe to prophesy results. The care of trees, prompt and effective protection of them against insects and diseases, and the handling of the product itself, make sharp requirements of energetic work and knowledge based upon local experience. For this reason we doubt whether one somewhat advanced in years, and presumably unacquainted with California horticulture, could be sure of such profits as you desire, and the dairy and poultry flocks would make additional requirements in the way of effort and understanding. It would be very difficult for you to find a hired couple who would earn much more than their wages and support. It would be a safer proposition, if it seems to you feasible, for you to rent a small place near a town and let your parents try California life for a year with a cow and a few trees and chickens, until they could see whether they could manage the work on a very small scale, and on the basis of such experience, with the opportunity to see what is being done in the neighborhood, to undertake investment a little later, if it seemed justified. Our general impression is that $7500 safely invested on a mortgage or in some other way would yield more than agricultural property in the way you calculate to handle it. We have seen a number of instances of disappointment along such line, which make us conservative about approving your proposition. On the other hand, there are very satisfactory successes. It seems to depend more upon the personal effort and satisfaction than upon the particular place, and so we propose that you endeavor first of all to see whether such an undertaking is to the liking of your parents. In order to get a region which is neither warm nor cold, you must keep to the coast valleys, and not to the interior valley or foothills.

Bean Growing in Stanislaus.

To the Editor:—I intend to plant a few acres of beans this year. My plan is to check the ground and flood it in the latter part of May or in June, then plow, plant and cultivate the ground thoroughly whenever necessary. Is there any better way? What variety of seed is best to plant, and how deep should I put in the seed? How deep shall I plow? There is an old plow crust down about 4 to 6 inches which gets terribly hard in the summer, though hardly noticeable when the soil is wet. Should I break this up? Which is best for beans, sandy or hard soil? How many sacks per acre should they yield?—New Subscriber, Turlock.

We cannot see why you propose to put in your crop so late, unless you have something else on the ground which you expect to get off about that time. If the land is clear now we should plow at once deep enough to get below the plow-pan while it is moistened by the rains, harrow well and let the land lie until you are safe from frosts, and then disk lightly to kill the weeds and put in the beans. Ordinarily this would be in the latter part of April or first part of May—about a month earlier than the date you mention. If, however, the land is not now available, you can proceed as you propose by flooding and plowing later in the season, but it will be harder to get the land into such good shape as you can now on a rainfall basis. The sandy soil will be better for beans if you have water available, but do not irrigate too late. If the beans set a good crop, do not keep the plants growing too late. The pink bean is the hardiest on the higher land of the valley. On sandy soil, with late planting, you can cover 2 inches or more,

We cannot tell what the crop will be; that will depend much upon circumstances of all kinds.

Australian Rye Grass.

To the Editor:—Is Australian rye grass a perennial and what kind of hay does it make? How often can it be cut in a season? Will it grow on adobe land or also on red hill land which can be irrigated? Does it require much water? I have tried alfalfa on the above land, but cannot make a success of it. Will it produce a crop the first year and how many pounds of seed per acre does it require?—Enquirer, Tehama county.

Australian rye grass is a perennial, and providing it is irrigated during the dry season will make at least two cuttings and perhaps more. The hay, however, is rather coarse and the grass is on the whole better adapted for pasturing purposes, unless it is to be cut to be fed green. In that condition it answers very well and is grown on water meadows in Europe for green feeding and very large amounts are cut during the season. It is a hardy grass and will do very well on rather heavy soils, providing there is moisture enough present. The best time to sow the grass is at the beginning of the rainy season, and it will come up quickly and make some winter pasturing the first year, unless the temperature is too low, and be ready for cutting the following summer. About fifty pounds is the quantity to sow to the acre, and there is no grass which promises better, so far as we know.

Cutworms and Potatoes.

To the Editor:—Will the cutworm destroy potatoes? I have had planted about twelve acres of potatoes which will come up in about a week. Cutworms have destroyed a small patch of garden around the house. They cut the onions, beet tops, peas and other truck down. If they will destroy potatoes, is there any way of preventing it or getting rid of them?—Farmer, Kings county.

Fortunately cutworms do not do much with potatoes and growers do not pay much attention to them, though probably a fool cutworm, forgetting the traditional tastes of his race, does now and then take a good nip at the plant. The solanum family is obnoxious to some insects, though freely enough eaten by others. As for killing cutworms on other plants, they have to be tempted to eat something else before they strike the plant, for even if it have its surface poisoned, such a worm can destroy it before he feels the burn of the poison in his vitals. The arsenic-bran-molasses mixture so successfully used for grasshoppers works well also with cutworms, providing your chickens do not get the dose before the worm reaches it.

Likes Our Cassabas.

To the Editor:—When attending the Grand Conclave of Knights Templar of the United States in San Francisco last August, I ate some of the most delicious melons I ever ate in my life. They were of the cantaloupe variety and were much sweeter than the celebrated Rocky Ford melon. I think they were called the Mesaba melon, but I am not sure of the name. I was foolish in not saving some of the seed when I was in California. If you will send me some I would be under great obligations.—J. L. B., Atlanta, Ga.

Judging by the similarity of the name, you probably had a Cassaba, a Persian melon, quite largely grown in California to follow the summer cantaloupes and available all through the fall and early winter—in fact, in thermal places picked fresh from the vines until near the holidays. Any California seedsman can supply you any amount of seed, or you may be able to get them in your own town, although we apprehend that the late-fruiting melons do not do as well in the South as in California.

Canning Sweet Potatoes.

To the Editor:—We are reaching a large product of sweet potatoes and it would seem desirable to seek all available ways of disposing of it. How about canning sweet potatoes? Is there much of that done?—Grower, Merced county.

We have no special knowledge upon the feasibility of canning sweet potatoes, nor of the desirability of such a product in the trade. The census of 1900 shows that the whole amount of sweet potatoes canned in the United States are valued at $127,667, and the weight of the product was 6,205,488 pounds. This product was almost wholly made in the States of New York, New Jersey and Maryland. California is credited with putting up 10,656 pounds, with a value of $396, so you will see that exceedingly little has as yet been undertaken with sweet potatoes on this coast. The method employed of canning and the difficulties which are encountered must be ascertained from those who have had experience in that line, and probably some one acquainted with canning could be interested in taking the enterprise up with your growers when it becomes known that supplies for canning are available.

Bacteria for Legumes.

To the Editor:—Are the bacteria causing the root tubercles found on the ordinary burr clover suitable for the best growth of alfalfa? I have soil that grows large crops of this burr clover and the roots are heavily covered with tubercles. If this same bacteria will take hold of the alfalfa I will not need to inoculate.—Grower, Santa Clara county.

We are not aware that it has been definitely determined whether the bacteria living upon the roots of different leguminous plants are different species, or whether they all belong to one polymorphic species. The latter view seems to prevail at the present time and the name given to the species is Pseuomonas radicicola. If this view is correct then bacteria which manifest themselves abundantly on the roots of burr clover, as you state, might also be effective in producing tubercles upon the root of alfalfa and you can distribute them by scattering soil from the burr clover field in the place where you propose to grow the alfalfa, or in all probability these bacteria already exist quite abundantly in California soils, which may have something to do with the fact that alfalfa sown without inoculation produces such magnificent crops as in California. The presumption is that inoculation need be undertaken only in soils mechanically suited to the growth of alfalfa but where such growth is not attained.

Brome Grass in California.

To the Editor:—I read about a grass called "brome" which is said to grow upon arid land. Has it been tried in California?—Reader, Modesto.

The grass to which you allude is undoubtedly the Hungarian brome grass. It was introduced into California by the University Station about twenty years ago, but recently it is becoming more famous because of its reputation in the Central West, where it has proved to be quite drouth resistant. In California it is a good winter grazing grass, but will not endure the long dry seasons except on moist bottom lands, and even in such situations it is not so good as the Australian rye grass. You can get seed of both Hungarian brome grass and Australian rye grass from the San Francisco seedsmen, but neither they nor any other grass, as far as experiments thus far have shown, can be relied on to make a summer growth in the dry season without irrigation on interior plains or foothills. If one has irrigation water it can probably be more profitably used in the production of alfalfa.

Sheep and Fruit.

To the Editor:—I expect to reach New York about April 1 and wish to know about fruit and sheep farming combined in California and I will look in your columns for information along that line.—Reader, London, England.

There is practically no combination of sheep and fruit farming in California, except perhaps in the upper part of the Sacramento valley, where there are sheep ranges adjacent to the fruit lands. Our fruit is, however, mostly grown by people who have no connection with the sheep industry, the latter being for the most part conducted on ranges of cheaper lands than those used for fruit. There is, however, an opportunity for higher class sheep farming than is usually practiced in this State and it might be successfully combined with fruit growing, especially in parts of the State where conditions are favorable for the growth of alfalfa. This is a matter which you had better look up personally after arrival in this State.

An Acre-Foot.

To the Editor:—What does Mr. Finkle, in his article on "Irrigation in Kern" mean by the expression "acre-foot"? Thus, he estimates that there should be a mean of "four acre-feet" of water for irrigation in Kern. Is this the equivalent of an annual rainfall of 48 inches?—Reader, San Francisco.

Yes; that is what it means. An acre-foot is 12 inches depth of water over an acre of land. We think the estimate of the requirement of water is too large, but they use water very freely in that county and much of it "goes below" undoubtedly.

Injured Bark.

To the Editor:—Will you please tell me what is the best thing to put on trees where the bark has been scratched or broken in cultivating?—Grower, Fowler.

If the injury is so large as to endanger the thrift of the tree, remove the loose pieces, put on a plaster of cow manure and clay and bind with a cloth to retain the moisture; and if there are granulations left on the wound, new bark will begin to grow from them. If, however, the wound is relatively small, cut around with a sharp knife to good bark, paint the wound with a little thick paint and it will soon grow over from the edges.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 20, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The continuous light rains during the week caused a suspension of all farm work, but no serious damage resulted from either rain or high southerly winds. Heavy rain fell in portions of the northern section on the 19th. Slightly cooler weather prevailed at the close of the week. Grain continues in good condition and the outlook for large crops was never better. Alfalfa is making rapid growth and heavy crops are expected. Green feed is unusually plentiful and stock are in good condition. Almonds, apricots and peaches are well set and probably past danger from frost, but grapes are so far advanced that severe frosts would cause great damage. Prospects are good for heavy yields of almonds and all deciduous fruits. Citrus fruits are in blossom.

Coast and Bay Sections.

Warm weather, with frequent heavy rains and strong southerly winds, prevailed nearly all the week. The soil is thoroughly saturated and farm work has been suspended. No material damage was done to crops by the rain or high winds, but roads and bridges were washed out. Grain made good growth and looks well; the prospect for a heavy crop was never better. Barley is reported remarkably heavy in Ventura county. Alfalfa continues in good condition and will yield a large crop. Green feed is plentiful. Deciduous fruit trees are full of bloom and advancing rapidly, with prospects of heavy crops.

San Joaquin Valley.

Cloudy weather, with heavy rains, prevailed during the week in the valley and heavy snow fell in the mountains. The rains have been the heaviest of the season. Irrigation ditches are running full and farm and orchard work is suspended owing to the wet ground. In some localities in the extreme northern portion of the valley summer-fallowed grain and alfalfa are lodged, but in general grain and grass are making rapid growth and are in excellent condition. Fruit trees and vines are thrifty, but it is thought that the high wind of the 12th caused damage to the deciduous fruits in some sections. Stock are in excellent condition and healthy.

Southern California.

The weather continued warm and cloudy during the week, with frequent heavy rains in all sections. Some slight damage was done to growing grain and cut alfalfa, but in other respects the rain was beneficial to farmers and orchardists. Railroad traffic was blockaded by washouts and considerable damage was done to piers and bath houses at seaside resorts by the high winds and surf. The large reservoirs are nearer full than for several years and water is still flowing in. Farm work has been suspended. Grain and grass are in good condition and growing rapidly. Orange trees are in blossom and deciduous fruit trees are advancing satisfactorily.

Eureka Summary.—The weather was generally favorable. Crops are in excellent condition and making rapid growth. Gardening is progressing favorably. Fruit trees are in full bloom and exceptionally promising. No snow on the mountains.

Los Angeles Summary.—The heavy rain and wind storm on the 12th caused oranges and fruit bloom to drop in some places, but reports generally state that the damage was light. Heavy rains during the week filled rivers to overflowing and some ranches were badly damaged by washing.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 22, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	1 90	25 65	51 89	36 89	60	44
Red Bluff	1 50	29 56	25.94	21 50	64	40
Sacramento	1.76	18.06	14 06	16 05	64	46
San Francisco	1 75	17 51	17 20	19 33	60	48
Fresno	1.14	9.92	5 23	7 18	66	44
Independence	.86	3 00	1.79	3 26	68	32
San Luis Obispo	1.46	19 76	11 24	17 28	66	44
Los Angeles	2.14	17 78	5 45	13 93	66	48
San Diego	1.50	13 46	2 96	6 93	68	50
Yuma	1.26	8 53	0 94	2 72	80	52

THE POULTRY YARD.

The Care of Young Chicks.

To the Editor:—The most important thing for the first twenty-four hours of a young chick's life is the proper amount of heat. When under the hen about the same temperature is given to the eggs hatching and the chicks hatched, and it is a great mistake to take chicks from an incubator where the temperature is about 102° and put them in a brooder where the temperature is between 80° and 90°; 100° is none too warm for the little chicks for the first two days at least, provided the ventilation is good and a constant current of fresh air is entering the brooder. Let a chick become chilled and bowel trouble will develop in a short time, while with good warm quarters and fresh air there is very little danger of any sickness.

After twenty-four hours give the newly hatched chicks hard boiled egg chopped fine mixed with oatmeal, about half and half. I find that the chicks relish it more when the oatmeal is dried or parched in the oven before mixing with the egg. This allows the mixture to be a dry one, and chicks thrive much better on dry than wet rations. Sometimes I mix a little sharp, clean grit or sand with their food, if not it is placed where they can easily reach it; also some fine charcoal, which they eat with avidity and which aids digestion. I also give them water from the first, all they can drink, having a fountain arranged so they cannot step or fall into the water. See that the fountain is kept scrupulously clean and the water fresh.

For the first ten days I feed every two hours, giving them a little at a time, only what they will eat up clean; about the third day I begin to decrease the quantity of egg, making the proportion of meal larger, also give a feed of cooked cracked wheat at night. The cracked wheat should be cooked as dry as possible; the chicks do not like it clammy or sticky. After it swells, if left on the back of the stove until the water has steamed away and the kernels are separate it will be just right for them. I also begin to feed chopped onion at about the third day; if onion cannot be procured, lettuce, cabbage or clover will do, but I consider onion the very best of green food for chicks. I generally give it for their noon feed in place of the grain or egg and meal. They soon become very fond of it; as the fumes come up into their faces they shut their eyes and look like a very sick and drooping lot of chicks for a few seconds, then they greedily eat until again overcome by the odor, and rarely do they stop eating until the last bit is gone.

A close watch must be kept during the ten days for drooping chicks. Often one will be found whose crop is distended by gas; a teaspoonful of baking soda dissolved in a cup of water, and a teaspoonful of the mixture given two or three times a day will usually bring the little fellow around all right.

If any bowel trouble is noticed add fine charcoal to their onion feed, and in a short time you will see a decided improvement. But eternal vigilance must be used to take the little disorders when they first appear, if one would be successful with these simple remedies.

After the fifth or sixth day vary their food still more, giving bread which has been soaked in milk and squeezed dry, a little meat chopped fine, some uncooked cracked wheat, and daily increasing the amount of eggs. Any scraps from the table are greatly relished by the little youngsters.

It is of the greatest importance that meat or vegetables given them be chopped fine; remember that the grinding takes place in the gizzard, not in the crop, and a lump of meat may be forced down the throat of a greedy little fellow that cannot pass from crop to gizzard. When the obstruction remains the chick soon dies, as no more food can pass to the gizzard and that remaining in the crop soon ferments. I had a very promising youngster die and could not see any reason for it, but a post mortem revealed a hard bit of cabbage stalk clogging the passage from crop to gizzard; so from dearly bought experience I emphasize chopping meat, etc., very fine.

If the weather is fine allow the chicks to make their first excursion out of doors when they are ten days old; but they cannot be turned out and left alone for any length of time, for some, weaker than the others, will become tired, and unless the weather is very warm may be chilled. They have no mother to call them when they begin to give their tired, cold peep, so their owner must be on hand ready to return them to the brooder as soon as they show that they are beginning to feel unhappy. It will be several days before they will learn to go to the brooder for warmth, rest and feed. A slight illness now will retard the maturing of the chick a month or more, while if they can be kept growing right along, early maturity will be the sure result.

Don't be in too great haste to let them out of doors. If the weather is not favorable, or if you do not have time to devote to them, keep them in the brooder. I have raised several broods of fine, healthy chicks which did not go out of doors until they were three weeks old; but if they remain indoors so long they must be kept busy. Hang meat, cabbage or lettuce so that they have to jump to reach it. Give them boxes of straw in which fine grains are scattered, that they may scratch for it; give them bones on which a little meat remains, that they may pick at them. This is particularly necessary with the active Spanish breeds that will surely get into mischief and eat each other unless kept busy. I have never had this trouble with the Asiatics.

From ten days until three weeks I feed the chicks five times a day, unless the days are very short, when four times will be sufficient. They should be fed as soon as it is light in the morning; if it is not convenient to feed them so early, then food should be left the night before where they can get it at daybreak. I always make it a point to feed mine at daylight, as I generally give them warm cooked cracked wheat for their breakfast.

As they increase in size, decrease the number in each brooder or they will crowd and the smaller ones will be trodden on and killed. A brooder that will hold seventy-five at first should have not more than thirty-five when they are a month old.

When they are well feathered and able to do without artificial heat, try and fill in the corners of the brooder, as they will crowd together and the ones in the corners will be killed.

From one to two months old feed four times a day, giving variety in feed. From two to three months feed three times, with a generous supply of green food of some sort. Avoid egg food and all highly seasoned food, unless a little red pepper with their soft feed about once a week. When one month old I feed a mash of feed cornmeal, middlings, bran and ground barley, equal parts, mixed with gravy from boiled crackling or meat. A little salt should always be added, and carrots cooked soft and added to it, they like. This with cooked cracked wheat, raw cracked wheat, chopped onions daily, and meat three or four times a week, is a bill of fare that will make them grow rapidly. The mash must be mixed so that it crumbles, not soft like mush.

After three months old feed but twice a day, but give some green food at noon and always make them scratch in straw or litter for their grain.

This may all sound like going to a great deal of trouble, but raising chicks is no child's play, I can assure you.

H. F. Whitman.

Alameda, Cal.

A Year's Work With Fowls.

About a year ago we quoted from the Perris Progress of Riverside county the experience of Mrs. E. E. Waters of Ethanac during the year 1903. The Progress has now secured a similar set of facts and figures for the year 1904

For the past four years Mrs. Waters has kept an accurate account of all receipts and expenditures. The following summary, therefore, may be considered absolutely reliable:

Stock on hand January 1, 1904	163 hens	13 roosters
Stock on hand January 1, 1905	191 hens	20 roosters

EGG ACCOUNT 1905.

	Number.	Price.
January	1,306	$27 98
February	2,220	31 98
March	2,185	39 91
April	2,376	35 64
May	2,384	42 19
June	1,761	31 36
July	1,416	27 67
August	913	20 45
September	436	12 70
Balance year	....	9 85
Totals	14,997	$279 73

No record of eggs was kept from September 20 to December 31, owing to the absence of Mrs. Waters in the East.

Taking the tables as given, 14,997 eggs at $279.73, the average price per dozen is found to be 22 cents. It must be remembered, however, that the unrecorded eggs which were sold for $9.85 would increase the total somewhat and bring down the average price to, say, 20 cents a dozen.

SUMMARY OF CREDIT ITEMS.

Cash received for eggs	$ 79 73
Cash received for fowls sold	45 33
Value fowls used for table	7 70
Value eggs used for table	10 00
Increase of stock	23 50
Total	$366 26
Cost of feed, etc	141 75
Net profit	$224 51

Taking 177 hens as the average number for the year, and making no account of roosters and chicks, the profit per hen is $1.27 for the year. Mrs. Waters' success may be summed up in the three words: "Attention to details." Her stock consists almost entirely of Blue Andalusians and some Silver Laced Wyandottes. Both breeds are famed for their laying qualities.

HORTICULTURE.

Peach Growing in Fresno County.

Mr. B. E. Hutchinson of Fowler gives the Selma Enterprise his idea of valley peach growing. He says: "There is no question about the future of this popular fruit as a paying industry. Any man who will devote his time and energy to this fruit can realize $100 per acre. Returns begin to come in in three years, but the best results are realized by closely pruning the trees so they will not begin bearing until five years old. The crop will then be large and, like the boy that has not rushed through his studies, will bring better results, and the trees last a greater number of years. There are trees now twenty-three years old that are in fine condition and produce well each year.

"One man with three horses can care for forty acres, except in pruning and harvesting, and yet have time to grow a vineyard and other fruits. The average prices of the dried peach is from 5 to 6 cents a pound, while they sometimes reach a much higher price.

"In regard to irrigation. The orchard should be irrigated twice a year, the last time about three weeks before the fruit ripens, which gives the fruit a large growth and insures a better flavor.

"The cost of bringing an orchard into bearing is about $60 an acre, in addition to the cost of the land, which is from $40 to $75 per acre. As compared with most other crops the peach is the best to handle, but at the same time many other fruits are produced to advantage. For instance, one fruit grower had plum trees along his irrigation ditch, which brought $13.50 a tree last season and have never sold for less than $3 per tree.

"Speaking of what is possible in fruit, we might state that on one of our fruit farms 400 trees produced 110 tons and 280 pounds of peaches, which sold for $17.50 per ton, green, bringing $1925. What one man has done others can do, and no place in California offers better inducements than the land in this vicinity."

Central and Northern California Orange Lands.

To the Editor:—Placer county, as it has been noted for several years, was the first to send ripe oranges into the San Francisco market this season, commencing delivery by the middle of October and finishing up its orange shipments for the season early in December, and before a carload of marketable oranges were shipped south of Tehachapi. And yet the Los Angeles Times of February 26th last disputed the validity of Prof. McAdie's map of the thermal belt in central and northern California as exhibiting "a large area of orange land capable of growing oranges," saying, "It is therefore not only untrue, but in the highest degree cruel, to thus represent to innocent Eastern home seekers that there is a huge belt throughout California within which oranges may be successfully grown on a commercial scale," etc. This article was immediately replied to by a northern California successful orange grower over his signature, which the Times refused to publish, but finally agreed to do if the article could be cut at its discretion, which the writer refused. Finally, upon some pressure, it agreed to publish it, but to date had declined to do it, claiming want of space. The article will, however, appear in another Los Angeles paper shortly if the Times does not find space for it.

It is pretty late in the day to deny the existence of northern and central California orange lands, which in reality are a dozen times more extensive than found south of Tehachapi, where oranges in perfection are grown from four to six weeks earlier than in the south. Facts are stubborn things to deny. In fact it is folly to dispute the accuracy of the United States Weather Bureau, which has systematically for twenty-five years compiled facts by numerous agents in the State. This thermal belt of 60° average temperature, conceded to be the most favorable for citrus products, enters the State from Nevada at the south end of Mono county, dropping down into Kern county, and then north through Tulare and Fresno counties, and onward through twelve counties to Shasta county, where it turns west and southerly in its route through thirteen counties, going out in Santa Barbara county, giving in its meandering a distance of 1100 miles north of Tehachapi.

It has a width of from 10 to 20 miles, and although portions in that width, from local features, may not be superior, it comprises in its whole a vast area which is capable of growing citrus products, as will be evidenced in the future without question.

This belt south of Tehachapi has an extent of about 200 miles, of which about one-third has been availed of in the south for orange growing, and where the average rainfall is less than 10 inches, while the northern belt averages from 15 to 25 inches. It is questionable if the water supplies of the south have not already reached the maximum of delivery, while the northern belt has abundant cheap water for all its area.

While the product of oranges from the north has not, from the best evidences which can be obtained, exceeded more this season than a tenth of the southern shipments of citrus fruits, its capabilities are equal to hundreds of thousands of carloads annually if so many are required, and the fruit ripens in perfection from four to six weeks in advance of southern

supplies because of the warmer temperature of the northern foothill regions in June, July and August when oranges make great headway, and turn yellow in October and November.

One may say if such conditions exist in central and northern California, why have they not been demonstrated during the period when the south made such headway? This was because the first attention was given to the growing of oranges in the south before there was general knowledge of the superiority of the northern foothills, and the great influx of orange growers seeking wealth in the south immensely stimulated the industry until possibly for the moment it has been overdone. As Samuel Johnson said, "Slowly rises worth by poverty depressed," and this has its application in a sense to the condition of northern orange lands in the multiplicity of offerings in the north and the inadequacy of sufficient capital.

Rocklin. J. Parker Whitney.

We have not encouraged this line of discussion because with our intelligent class of readers it is not necessary to make declarations about orange growing in central California. Intelligent people already know the facts whether they live at the north or south, and it is largely due to the knowledge of it at the south that much of the recent planting in central California has been made. A large share of the growers are experienced southern Californians who sold out below at a large profit and reinvested in the north. Mr. Whitney seems excited about it and so we give him a hearing—but really, it is not necessary to discuss it.—Ed.

Behavior of the Sugar Prune.

Mr. J. Luther Bowers of Monticello, Napa county, until recently a resident of Santa Clara county, makes this indictment of the Sugar prune: A few of the Sugar prune trees now in existence are eight years old, and from this beginning this variety has spread over the entire fruit-growing world. I have trees six years old that were grafted on almond and some 300 five years old and 475 three years old grafted on Tragedy prune. All these trees have made an immense growth. The last 475 were summer pruned the first year, or, in other words, had the top nipped off, out of each shoot in early June, 18 inches from the graft; still, at this writing, many of these grafts are stocky and well branched, and yet as much as 10 and 12 feet high.

Wood Very Tender.—Last year my six and five-year-old grafts bore an immense crop, and no matter how well propped the limbs would break. If a branch was tied in an upright position, all the small limbs on that branch would break off. If a large limb had a prop under it too near the body of the tree, that portion beyond the prop would snap off and if the prop was put too near the outer end of the limb the limb would break between the tree and the prop. The wood is entirely too tender for the immense crop it bears. It is too bad that such has been proven to be the case. The above is a very bad fault. Then, again, this overproduction causes the fruit to be small, being a possible 30–40 down to a 70–80.

Thinking that my own locality was the only one affected by this overproduction, I have written to different growers in other localities, and the answer has come back thus: "The wood will not hold the crop;" "they bear too full;" "they are too risky;" "they will have to be thinned." So I find that others are in the same boat with myself.

How to Remedy the Evil.—Now from practical experience I have found out that the Sugar prune wood should only be summer pruned and only cut while the shoots are tender, or so soft that the top can be pinched out; this will cause the top to be well branched and this should be done at least twice during the first year of the graft. This system will avoid long, slender limbs. After a graft is two years old I would never cut the top off of a limb. If a tree gets too thick a top, I would cut out some of the main branches and have the energy of sap drawn towards the trunk of the tree. We always get new wood whenever we cut a limb—that is nature. Unless the two bad faults named can be overcome I will have to discard the Sugar prune.

THE IRRIGATOR.

Artesian Water.

In many districts, particularly in some of the basins of the more arid portions of the West, there are possibilities for obtaining water by means of drilled wells. It is useless to hope for artesian water where the rocks are old, crystalline schists, granite or intrusive dike rocks, but in some regions where there are large accumulations of volcanic materials—tuffs, mud flows, etc., which occupy a basin or depression, there is sometimes the possibility of obtaining flowing water by boring. Unaltered sedimentary rocks—sandstones, shales, grits, etc.—offer the best opportunities for obtaining water by this comparatively inexpensive means, from great depth. The probability of obtaining water by boring should be looked into by a competent stratigraphical geologist before much money is expended in this direction, for many holes have been drilled through ignorance of the primary principles governing the obtaining of artesian water, where there was not the slightest hope of securing a flow. Pumping water may often be obtained in comparatively small amount by boring in crystalline rocks, but never a flow.

In a general way the geological conditions essential to the securing of artesian water are a stratum of comparatively open or porous rock, like sandstone, grit or conglomerate, in which there are abundant small open spaces which may be filled with water. This stratum must be overlaid by an impervious stratum like a close shale or bed of clay. The word impervious, as here used, is only a relative term, as no rock is absolutely impervious to water. What overlies the impervious stratum is immaterial. These strata should lie in a low monocline, or in a synclinal fold, the higher end or ends of the fold coming to the surface, in order that the rain waters may seep downward into the stratum. This stratum being penetrated by the borehole at a distance from the outcrop, the water, unable to rise through the overlying impervious layer, rises through the borehole. The accompanying illustrations show a variety of conditions under which wells bored for artesian water

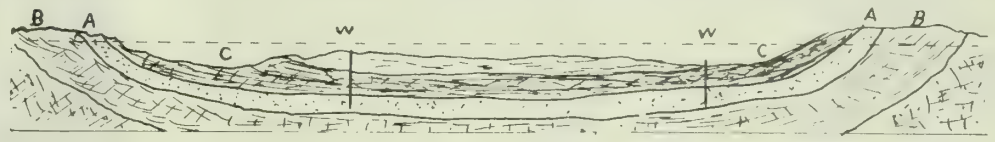


Fig. 1.

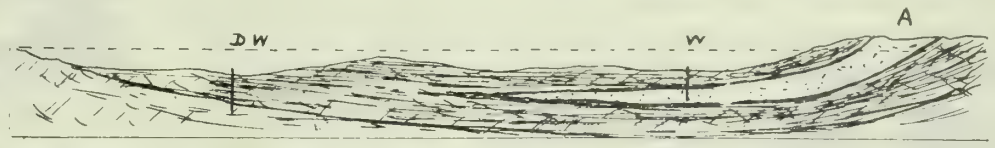


Fig. 2.



Fig. 3.

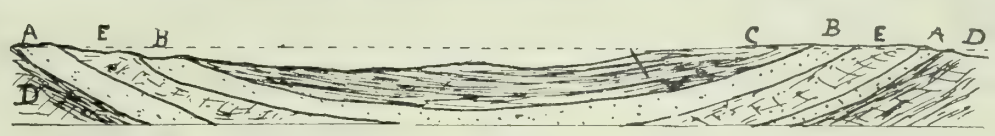


Fig. 4.

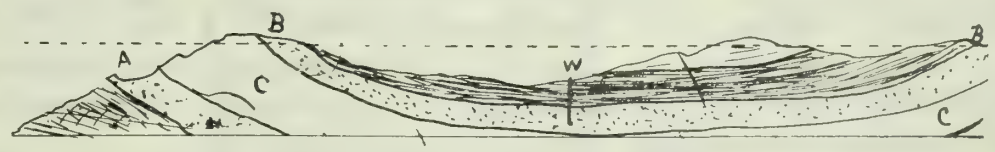


Fig. 5.

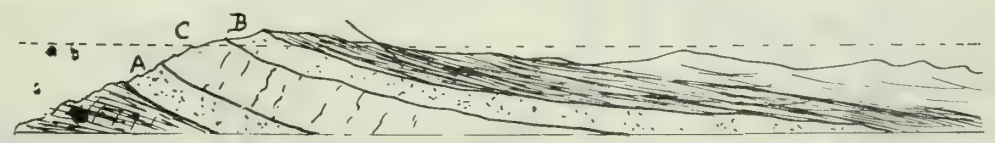


Fig. 6.

prove successful, or, for geological causes, fail of the purpose.

The following on the subject of artesian water, by I. C Russell of the United States Geological Survey, is of interest to all who are interested in this important subject:

As the water supply in an artesian basin may become of importance to a large number of citizens, it is obvious that laws governing its use are as necessary as the laws relating to surface waters, but, so far as known, only one attempt to place legal restrictions on the utilization, or rather on the waste, of subsurface waters have been made in this country, and that act fails in two particulars to meet the requirements outlined above—the proper casing of wells is not made obligatory, and the filling of abandoned wells is not provided for. Each of these regulations is highly important.

The principal restrictions and conditions which it is desirable should be established and enforced by law are as follows:

1. Every drill hole in an artesian basin should be properly cased. By this is meant that an iron casing or tube lining the hole and made sufficiently tight to prevent water from rising outside of it should be put in every well which remains open. The lower end of casing should be just above the water bearing stratum.

The reason why the owner of a well should be required by law to properly case it, as already explained in reference to the personal interest of the owner himself, is that lateral escape of the water may be prevented. The escape of water from an artesian basin in excess of the natural overflow means a decrease in pressure on the portions remaining, and consequently a lowering of the artesian head. In arid regions especially the sources of supply of an artesian basin may be small, and the question of economically using the water it contains and of maintaining the artesian head are matters of public concern.

2. Every artesian well when not in use should be securely closed. The reason why a law to this effect should be enacted and enforced is that an artesian basin is not an inexhaustible reservoir, and every practicable means should be employed for its conservation and legitimate use. The closing of an artesian well when its water is not being used would in many and perhaps most instances be an advantage to its owner as well as to his neighbors, not only for the reason that his water supply would be made more permanent, but because water flowing over land in excess of the amount required for scientific irrigation is injurious.

There are exceptional cases in which it is not desirable that an artesian well should be closed at any time, as, for example, when a well is no more than a developed spring, or derives its water from what is known as an artesian slope,[a] but as such wells will probably be few in number in the artesian basins, special legislation in reference to them is perhaps not desirable.

3. Every abandoned drill hole in an artesian basin should be completely filled with impervious material. A desirable way in which to do this is to fill the hole slowly with moist clay and ram it down with a heavy, blunt tool, or fill the hole with Portland cement concrete. Tightly fitting rods of dry wood driven into a drill hole until it is filled would serve the same purpose

Abandoned wells should be filled in the manner suggested in order that leakage may be prevented. Wells in which water rises some distance toward the surface, but does not overflow, are frequently abandoned, the casing, if any was used, having first been drawn, and in such instances a continuous escape of water occurs into cracks, porous beds, etc., about the hole.

The three rules briefly stated above should be embodied in the laws of every State in which artesian basins occur and their observance should be rigorously enforced.

For the proper development of an artesian basin it is evident that there should be but one center of responsibility. A desirable method of securing this end would be to place the entire control of the artesian wells in each State in the hands of a State engineer, whose duty it should be to determine where wells may be drilled, the depth to which they may be carried, and methods for caring for the water supply, closing abandoned drill holes, etc.

While, in the majority of cases, good results may reasonably be expected from the judicious development of the artesian basins, all the benefits that might be derived in that way will be rendered negative unless the suggestions given above in reference to the conservation of the water supply are strictly observed. I may perhaps add as a warning that the wanton destruction of the forests in this country and the now almost complete ruin of the public grazing lands throughout the arid regions leave but little hope that man's greed will be so far restricted in the case of artesian basins that ultimate failures will be avoided.

Fig. 1 shows an ideal section, illustrating the main requisite conditions of artesian wells. A is a porous stratum, B and C are impervious beds below and above A. F is the height of water level in the porous bed A. W—W are flowing artesian wells, springing from the water-filled stratum A.

Fig. 2 illustrates the thinning out of a porous, water bearing stratum between impervious strata. W is a flowing well having its source in A. D W is a dry well, which is sunk deeper than W, but for the reason indicated there is no flow.

Fig. 3 illustrates a porous stratum A changing to a dense, impervious one at B. W is a flowing well and D W is a dry well, there being little or no water in the stratum at B.

Fig. 4 shows the usual manner in which strata

reach the surface. A and B are porous beds; C and D are impervious beds, and E is a semi-porous bed between A and B. B at one end is lower than at the other, and also lower than A. Many variations are possible, depending upon the results of erosion of the upturned strata.

Fig. 5 illustrates the possible effect of erosion. A and B will result in producing flowing wells wherever penetrated by the well bore, providing the stratum C between them is not fissured and porous.

Fig. 6 shows how a condition similar to that in Fig. 5 may be disturbed by the shattering of the rock in the stratum C, resulting in the water contained in B flowing downward through the fissures in C into A, and thus draining B. A well sunk to B would under such conditions fail to flow, and if the bore were continued to A no flow would result above the outlet of the stratum at A.

In addition to these simple conditions are many others which may have a direct effect on the amount of water obtainable. When wells are sunk in porous water-bearing strata the surface exposure of these strata may be many miles distant. Often the water-bearing stratum contains minerals in solution, which render it unfit for use. The remedy, if there be one, is to bore deeper, though this is not always satisfactory.

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The best repair for your old wagon. Made to fit any axle. All sizes. Any width of tire. They earn their cost on any farm. Catalogue free.

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THE DAIRY.

Calf Rations and Milk Contamination.

The Nebraska Experiment Station has just issued Bulletin No. 87. The first part of the bulletin gives the results of an experiment in rearing calves on hand separator skim-milk and butter-fat substitutes. The foods used to replace the butter-fat were linseed-meal, corn-germ oil-meal and corn-oil.

Eight calves formed a group, and each of the three groups was fed on a ration similar to the rations of the other groups except in butter-fat substitute.

The calves were fed for six months and records kept of gain in weight, amount of food given and cost of ration.

The following table will show briefly the results of the test:

	Linseed-Meal.	Corn-germ Oil-Meal	Corn-Oil.
Average gain in weight during test, pounds....	229	237.37	224.12
Average cost per pound of gain	$ .046	$ .047	$ .059

The conclusions of the experiment were as follows:

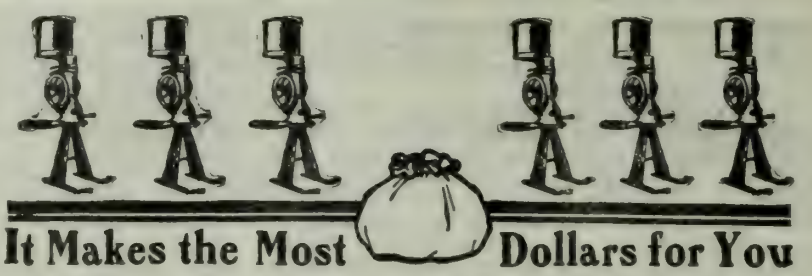
Linseed-meal is not only an excellent food for replacing butter fat in skim-milk for calf feeding, but also an economical food in comparison with others. Corn-germ oil meal gave about as good results as linseed meal and may be recommended as a calf food.

Corn-oil in this test proved too expensive and required too much work for profitable calf rearing. A 2% oil mixture proved rather laxative for obtaining the best results.

The calves fed linseed-meal and corn-germ oil-meal were in good condition at the end of the test and most of them were weaned.

Milk Contamination.—The second part of the bulletin deals with a test to determine the amount of contamination of milk that takes place during milking, and its control. The four methods tested were as follows: (1) Sponging the cow's udder before milking, (2) using a 5% solution of carbolic acid, (3) rub-

(Continued on Page 188.)



It Makes the Most Dollars for You

Those who have it wouldn't give it up.
Those who know of its merits want it.
Those who investigate it buy it.

We don't expect in this advertisement to prove to you that the Empire Cream Separator is the only separator a sensible dairy farmer would think of buying, but we **do** expect to convince the intelligent man who keeps milch cows that his own best interests will be served by investigating the merits of the

EASY RUNNING
EMPIRE CREAM SEPARATOR

You will find that it is unquestionably the simplest in construction of all separators. That means few parts—little friction—easy running—little wear—few repairs—little oil—no trouble—long life—bigger profits—more dollars for you.

The fact that the Empire is more carefully built than any other separator made; the fact that the Empire factory is one of the model manufacturing plants of the world, have much to do with the Empire's perfect construction, its easy running qualities and its long life.

The fact that the sales of the Empire during 1904 were 30 times as great as in 1900—the fact that no separator ever built has made such wonderful strides in the past four years as has the Empire, in sales and in popularity, **ought** to mean something to you.

At any rate, you'll admit that it's worth looking into. If you want the separator that's going to give **you** the best service, the only way to **know for sure** is to investigate.

Write to us today for our free dairy book.

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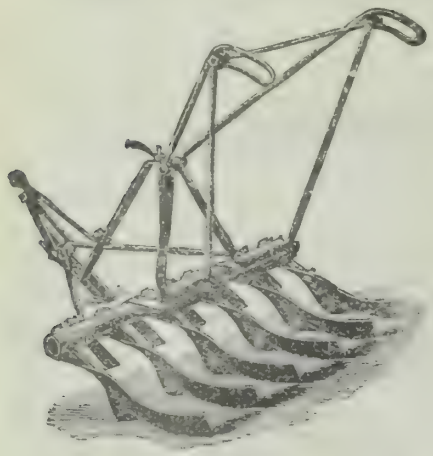
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Folding spring bunks and drop table. Comfortable quarters for two men.

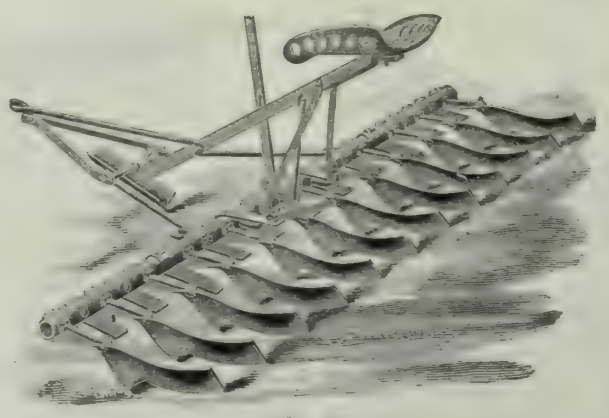
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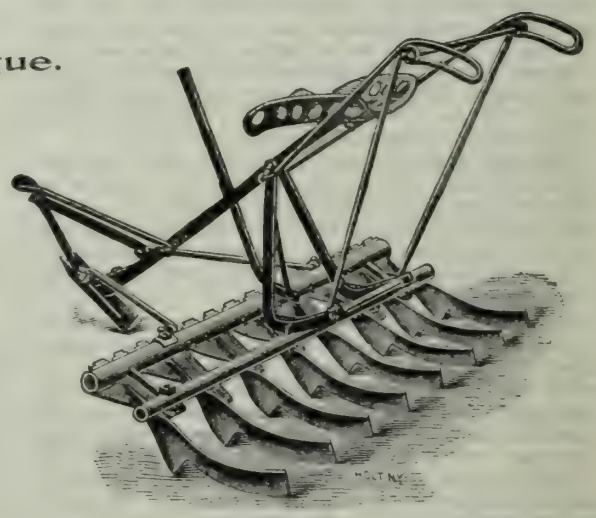
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Size G.



No. 23.

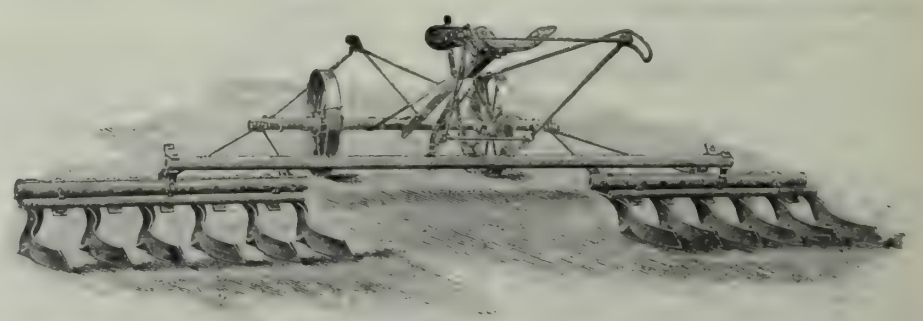


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A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*
Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Agricultural Review.

Fresno.

RAISIN GROWERS' ASSOCIATION.—Contrary to expectations, the Raisin Growers' Association is assured. At Thursday's meeting enough acreage was signed up to bring the total to 39,000 acres, or 4000 more than was required. The new company is a stock concern, one share to the acre, as advocated by M. Theo. Kearney. Unlike the old association, it is to do its own packing. With the acreage signed it is claimed that the market can be controlled.

Kern.

PEACHES THAT PAY.—Bakersfield Echo: According to J. B. Chamberlain of the Chamberlain Canning Co., there is a large and profitable field in Kern county for the culture of yellow cling peaches. Mr. Chamberlain said that the Tuscan cling, which ripens in early August, and the Phillips cling, which ripens in September, are among the favorites of the canning peaches, and an orchardist planting these could be assured of $20 per ton for his green fruit for an indefinite period of years. Around Fresno, Mr. Chamberlain says, the fruit growers are planting these varieties extensively, and he was told that the canners were making ten-year contracts for the fruit at $20 per ton. The Orange cling, Mr. Chamberlain says, is a good variety, with the exception that it has a bad habit of splitting its pits.

SHEEP SHEARING ON BIG SCALE.—Bakersfield Echo: Sheep shearing will begin on the Miller & Lux ranch at Button Willow in about three weeks. There will be about 30,000 head of sheep to shear and it will not be done by the old hand-process. They have on the road from the east fifty machine clippers similar to those used in clipping horses. The fifty machines will be installed in a large sheep shearing shop and run by a fifty horse power engine. By this plan it is not expected that each man who operates a clipper will remove any more fleece in a day than by the old process, but the clip will be more even and more wool will be obtained by this than the old one and there will be very few if any holes cut in the sheep's hide as is usual by the old process. The sheep will no doubt approve of the new plan. Miller & Lux are not trying a process wholly new in their experience. They have tried this process at Firebaugh and found it very satisfactory.

Kings.

GREAT WHEAT CROP PROMISED.—Hanford Journal: J. W. Barbour, who is a large land owner on Tulare lake and one of the largest grain growers, states that the 6000 acres seeded to grain on the lake will yield 75,000 sacks, and the cereals produced will bring to the producers $1,250,000. This is estimating a yield of 12½ sacks to the acre, which is very low, or at least conservative. A large part of this $1,250,000 will go out for labor, machinery, etc.

TO PLANT PEACHES.—Hanford Sentinel, March 16: A contract was filed with the County Recorder this morning wherein Douglas & Thorne have agreed with the California Fruit Canners' Association to plant ten acres on Section 34-18-21 to cling peaches. There are to be 450 trees of Tuscan clings and 450 trees of Phillips clings, and they are to receive for the fruit respectively $22.50 and $25 a ton.

NO BLIGHT YET.—Hanford Sentinel: At the Downing pear orchard peaches are now being sprayed for the curl leaf. Spraying on the pear trees was discontinued on account of the advanced condition of the blooms, but it will be taken up as soon as the blooms fall. No blight has as yet been found and the prospects are the best for the past seven years.

Mendocino.

A LARGER SPUD.—Ukiah Republican-Press: In a recent number of the Press there was a slip that said that J. J. Smalley of Philo raised a spud weighing 3½ pounds. S. A. Price of the same town, in digging his spuds, found several weighing 3¾ to 4 pounds, and he even found one that weighed 5¾ pounds.

San Benito.

WEIGHING BEETS.—Hollister Free Lance: The Spreckels Company has decided to reopen their scales at Betabel and to employ a weigher during the beet season. This will be good news for the beet growers of the San Juan valley. The practice in vogue for the past few years has been very unsatisfactory. The absence of a weigher made it necessary that each grower load his beets on a separate car. Usually there was a shortage of cars, causing a constant scramble, growers frequently going to the station at midnight, to be on the ground when the cars were switched in. As a week or more frequently elapsed before the car could be loaded and delivered at the factory, a considerable loss in shrinkage resulted. The grower was placed at the additional disadvantage of not knowing how much he was docked for dirt, etc., until the company made a settlement. Now that the company has recognized the rights of the growers, an increased acreage will probably be sown to beets.

San Joaquin.

WANTS HUNTERS TO SHOOT SQUIRRELS.—Record: C. A. Beecher, who owns a large farm on the Copperopolis road, has made an offer to hunters, that in this day of "No Shooting" signs, is something novel. Mr. Beecher's farm is overrun with ground squirrels. He has tried poison and smoke machines, but all to no avail. Now he offers a bounty of 5 cents per squirrel to all hunters, with the additional offer that for all squirrels over twenty-five that any one hunter kills in one day Mr. Beecher will pay a premium of 2 cents per squirrel.

Santa Clara.

PREPARING FOR CHERRY CROP.—Sunnyvale Standard: An important deal was consummated Monday whereby the Los Gatos Canneries leased the large warehouse of the Sunnyvale Co-operative Fruit Co., and will at once put things in shape for the handling of this season's cherry crop.

ANNUAL BLOSSOM DAY FESTIVAL AT SARATOGA.—The annual Blossom Day Festival at Saratoga, on Saturday, March 18, was not largely attended, owing to the threatening weather, but those who braved the elements were rewarded with a fine view of the Santa Clara valley in full blossom. The visitors, many of whom were from San Francisco and Oakland, were taken for a drive through the foothill orchards, where the road commanded a beautiful outlook. In the afternoon the customary exercises were held at Saratoga.

Sonoma.

HENS LAID 2700 EGGS IN ONE DAY.—Santa Rosa Press-Democrat: On Thursday Byron Purvine of Two Rock Valley gathered 2700 eggs from his poultry ranch in one day, and states there will be better days yet this season. At one time Mr. Purvine took 6000 chicks from his incubators.

SHIPPED EGGS TO NEVADA.—The Santa Rosa Poultry Association shipped fifty cases of eggs to Reno, Nevada, Wednesday. Last week the association shipped 360 cases of eggs, nearly all of which went to Nevada and Arizona. This represents 11,520 dozen eggs for the week.

BIG YIELD OF POTATOES.—Press-Democrat: Porter Osborn of Green Valley claims the world's record for the quantity of potatoes raised from one pound of seed. Last spring he secured a pound of potatoes of the "Delaware" variety from the East. He cut each eye and planted it separately about the middle of May. The potato was recommended as a fine producer, but not particularly early. Every eye sprouted and by the middle of August the crop was ready to harvest. The yield weighed just 104 pounds, all nice shaped, clean potatoes. One weighed 3¼ pounds. In shape the potatoes are somewhat like the Peerless. It cooks nicely. Mr. Osborn will replant all the potatoes this spring, except a few he cooked as samples and gave to friends. As far as known, ninety pounds is said to be the largest yield heretofore secured from one pound of seed.

SANTA ROSA STOCK FARM.—Press-Democrat: Owing to ill-health, Ira Pierce, owner of the Santa Rosa Stock Farm, has decided to relinquish the care attendant upon that large concern and Mr. F. S. Turner, who for over thirteen years has been the efficient superintendent and has directed all the business connected with the farm, has leased the stock farm, the race track, buildings, etc., and in addition has purchased all the live stock on the place. For the latter the consideration is said to have been $10,000. Mr. Turner's lease dates from April 1, 1905. No stock farm in the world is better known than the Santa Rosa Stock Farm on account of the fact that it was the birthplace of Lou Dillon, the champion trotter of the world, the home of her sire, Sidney Dillon, as well as other noted animals.

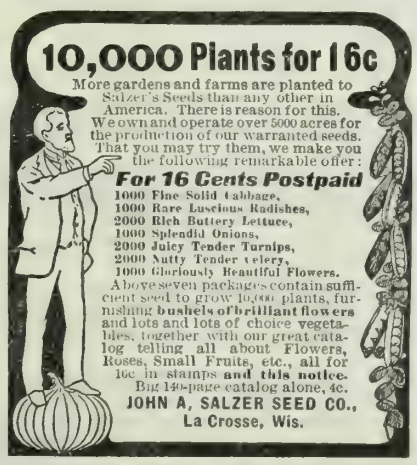
Tehama.

MUTTON SHEEP SHIPPED NORTH.—Red Bluff News: There is a good market in Tehama county at present for mutton sheep, and such as have been sold have brought good prices. The demand is said to be greater than the supply and many have shipped north to Portland, Seattle and Tacoma, in which cities there is a scarcity of this meat. Grant B. Wilcox of this city recently sold nearly 800 mutton sheep with a year's fleece to J. G. Johnson, the sheep buyer. This was the last of three lots aggregating nearly 3000 head which were shipped to San Francisco.

WOOL MEN MAY AGREE ON MARKET DAY.—Red Bluff News: Opinion among sheepmen seems to be about evenly divided as to the advantages and disadvantages of having a market day for the sale of the spring and fall clips of wool, and while the plan is conceded to have many merits which appeal strongly to the growers, still it is claimed that there also may be demerits which would work against their best interests. This year the small clips are apparently being contracted for ahead of the larger yields, and it is estimated that already fully 500 have been bought at a price which is generally agreed to be 20 cents. The year's fleeces from the sheep of S. D. and Grant B. Wilcox were purchased at a price said to have been 18 cents a pound.

Tulare.

OF INTEREST TO DAIRYMEN.—Dinuba Alta Advocate: Some dairymen about here are using a novel preventive of bloat in cattle, so common at this season of the year. It is a smooth bit fastened to a halter on each head of the herd. The bit in the mouth bothers the cattle at first, but they soon become used to it and it is said that no kind of green feed will bloat the cattle so long as they wear the bit.

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1000 Fine Solid Cabbage,
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The Home Circle.

Storm.

I love the dark and stormy day—
The lashing bough, the broken spray,
The swirling and incessant rain,
The pearled and dripping window-pane,
The clouds so dense that one may know
For hours and hours it shall be so.

Click, click upon the shining street
Go scurrying horses' nimble feet,
A lone pedestrian slantwise bent
Against the drenching element.
No bird or fowl in tree or sky,
Torn leaves in tumult drifting by,
And rolling with a muffled swell
A slowly tolling funeral bell.

Where now the throngs on pleasure bent,
The eager step, the pressed intent?
They must await the sunlight ray;
Storm has no path for such as they.
And fancy now her wand may wave;
I see the rivulet round the grave.
And with the twilight comes to view
Night closing in on Waterloo.

—John H. Boner in Century.

Miss Letitia's Way.

"I would like to know to whom Miss Letitia will give that beautiful pinkish mauve crepe de chine," mused Betty Cleaveland. She was still called Betty by most people who knew her, and secretly she liked the abbreviation better than the real name of Elizabeth.

"Last year she gave Molly a beautiful church and street tailored dress, and this year she has ordered from — that perfectly exquisite visiting and reception dress, and one of us will get it, but which one? Miss Letitia's an old dear, and she says it is her way of indulging her love for pretty things her taste tells her are too juvenile for her, though she's handsome enough to wear anything. I hope I will be the fortunate one this year." Betty dimpled and blushed. "I do hope so," naively. "I had as well ask daddy for the moon as for a hand embroidered crepe, trimmed with flounces of the finest point lace, and hat, gloves, stockings and slippers to match, and lingerie, hand made, a princess might be glad to wear. I do want that dress dreadfully, but I will try"— more slowly — "to rejoice for the one that gets it. Tracy loves that color — one never does know what decides Miss Letitia in favor of the girl she is playing fairy godmother to — I do hope it will be me."

Betty is a dainty southern maiden of the thoroughbred type, colored like a moss rose, and distracting enough to reduce a dozen swains to despair. She, with a half a dozen other girls, met at Miss Letitia's once a week, to take lessons in fine sewing from that handsome spinster.

In her trim walking skirt and pink shirt waist of soft tucked china silk, Betty looked most captivating, and so Tracy Dunlop told her as they walked toward Miss Letitia's handsome home.

"We will never have another misunderstanding, Tracy," Betty assured him for the hundredth time, and, while Tracy might be skeptical, he knew his lady too well to express doubt so soon after being restored to favor.

"I hope not, Betty; I think Miss Letitia might let a fellow come and see your charmed circle. I say, isn't she handsome for an old girl?"

"You musn't speak so of her, Tracy; she is our godmother, you know. Did you know I am making Dittie's boy his first short clothes? You should see him, he's such a fine fellow."

"I think Miss Letitia's a brick. Must you go in? Can't I go to the door with you?" he entreated, as they paused at the gate.

"No," said Betty, obdurately.

"Then wait a moment — you do care for me a little, don't you, sweetheart?"

"Yes, when you are a good boy," and with that shaft she sped up the walk to join Miss Letitia and her flock, already assembled in the spacious, airy sitting room.

Miss Letitia Houghton was a handsome, well preserved woman of 55 or 56, with a fine figure, and a splendid head of silvery hair, very becoming to her rosy cheeks and bright eyes. Everything about her was sumptuous; her dress of violet velvet and point lace made her look like a chatelaine of an ancient castle, surrounded by her maidens. The resemblance was further enhanced by the carved chair in which she sat enthroned, as it were.

By what means Miss Letitia would arrive at her decision regarding the dress, none knew; what it was they did, or left undone, or what they did to commend themselves to her, they never knew. She did not decide by their skill at needlework, or by their prompt attendance, so they were totally in the dark.

"Laggard Betty," exclaimed Miss Letitia, playfully, enjoying, as she always did, the girl's fresh bloom. "Luncheon will be ready in half an hour or so; make up for lost time; Betty, those hand run tucks, feather stitched, are beautifully done."

"You see, Tracy tagged along, and when he's with you the distance is much farther; you get to chatting, you know."

"Yes, my dear, I know; I have been young."

"When I am coming to these highly prized lessons, my feet are winged," murmured the correct Myra.

"Yes," observed Miss Letitia, with a quick glance from her gold rimmed glasses at the quiet figure; "you were never five minutes late at an appointment in your life, Myra."

Her white, jeweled hand rested lightly on Betty's curly, dark brown head. Encouraged by what she thought was high praise, the correct Myra proceeded to give her friends a highly moral lesson:

"Jane, I was so sorry to hear what I heard today."

"I do not know what you mean," replied Jane.

"Why, that your brother—you know people talk so much — I heard he had been wild at college and your father had sent for him to come home."

"Brother has been studying too hard, and papa took him from college," said Jane Pegram.

"Really?" incredulously; then the story of high playing wasn't true! Lucia, I hope your father wasn't very angry at your being out driving so late last night."

"A shaft broke and detained us, but I had been home an hour when you drove by with Luther Awkwright."

There was general laughter at this thrust and the correct Myra was covered with confusion a moment; then she said:

"Mr. Awkwright took me to see one of my poor girls, who wasn't well."

"Luther Awkwright paying visits of that kind!" ejaculated Deborah; none believed Myra.

"Judge not — we know the rest. Betty, why did Tracy leave his place so suddenly? Is it true he was dismissed?"

The face of every girl was flaming, and Miss Letitia spoke with authority.

"Children, do not recriminate, let your needles fly, but don't handle any other sharp things. Myra, learn charity before you preach it. Betty, trust that Tracy has a good reason for giving up his place."

"I do, Miss Letitia."

"We will go to luncheon. Put up your work."

A week later a vision in pinkish mauve and lace danced into the Cleaveland drawing room, and as Tracy caught the girlish form in his arms, Betty exclaimed breathlessly:

"I got it, you see, the dress I told you about, Tracy," earnestly. "I'm so glad you've a place on Mr. Browning's editorial staff."

"Yes, dearest, that is vindication enough; from my late employer I have a written statement that my discharge was for nothing derogatory."

"I was sure of that. Isn't my dress lovely? Look at it, sir, and not at me."

"It's beautiful, but not half so beautiful as its wearer."

Miss Letitia sent each girl a handsome consolation present; to Myra she sent a handsomely bound copy of "The School for Scandal," enclosed in a large box.

"She'll make the application, or she's not as quick as I thought her; girlish follies I can condone, but prudery and spite in a girl of 22 I have no patience with. Here comes Betty in her crepe, with that fine fellow, Tracy. Ah, well, who can say an old maid is lonely when she has young friends to mother and give a dot to on their marriage? Come in to your godmother, children."—Olive Winston Gage.

A Dry Shampoo.

"I've got to shampoo my hair, and, oh how I dread the cold that is certain to follow!" sighed the delicate girl.

"Do you dry it carefully?"

"Always, but it makes no difference. I never wash my hair without suffering from cold and neuralgia."

"Well, then, why don't you try a dry shampoo?"

"No water?"

"Not a drop. Have several clean brushes, an old silk handkerchief and some good bay rum. Part the hair through the middle, and again across behind the ears. Brush gently in long, even strokes, but firmly enough to reach the scalp and remove all dust and dandruff; then separate the hair in small strands, shaking each well to dislodge any remaining particles of dust. Brush again, using another clean brush, and finish by wiping each strand with a clean, soft handkerchief. You will be delighted to see how bright the hair is. Apply bay rum to the scalp with a sponge and rub it in well with the finger tips. Bay rum is a valuable tonic as well as an aid in keeping the hair soft and dry. A better preparation even than bay rum is the prepared bay rum and quinine which any druggist can put up for you."

"It sounds awfully comfortable," said the delicate girl. "I'll give it a trial anyhow."

Turkey Farmer's Secrets.

The turkey farmer pointed to a small mill wherein a petroleum engine chug-chugged vigorously:

"In that mill," he said, "the feed for my two thousand turkeys is ground. The whole secret of successful turkey raising lies in abundant feeding. It keeps six men busy to feed my birds.

"They are fed five times a day and each turkey gets as much as he can hold. Carrots boiled in lard and crushed barley and milk are very good fatteners, and the birds stuff themselves with them. Then, the last thing before going to roost, they eat all the oatmeal porridge and buttermilk they can find room for.

"Cocks cost more than hens on the market, because they are harder to raise. If they get together they fight and kill one another, and they eat, furthermore, five times as much as hens.

"A cock three hours before killing is made to swallow a half pint of vinegar. This vinegar makes his flesh fine and tender; without it he would be coarse and tough.

"A turkey farm like mine pays easily from $1500 to $2500 a year."

Measuring With the Eye.

While I was in a clothing store the other day I noticed a man wad his fist up and throw it down on the counter, and about the same time the fellow behind the counter rushed up to him, carefully rolled his fingers up into the palm of his hand, clinched his fist, and threw it down beside the other man's fist on the counter.

That was a way the clerk had of measuring the customer's hand for a fit in gloves. "But how can you measure a big fist with a small one?" I asked him after the man had secured his gloves and departed. "I know my number," he said, "and I can generally tell, almost to the dot, the difference between the size of glove I wear and the size that will fit some other man. My eye is so trained that I rarely miss it."

He was right and proved it by calling the number of glove which fit my hand by a hurried glance at the hand, folded up, and put beside his on the counter.

"You see," he added, "it is largely a matter of practice, and really nothing extraordinary about it. Some men, particularly military men, become experts in measuring distance with the eye. Other men are expert in telling the weight of certain articles. The expert shoe dealer could look at a foot and tell the number of shoe that will fit the foot. So clothiers can guess a man's waist and leg measurement by a mere glance, if they really know their business. The eye, in the long run, is more accurate than the tape we use, in measuring, because the eye will take a more general view of the hand, the foot or the body, while the tape simply gives us the inches one way and another."—New Orleans Times-Democrat.

Hints to Housekeepers.

Stains on black cloth can be removed by rubbing with a freshly cut raw potato. Afterwards rub with a clean cloth.

The fire can be drawn from a burn by applying cloths wet in strong alum water. It will also assist in relieving the pain.

Oxalic acid will remove stains from ivory, say, piano keys. Ordinarily the keys may be kept in condition of whiteness by simply rubbing with alcohol. This means spirits, not wood alcohol.

Bananas are very good with beefsteak. While the steak is on the broiler slice two bananas in rounds about half an inch thick. Fry them in a little butter, and arrange over the beefsteak on a hot platter.

Mildew is one of the most difficult stains to remove. Rub well with brown soap, then apply a paste of chalk and water, and put the article in the sun. After two or three applications the mildew will be bleached out.

To keep moths from furs and woolen articles: When putting away furs and woolen articles for the summer, carefully wrap each article separately in newspaper, and put pieces of carbon away with them in tin box or cupboard. Printer's ink is death to moths.

"Just a Little Cold"
does not grow into a racking, stubborn, all-winter cough if you take
Allen's Lung Balsam
Depend on it always to cure even the most deep-seated coughs and colds.
Large, Medium and Small Bottles.

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Sold in boxes only. Avoid imitations.
Fac-Simile Signature of John I. Brown & Son on every box

Domestic Hints.

Grandmother's Seed Cakes.—Cream half a cup of butter (rather scant) and two cups of sugar. Add four tablespoonfuls of sweet milk and a little lemon or vanilla extract, and one good tablespoonful of caraway seeds. Sift in flour enough to make a stiff dough that can be easily rolled out, adding to each cup of flour one teaspoonful of baking powder. This rule will take about two cups of flour.

Chateaubriand of Beef.—Take the undercut of a large sirloin of beef or the whole fillet if for a large party; cut the best part into two inch thick steaks, slightly flatten them with a cutlet bar, trim off all skin and fat, let them lie for a short time in sweet oil, season with pepper, and broil over a clear fire. When both sides are nicely browned sprinkle the steaks with salt, and finish cooking more slowly. They should, however, be sightly underdone, and care must be taken in turning them with tongs that the meat be not pierced or the juices will escape. Mix together on a plate a small pat of fresh butter with finely chopped parsley, pepper, salt and lemon juice, put a bit on each steak, pour a little rich sauce round, and garnish the dish with fried potato straws. Serve very hot.

To Dress and Cook Rabbits.—First twist head off and cut legs off; then with sharp blade of pocket knife cut crosswise of back, just through the skin, midway between the shoulders and hips. Pull the skin off either way. When nicely nude, singe. Then with keen-edge blade, holding rabbit in left hand (if you are right handed), cut carefully through the outer coverings from breast bone to lower extremities. Take out the entrails cautiously, without cutting or tearing them. Then make clean with pure water. Cut up into pieces and place in vessel of clean water to soak over night. In the morning make your skillet quite hot, having put into it a lump of butter the size of an egg and twice the quantity of lard. Roll the pieces of rabbit in flour, place in skillet nicely and stew and fry for at least a half hour or forty minutes. Salt and pepper to suit the taste. This is a fine dish for the weary and hungry. Try it. Or when it is nearly done take out a few pieces and place in your wire broiler and place in on the coals of a wood or cob fire for about one or two minutes. This is grand.

Turkey and Chicken Dishes.—A mince of turkey served on dainty squares of toast is good for one meat. This is one housewife's way of preparing it. To one cupful of minced meat add half a cupful of milk, two tablespoonfuls of butter or drippings, one slice of a small onion, minced fine, salt and pepper to taste, with a trifle of powdered mace. Stir well while it is stewing, and serve on squares of toast, with a garnish of parsley. Cold chicken can be prepared in this way, leaving out the onion. A mince of chicken is nice served with green peas in a cream sauce. Make a generous quantity of cream sauce, using plenty of good butter. Cut the chicken in small bits, or hash it, adding about a cupful of chicken to every cupful and a half or two cupfuls of cream sauce. Add also a cupful of canned peas at the last moment. When it comes again to the boiling point, pour it over thin, delicate slices of toast. Cold turkey can be prepared in the same way. A cold boiled chicken left over after making bouillon or chicken soup can be utilized in a number of ways. Remember that all the goodness was not taken out when the fowl was used for making stock. It is still nutritious, and should not be scorned. The cold chicken may be breaded and fried. It can also be used as a potpie. Of course, the meat will not have to simmer a long time, as raw chicken would, but should boil only ten or fifteen minutes under the biscuit dough.

Why Canned Meats Poison.

When people are poisoned by eating canned meats, it is not because there was poison in the meat before the can was opened, but because the meat had been allowed to develop the ptomaine poison of putrefaction after the can was opened. It was not canned salmon the other day that poisoned a family that ate it with impunity the first day after it was opened, but it was salmon that was spoiled by forty-eight hours' exposure to the hot and humid atmosphere. It is very rare that any person is made sick by metallic salts in canned foods. The only metal that may cause poisoning in the case of these foods is lead, and this is as unlikely as the falling of a meteor on your head. It is not supposable that lead is present in the coating of the tin plate, its use for this purpose being illegal and productive of insignificant saving. It is possible that poisoning may occur from the solder, but it is highly improbable from the way that cans are made.

HEAD BACK LEGS **ACHE**

Ache all over. Throat sore, Eyes and Nose running, slight cough with chills; this is La Grippe.

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taken in hot water, sweetened, before going to bed, will break it up if taken in time.

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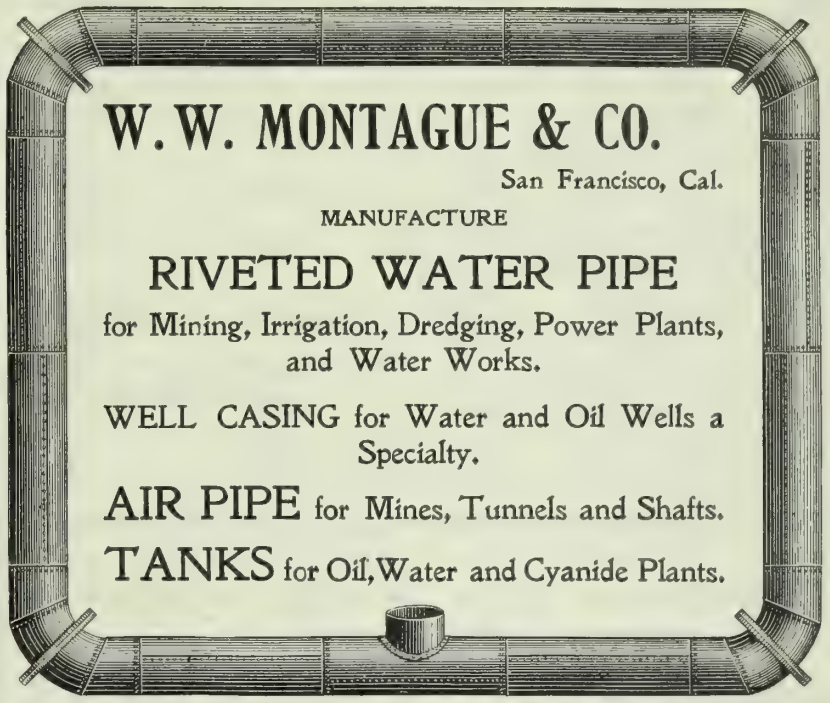
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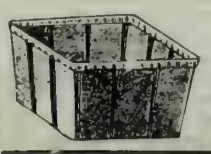
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The Markets.

San Francisco Produce Report.

San Francisco, March 22 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 13⅝@1 12½	93¼@ 91⅝
Thursday	1 12 @1 13½	91¼@ 92½
Friday	1 13½@1 14¼	92 @ 92
Saturday	1 14¼@1 15⅜	92 @ 93⅛
Monday	1 14⅜@1 15½	93⅛@ 92⅝
Tuesday	1 14¾@1 15¾	92⅝@ 93⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	50 @49¼	49⅞@49¼
Thursday	49⅝@49⅝	49⅝@49½
Friday	49 @49⅜	49⅛@49½
Saturday	48¾@49⅜	49 @49¾
Monday	49 @49⅜	49 @49⅜
Tuesday	49 @48⅞	49½@49⅛

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 45 @1 45½	$1 27⅜@1 27⅝
Friday	1 46¾@1 46½	1 28¼@1 28¾
Saturday	——@——	1 28⅜@1 28⅛
Monday	——@——	1 28¼@1 28½
Tuesday	1 46 @——	1 28¼@1 28¼
Wednesday	1 45½@1 45	1 28¼@1 28

Wheat.

Owing to the exceedingly light stocks of wheat in this center and throughout the State, there is little opportunity for business in this cereal. Values for spot wheat continue to be maintained at much the same quotable range as for weeks past, with market moderately firm for ordinary grades and decidedly strong for strictly choice to fancy milling wheat, the latter being most sought after and most difficult to obtain. Eastern and foreign markets have developed no radical changes the current week. European prices were slightly higher. Chicago was higher for May deliveries, but lower for July wheat. In the local market there was little May wheat offering and the few sales recorded were at advanced figures, $1.46¾ being realized, against sales as low as $1.43¾ the preceding week. The speculative market for Dec. wheat has kept close to $1.28 per cental, while a year ago same option was averaging about $1.35, with May and spot wheat both lower then than to-day, May being about $1.40, and in the spot market $1.50@1.55 being the quoted range on good to choice milling.

California Milling	$1 55 @1 62½
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.46¾@1.45.
December, 1905, delivery, $1 28¾@1.27¾.

Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.44½@1.45; December, 1905, $1.28¼@1.28.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7sld@-s-d	-s-d@-s-d
Freight rates	14½@16s	12½@-s
Local market	$1 37½@1 40	$1 42½@1 47½

Flour.

Current values on desirable qualities are being well maintained, but trade is not active. Owing to rather light stocks and little or no disposition to grant concessions to buyers, the export business is for the time being of comparatively small proportions. The last steamer for China and Japan took only 1,532 barrels.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

The spot market continues unfavorable to buyers, with light offerings of barley of every description. Inquiry is most active for good to choice feed, which is selling close to figures quotable for No. 1 brewing. The steamer Stanley Dollar cleared Saturday for Kobe, Japan, taking as principal cargo 59,998 centals barley, valued at $72,000. This clearance leaves the port without a ship under charter for grain loading. The supply of disengaged tonnage now in harbor is not large, but there are plenty of ships headed this way and there will be no scarcity of vessels when new crop barley comes upon the market. The speculative market for Dec. barley has been slightly lower, in consequence of the recent liberal rains and the present good outlook for coming crop.

Feed, No. 1 to choice	$1 22½@1 25
Feed, fair to good	1 20 @1 22½
Brewing, No. 1 to choice	1 25 @1 30
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

Offerings of this cereal are mainly common feed qualities, values for which are fairly steady in the absence of any special selling pressure, but there is no active inquiry at full current figures. Strictly choice to fancy oats are in very light supply, and in a limited way are commanding decidedly stiff prices.

White oats, fancy feed	$1 52½@1 57½
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 60
Black oats	1 35 @1 70
Red, fair to choice	1 35 @1 60

Corn.

Market for both Eastern and domestic of desirable quality has been ruling against buyers, with receipts light, not much here, and on offerings to arrive stiffer prices are being asked than lately current. Demand is fair, both for shipment and on local account.

Large White, good to choice	$1 37½@1 42½
Large Yellow	1 37½@1 42½
Small Yellow	1 80 @1 90
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 37½@1 42½

Rye.

Not much arriving and only light quantities in store here.

Good to choice	$1 52½@1 60

Buckwheat.

Spot stocks are almost wholly in the hands of millers. Nothing doing in a wholesale way.

Good to choice	$1 75 @2 00

Beans.

Business is not of heavy volume, but is of fair proportions, considering the comparatively light stocks and the generally stiff figures asked for desirable qualities. There have been few changes in quotable values the past week. Tendency on Limas has been to slightly easier prices and on white beans to more firmness.

Pea, fair to good, 100 lbs	$3 00 @3 25
Small White, good to choice	3 25 @3 50
Large White	2 75 @3 00
Pinks	3 25 @3 75
Bayos, good to choice	3 00 @3 25
Red Kidneys	4 50 @——
Reds	5 50 @——
Limas, good to choice	5 00 @5 15
Black-eye Beans	2 65 @2 90

Dried Peas.

Market is dull for off qualities of Green and Niles. There are no choice domestic offering of any variety. The last reported sale of choice domestic Green was at $2.25, and of choice Niles at $1.92½. Prime Eastern Green have been laid down by millers at $2.02½.

Green Peas, California	1 40 @2 05
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 40 @2 00

Hops.

Reports from interested parties as to the condition of the market vary widely, the bull interest claiming that much higher prices will rule before the season closes, while the bears quote the market dull and weak, present nominal quotations being difficult to realize and see nothing to warrant anticipating the development of strength in the near future. There are no heavy stocks of hops, and free buying would speedily develop a firm tone, but it is doubtful if prices could be crowded to the high figures some predict, except through purchasing of outside speculators. An increased acreage is reported of 441 acres in Sacramento county, 285 in Yolo, 705 in Yuba, and 600 in Sonoma, making the present acreage in these four counties 7,287 acres. Contracts for next Fall delivery are reported at 18c. The New York Producers' Price Current says: "From New York State we hear that an exporter is asking for samples to send to Europe. Whether this will eventually lead to business remains to be seen; but at any rate this has served to induce farmers to become firmer in their views and they have advanced their asking price to 27c. for choice goods. We learn of some sales by speculators in Oregon at 24c.—say about 600 bales—but the growers are unchanged in their views and remain firm holders. Regarding the Oregon roots, we hear that the same in general have wintered very well. Contracting at present for 1905 growth seems to be at a standstill, as growers and dealers are apart in their views. From Germany reports indicate a slight improvement in their market, owing to a demand from England. The English market is unchanged. On the local market there have been no transactions and prices remain unchanged."

California, good to choice, 1904 crop	24 @27

Wool.

Some Spring wool is coming forward from the Southern portion of the State, and free arrivals are looked for the coming month. The recent wet weather has interfered with shearing. Dealers are endeavoring to get hold of the clip by buying and contracting in the interior, and are giving no information as to prices. Present quotations are necessarily largely nominal, but are decidedly conservative, according to sales known to have been lately made. Values will be more definitely established in about thirty days. In the meantime growers will do well not to accept other than decidedly better prices than prevailed last Spring. In Arizona buyers are paying 18@20c., as against 13½@16⅝c. a year ago.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	20 @23
Middle County, defective	17 @19
San Joaquin and Southern, free	15 @17
San Joaquin and Southern, defective	13 @14
Southern lambs, as to quality	13 @16
Oregon, good to choice	20 @23
Nevada	16 @22

Hay and Straw.

Demand for hay is slow, is mainly for the best qualities of stable hay and these are going at low prices. Owing to the abundance of green feed, there is scarcely any inquiry for Alfalfa and considerable of the same on market. Straw is moving in a limited way at qnotably unchanged values.

Wheat, good to choice	$11 00 @ 13 00
Wheat and Oat	9 00 @ 11 50
Tame Oat, fair to choice	8 00 @ 10 50
Wild Oat	7 00 @ 9 00
Barley	8 00 @ 10 00
Alfalfa	7 00 @ 10 00
Clover	6 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 13 00
Straw, ₱ bale	25 @ 50

Millstuffs.

Not much doing in Bran or Middlings; stocks are mostly in few hands and are being held about as last quoted. Market for Rolled Barley and Milled Corn is firm at prevailing rates.

Alfalfa Meal, ₱ ton	$21 00 @ 22 50
Bran, ₱ ton	20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	25 50 @ 26 50
Cornmeal	30 00 @ 30 50
Cracked Corn	30 50 @ 31 00
Oilcake Meal	32 50 @ 34 00

Seeds

Trade in the several kinds quoted herewith is light. Quotations are based mainly on prices asked by jobbers. Trieste Mustard is practically out of stock. Yellow Mustard is in moderate supply. Alfalfa now on the local market is principally Utah product, although there is considerable California offering, and little demand.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6¼@ 6½
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Inquiry is not brisk and market is easy in tone, especially for other than most select water white. Spot supplies are not heavy, but there is a general desire to effect a clean-up of holdings in the next sixty days, as by the end of that time new crop honey is likely to begin to put in an appearance.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Stocks are small, demand is fair and current values are being well maintained.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Beef is in good supply, the quality averaging high; prices are barely steady. Veal is arriving in considerable quantity and for other than strictly choice the market is weak. Prevailing values on Mutton are being well maintained, there being no excess of offerings. Spring Lamb is now in moderate supply. Receipts of Hogs are not large and prices remain quotably about the same as for several weeks past.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½@ 6
Beef, 2nd quality	5 @—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6@7c; wethers	7 @ 7½
Hogs, hard grain, 130 to 200 lbs	5¾@—
Hogs, large, hard, over 200 pounds	5½@ 5¾
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	6 @ 8
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8½@—
Lamb, spring, ₱ lb	11 @—

Hides, Skins and Tallow.

Hides in prime condition are meeting with prompt sale at full current values. Pelt market is firm at the quotations. Tallow is in fair request at quotably unchanged prices; considerable quantities are going outward.

Bags and Bagging.

Grain Bags are being steadily held, and although the movement at present is llght, a better demand than for several seasons is expected the coming Summer.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6 @6⅛
Grain Bags, Calcutta, buyer June-July	6½@6¼
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

Good to choice poultry was not in heavy receipt, either domestic or Eastern, and was readily placed. For desirable young stock the market was especially favorable to the selling interest, some extra large and fine fowls commanding an advance on quotations. Ducks and Geese were in particularly light supply and choice were eagerly sought after. Young Pigeons in prime condition brought good prices.

Turkeys, Dressed, choice, ₱ lb	$ 20 @ 23
Turkeys, live gobblers, ₱ lb	18 @ 20
Turkeys, live hens ₱ lb	18 @ 20
Hens, California, ₱ dozen	5 00 @ 6 00
Hens, large	6 50 @ 7 00
Roosters, old	4 50 @ 5 50
Roosters, young (full-grown)	7 00 @ 7 50
Fryers	6 00 @ 6 50
Broilers, large	4 50 @ 5 00
Broilers, small to medium	3 00 @ 3 50
Ducks, old, ₱ dozen	6 00 @ 7 00
Ducks, large young, ₱ dozen	7 00 @ 8 00
Geese, ₱ pair	2 25 @ 2 50
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	2 50 @ 3 00

Butter.

Prices suffered a further decline, with weakness of the market most pronounced on creamery product, stocks being largely of this description. Select dairy butter is for the time being selling close to figures realized on the average run of offerings from creameries.

Creamery, extras, ₱ lb	25 @—
Creamery, firsts	24 @—
Creamery, seconds	23 @—
Dairy, select	24 @—
Dairy, firsts	23 @—
Dairy, seconds	21 @23
Mixed Store	17 @18

Cheese.

Market has not developed much change since last review. Domestic is in fair supply. Close cash buyers have little trouble in securing choice flats at 12½c., and there is not much cheese offering under this figure, there being little low grade stock on the market at present.

California, fancy flat, new	13 @12½
California, good to choice	11½@12
California, fair to good	10½@11½
California, "Young Americas"	11 @13
Eastern	15 @16

Eggs.

Stocks on the wholesale floors were rather heavy the current week and there was a quotable decline in prices. The weakness was largely attributable to the weather being unfavorable for storing. Besides, some dealers considered recent prices too high for speculative operations, knowing that California cold storage eggs will have to come into competition with Eastern product.

California, select, large, white and fresh	20 @—
California, select, irregular color & size	18 @19
California, good to choice store	17 @18
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Asparagus has been in very fair request, both for canning and immediate use, at tolerably steady values. Rhubarb was rather plentiful and market favored consumers. Green Peas of choice quality were not in excessive supply. String Beans and Egg Plant were scarce. Onions arrived rather freely and sales of choice over $3.25 per cental were the exception.

Asparagus, No. 1 to choice, ₱ lb	4 @ 6
Asparagus, No. 2, ₱ lb	3 @ 3½
Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	15 @ 20
Beans, Wax, ₱ lb	— @ —
Cabbage, choice garden, ₱ 100 lbs	50 @ 60
Egg Plant, ₱ lb	— @ —
Garlic, ₱ lb	8 @ 10
Mushrooms, ₱ lb	— @ —
Onions, Yellow Danver, ₱ ctl	3 00 @ 3 25
Peas, Green, ₱ lb	2½@ 5
Peppers, Bell, ₱ lb	— @ —
Peppers, Green, ₱ lb	6 @ 10
Rhubarb ₱ box	35 @ 1 00
Summer Squash, small box	— @ —
Tomatoes, Los Angeles, ₱ box	1 50 @ 2 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market was firm for choice potatoes, both table and seed stock, but weak for common qualities. Some fancy Oregon Burbanks sold up to $1.45 per cental ex-wharf. Colorado potatoes were laid down at 80c. per cental. Sweets were in good supply and were offered at quite reasonable figures.

Cal. Early Rose, ₱ cental	— @ —
Salinas Burbanks, ₱ cental	— @ —
River Burbanks, ₱ cental	40 @ 95
River Reds, ₱ cental	65 @ 85
Oregon Burbanks, ₱ cental	1 00 @ 1 40
New Potatoes, ₱ cental	2 50 @ 3 00
Sweet Potatoes, ₱ cental	50 @ 1 00

Fresh Fruits.

Apples are in moderate supply, largely cold storage holdings, and are selling within same range of prices lately current, but movement is slow. Only for strictly choice to select table fruit, such as fancy Newtown Pippins, does the market display any special firmness. Some Ben Davis Apples arrived from the North and sold mainly within range of $1.00@1.40 per box. The first Strawberries of the season arrived Saturday from Watsonville district and brought $1.50 per drawer. They were of the Excelsior variety, grown from Eastern plants.

Apples, fancy, ₱ 50-box	1 75 @ 2 00
Apples, good to choice, 50-lb. bx	1 00 @ 1 50
Apples, fair to good, ₱ box	75 @ 1 00
Apples, Lady, ₱ box	—— @ ——
Persimmons, ₱ regular box	—— @ ——
Strawberries, large, ₱ chest	—— @ ——

Dried Fruits.

Market has not changed materially since last report. With the single exception of Prunes, there are no large holdings and stocks of Prunes are lighter than at corresponding date for some years past, with few other than the middle sizes now offering. Evaporated Apples are nearly out of stock and market decidedly firm. Apricots are in slim supply and free sales could be readily effected at full current rates, if the fruit was obtainable. Peaches are being firmly held, and are mostly of the higher grades, standards being hardly quotable. Pears of the cheaper kinds are in fair supply, while of choice to select there are practically none offering. Pitted Plums of select quality are obtainable only in a small way. The steamer Umatilla, sailing the past week for British Columbia, carried 51,875 lbs. dried fruit, including 41,875 lbs. Prunes. The steamer Sierra, for Australasia, took 88,000 lbs. assorted dried fruit, including 60,840 lbs. for New Zealand and 26,640 lbs. for Australia. The steamer Mongolia, for the Orient, carried 20,000 lbs. dried fruit.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5 @ 5½
Apples, extra choice to fancy, 50-lb boxes.	6 @ 7
Apricots, Moorpark	10 @12
Apricots, Royal, good to choice, ℔ lb	8½@ 9½
Apricots, Royal, fancy	10 @11
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	8 @10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—
Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.	

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

Offerings are largely of the lower grades, with movement moderate. The steamer Sierra, sailing the 17th inst., took 19,400 pounds raisins, mainly for New Zealand. Now that the Growers' Association is being re-established on new lines, improved conditions for the producer are looked for.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4-crown, 20-lb box	— @1 30
Dehesas, 20-lb box	@1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Arrivals of Oranges were irregular and comparatively light in the aggregate, the wet weather checking the picking of the fruit and railroad washouts delaying shipments. Most of the receipts were shipments overdue from previous week. Much of the fruit was in poor condition and such met with a weak market. For choice stock there was a good demand at better average prices than had been ruling. The smaller sizes of Navels were most in request. Lemon market was without quotable improvement, supplies proving ample for the demand, which was not very active. Values for Limes were unchanged.

Oranges, Navels, choice to fancy, ℔ bx	1 50 @2 00
Oranges, Navels, fair to good, ℔ box	1 00 @1 25
Oranges, Seedlings, ℔ box	1 00 @1 25
Oranges, Cal. Tangerines, half box	1 00 @1 25
Oranges, Blood, ℔ box	1 00 @1 50
Lemons, California, select, ℔ box	2 50 @2 75
Lemons, California, good to choice	1 75 @2 25
Lemons, California, fair to good	1 25 @1 75
Grape Fruit, ℔ box	1 50 @2 50
Limes, Mexican, ℔ box	4 00 @4 50

Nuts.

Market is quiet for both Almonds and Walnuts. Trade is almost wholly of a small jobbing character. In quotable values there are no changes to record.

Chestnuts, Italian, ℔ lb	7 @ 8
Nonpareil Almonds	13 @16
Ne Plus Ultra Almonds	11 @14
Languedoc Almonds	8 @11
Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

No evidence of much doing in the wholesale wine market. For dry wines of 1904 vintage values remain quotable at 14@17c. per gallon, but these figures are at present more in accord with the views of holders than with the bids of large buyers. Sweet wines of last vintage are quoted at 25c. per gallon at wineries, 27½c. San Francisco delivery. Adulterated and imitation wines, both dry and sweet, colored and toned with cheap poisons, are being foisted on the market. This truck should be confiscated and destroyed and the parties making and selling it be severely dealt with. Bogus claret is being manufactured at a cost of about 6c. per gallon. Receipts of wine at San Francisco last week were 284,850 gallons and for previous week were 248,600 gallons. The steamer City of Para, sailing yesterday, carried 71,107 gallons and 50 cases, mainly for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	66,620	3,382,242	4,149,891
Wheat, ctls	25,982	2,329,728	1,796,793
Barley, ctls	27,117	2,952,153	4,877,099
Oats, ctls	57,271	782,151	791,781
Corn, ctls	3,951	159,717	124,975
Rye, ctls	795	45,754	44,719
Beans, sks	8,082	562,218	651,836
Potatoes, sks	35,437	1,021,358	1,036,789
Onions, sks	2,041	108,717	127,014
Hay, tons	2,597	141,273	135,790
Wool, bales	1,027	42,084	36,805
Hops, bales	85	37,461	28,944

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	18,164	2,303,360	2,763,360
Wheat, ctls	164	801,367	830,444
Barley, ctls	6,216	1,740,767	3,850,477
Oats, ctls	25	75,022	18,413
Corn, ctls	1,429	79,823	15,002
Beans, sks	244	43,777	34,206
Hay, bales	1,940	198 271	193,585
Wool, lbs	....	830,690	1,848,923
Hops, lbs	4,438	331,079	565,708
Honey, cases	200	2,046	4,291
Potatoes, pkgs	991	93,071	89,173

Caustic Balsam Cured Bog Spavin.

Sioux City, Ia., March 7, 1904.

The Lawrence-Williams Co., Cleveland, O.:

We used GOMBAULT'S CAUSTIC BALSAM on a valuable shire colt that had developed a bad bog spavin early last spring, while running in pasture. The spavin had been there some time before we began treatment, yet to-day you could not tell that it had ever been blemished. Although the CAUSTIC BALSAM blistered considerably, yet the hair was not injured in the least. We were very much pleased with it indeed.

FARMER & BREEDER CO.
Per W. S. STEELE.

PATENTS

DEWEY, STRONG & CO.

(ESTABLISHED 1860.)

SAN FRANCISCO, CALIFORNIA, and WASHINGTON, D. C.

OLDEST AND LARGEST AGENCY ON THE PACIFIC COAST.

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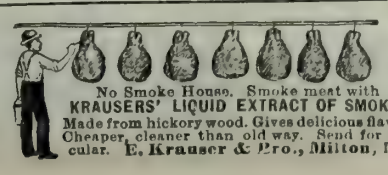
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Fourth: A description of the patented invention will appear in the *Mining and Scientific Press.*

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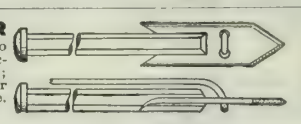
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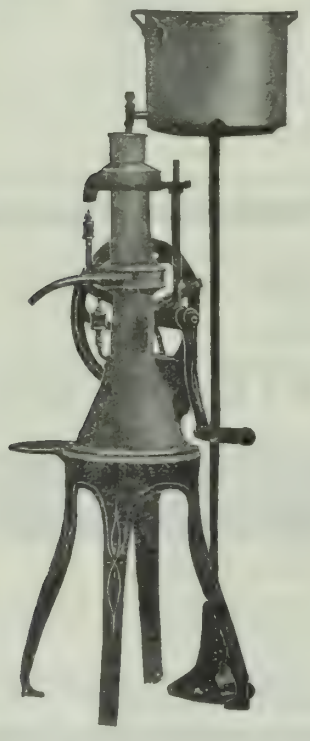
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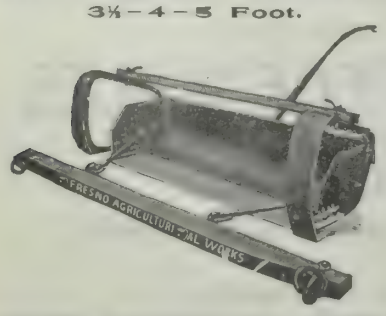
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Calf Rations and Milk Contamination.

(Continued From Page 182.)

bing with vaseline, and (4) simply brushing with the hand.

A bacterial test was made of the above methods and the results obtained brought forth the following conclusions:

Some means of preventing milk contamination during milking should be employed.

The work required to sponge an animal's flank and udder is but a trifle, and great improvement can be made on the milk and its products.

The acid solution costs 2 cents per gallon, which is enough to treat ten cows. The only objections to this method are the disagreeable odor and the bother of mixing.

The vaseline costs about the same as the carbolic acid, and serves as a good preventive for chapped or sore teats. It is also to be recommended for cows with short teats which have to be milked by the stripping method. This treatment will not answer when the cows have dirty udders.

The water treatment is to be recommended for general use above the other three, as it is cheaper and does the work practically as well. This method can be used on any farm, with little or no inconvenience, and the results obtained would more than compensate for the extra time required

A. L. Haecker.

Cow Comfort.

Each dairyman must arrange his methods of dairying to suit his own particular circumstances, but in one respect all well cared for cows are alike—that is, they love their home. They will do better when kept in the same barn and under the same circumstances than they will if changed about and isolated.

We have here a herd of 175 cows and the following method of handling them when fresh or dry has proven to be a satisfactory one:

First, all cows are dehorned; then in a short time they are as peaceable as so many sheep.

If the weather is not too stormy, they are allowed to go out a part of each day during the winter, and all of the time during warm weather except for feeding and milking.

They are numbered and, no matter how many there are in the barn, each cow soon learns her own stall and goes directly to it when allowed to come in.

We practice the siloing system and each cow gets her feed in her own stall the year around, with the exception of ten days or two weeks while she is calving. During this time she does not miss being away from the herd, as her attention is taken up with the calf; neither does she forget which is her stall when she goes back on the line.

Each cow's milk is weighed once per month and the weight of the milk with the cow's record kept on a board in front of her stall.

All feeding is done according to the amount of milk the cow gives, and when one goes dry she is put on a very small grain ration and is usually fed a cheaper grade of roughage, or, if roughage is very good, she gets no grain at all.

My aim is to have them contented and comfortable, whether fresh or dry, and to keep them in the same condition the year around. The cow probably loves regularity more than any other animal living. Give her a stall and let it be her home, and all the vacation she wants from home is a few days before and a few days after calving. Let her go out when the weather is good.

Others may have a better system, but with a large herd and under our circumstances my method keeps the cows always contented. There is never any confusion in the barn. Loud language and clubs are unnecessary and never used, because the cows know their stalls and go to them directly. Each cow gets the proper feed because her ration is kept on the board opposite her number. It requires less work and gives better results than any system I know of.—Hoard's Dairyman.



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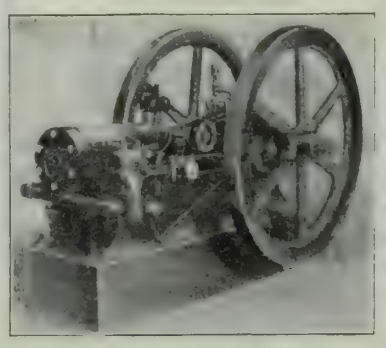
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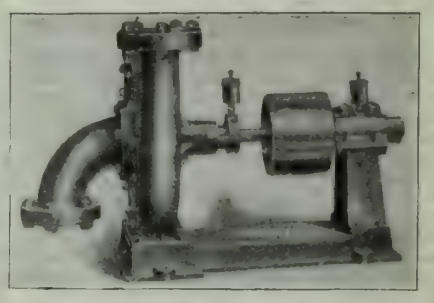
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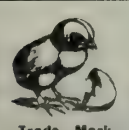
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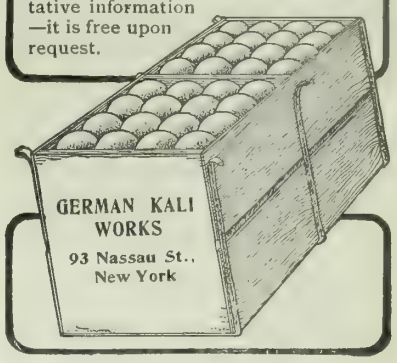
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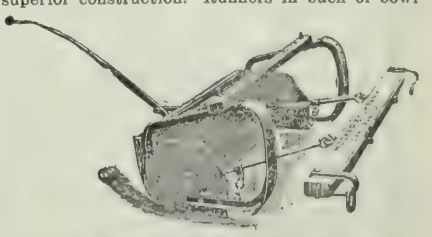
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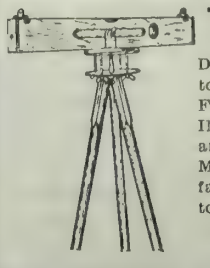


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Important Valley Problems Illustrated by Kern County.

(Continued From Last Issue.)

Referring to the second subdivision, it is well known that the water plane in the San Joaquin valley slopes continuously from the upper levels down to the elevation of tide water at the junction of the San Joaquin and Sacramento rivers, and that there is a continuous discharge of seepage water from the San Joaquin valley into San Francisco bay. If pumping be carried on at any point in this water plane the effect is to either flatten this hydraulic grade or to reverse it towards the locality where the pumping operations are carried on. This, according to the law of gravity, would diminish the discharge from the valley and retain a certain amount of water otherwise seeking an outlet.

As to the recharging of the water plane from the flood flow of small streams from the hills encircling the valley, it is evident that if voids are created in the beds of these streams by the draught of pumping plants greater opportunity for the infiltration of flood waters is afforded. This would be a condition necessarily following the operation of the pumping plants, all of the small streams entering the San Joaquin valley in Kern county, such as Poso creek, San Emidio creek, Tejon creek, Caliente creek and others, carrying considerable volumes of flood water during the rainy season. These waters, to a considerable extent, sink into the beds of the stream channels and become a part of the water plane lower down the valley. This process of sinking continues from the point where these streams leave the mountains until they reach a point where the soil is already fully saturated.

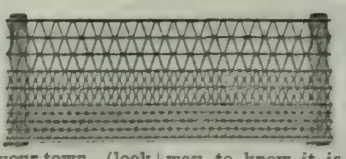
The replenishment of the depletion by pumping from the return waters of the river will be felt within a few years after the change of use in the waters of the river has been made. The diversion and application of the waters of the river upon new areas lying at higher altitudes would at once begin to fill the voids of the soil beneath the surface and this water would gradually move down toward the lower axis of the valley to refill the voids caused by the pumping and application of water at that point. The quantity of such return water would, of course, be problematical, and would undoubtedly be less than the percentage which I have stated as applying to pumped water itself. This difference would be due to the fact that there is a difference in the character of the soil along the higher levels of the valley and also a greater depth to the water plane at such levels. It is safe to say, however, that in the light of experiments made in southern California, where conditions are quite similar, as in the case in the vicinity of Riverside and Corona, there would be not less than 30% of the water applied at these higher levels which would return to the lower by means of seepage from irrigation. This quantity, when added to the other items stated in the first three subdivisions, would be more than sufficient to replenish any possible draughts upon the water plane in the axis of the valley caused by the pumping operations suggested.

Cheap Power.—Nowhere is there a locality where better opportunity for cheap power is afforded than in Kern county. The problem of pumping water cheaply is one that can be solved without the slightest trouble. Not only is there at the present time in course of construction and in operation power plants on the Kern river which will be able to supply all the required energy for this purpose, but there are also extensive oil fields lying on the very borders of this region. The possibilities for the development of electric power frnm the Kern river are such that not less than 150,000 electrical horse power can be obtained. The work has already been completed whereby 40,000 H. P. will be available for use in the near future. The other projects under consideration, which will unquestionably be constructed in the near future, will within the next fifteen years develop the full amount above stated, provided a market for the power is found as rapidly as it can be developed. While these power plants are unquestionably capable of furnishing energy for pumping cheaper than from any other source, the existence of the extensive deposits of petroleum, from which fuel can be obtained at a low price, is an insurance against exorbitant charges for power in this vicinity. Never has a locality come under my observation where the opportunities for future expansion were greater than in Kern county.

Results.—The carrying out of the projects above outlined will produce water cheaply and in sufficient quantity for all of the tillable lands in the county, and make the county of Kern one of the most thickly populated and prosperous in the State of California. There are undoubtedly difficulties in the way of carrying out these projects, but these are not engineering difficulties, nor are they such as will discourage a business man. They come principally from the customs and prejudices which have grown up among the people from a long continuance of the present conditions. The present method of distributing the water has come to be regarded as the only method which is possible, and undoubtedly most of the people believe that no change will ever occur. However, the advance of values in land and the products of agriculture will force these issues upon the people sooner than is expected. The patriotic desires of the citizens of the county will also lead them to look for ways by which the population and products will be increased. When the people are brought to a sufficient realization of the great possibilities in store, and the moderate investment of capital required to bring this about, the obstacles now in the way of changing the present place and methods of using the water can easily be removed. It needs but mutual agreement and united action on the part of all present owners of the water rights in Kern river, as well as the land owners throughout the valley, to greatly enhance the intrinsic value of their holdings by carrying out some plan following the lines which I have suggested.

To understand the result of carrying out a project along the lines suggested, just picture the greatness of Kern county multiplied fourfold. Bakersfield would then be a city having four times the present population, and every community in the valley would experience a corresponding increase in numbers. This is, indeed, a goal which is worthy of great effort on the part of the people in this county, as the effect would be to place Kern county in the fore rank of counties in the State of California.

Lord & Thomas, Chicago, New York and St. Louis, have issued the 1905 edition of their "Pocket Directory of the American Press," giving information regarding the circulation claimed and other data on all advertising mediums published in the United States, its possessions, and Canada, with the latest Federal Census. A new and useful feature is a directory of Outdoor Display. This 800-page book is of timely value.

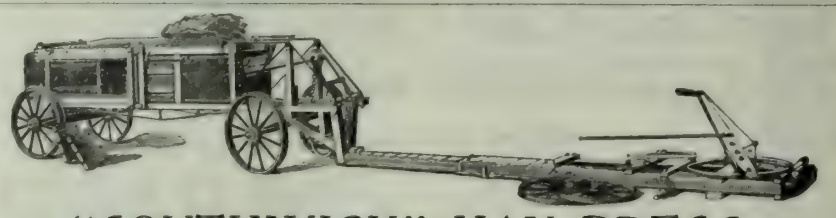
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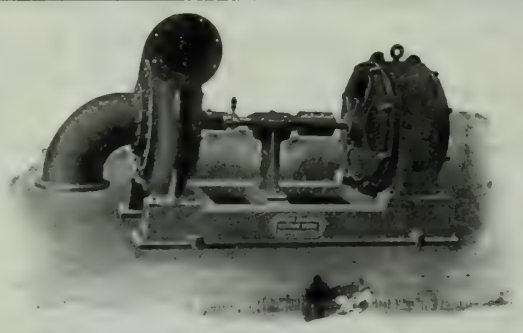
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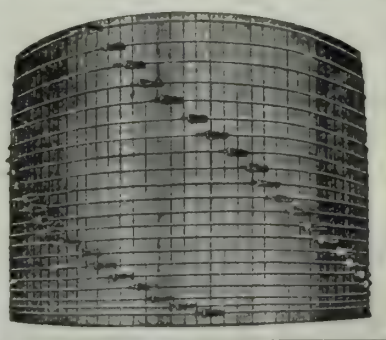
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The Windsor Grange.

The Windsor Grange, says the Windsor Herald, was organized last Saturday evening, as announced, by State Master H. C. Raap and District Deputy Winans. The Windsor Grange is made up of our most prominent farmers and their families. It is an organization devoted exclusively to the interest of the farmers, whose cause it champions and promotes in the national and various State Legislatures. It points with pride to the rural free mail delivery, to the proposed parcles post and to many other public improvements of great value to the farmers, as the results of its work and the united efforts of the Patrons of Husbandry.

Windsor Grange will very properly confine its work almost entirely to the things and questions of local import—to locating sites for bridges and causing bridges to be built; to the solving of some of the problems of grape culture, by causing the professors of the University of Agriculture to come to the village and deliver lectures upon the work the University is doing and hopes to do. In short, the Windsor Grange is to be the farmer's club, and, properly attended and conducted, will become a political as well as an industrial factor of great power and much benefit to the farmers. The Grange met again last Thursday evening and perfected the organization.

The following officers were chosen for the year: Master, H. N. N. Latimer; Overseer, Rolf Juell; Lecturer, A. B. Nowlin; Steward, Fred Pohley; Assistant Steward, Stuart Rich; Lady Assistant Steward, Mrs. F. T. Brown; Chaplain, F. T. Welch; Treasurer, George Michelson; Secretary, Miss Edna M. Brown; Gate Keeper, R. Bigham; Pomona, Mrs. W. B. Rich; Flora, Miss Jessie Leslie; Ceres, Mrs. M. M. Gibbens; Organist, Mrs. F. T. Welch; Trustees, Frank Purcell, A. B. Nowlin and Robert Purcell.

Lincoln Grange.

Lincoln Grange met in regular session March 10th, Worthy Master Geo. E. Hyde presiding. The prune situation was discussed, but no action taken, a deep desire being expressed that the Dried Fruit Promotion Association may be able to present some mode of overcoming the slashing of prices.

Thrips were reported to be seen in many orchards on the west side of the valley, but not in large quantities.

There were several names presented for membership, and a class will be initiated on March 24th. The death of Mrs. Jane Lathrop Stanford was deeply deplored, feeling that one who has done so much for education and public welfare generally that her passing on is a most lamentable loss to the State.

A Good Selection.

The PACIFIC RURAL PRESS, one of our most valued exchanges, has been selected as the official organ of the State Grange of California, which is a strong factor in California's progressive rural life. This means that 20,000 readers have been added to the PACIFIC RURAL PRESS in California, which should be a fact worth remembering by advertisers. The paper is in its thirty-fifth year, and is a valuable paper for any farmer.—Arcata Union.

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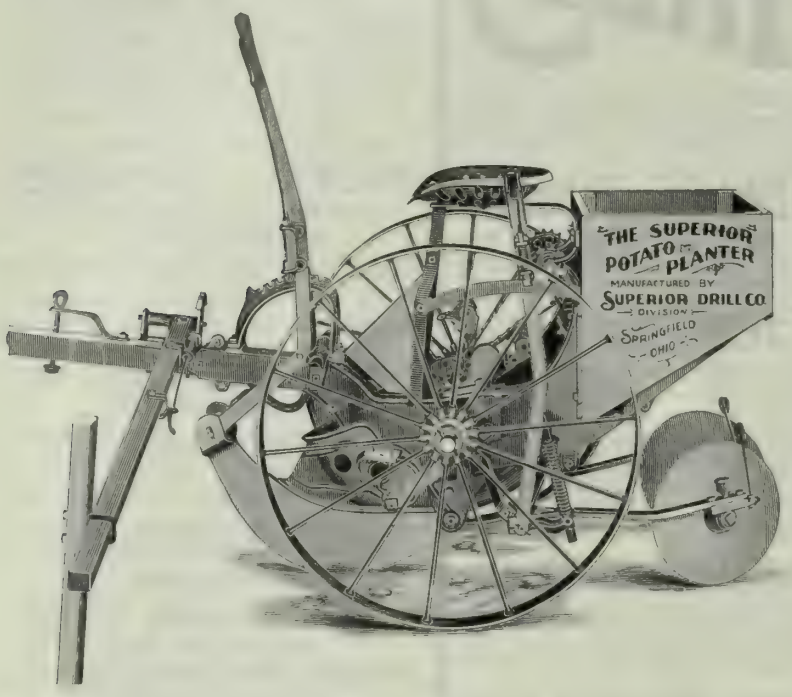
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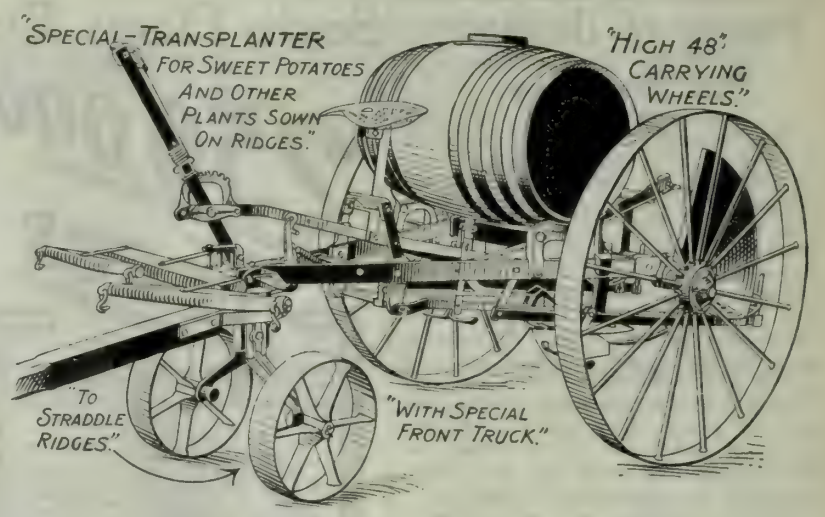
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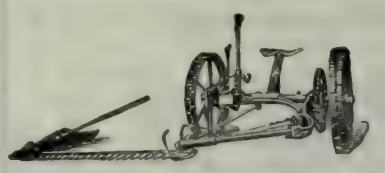
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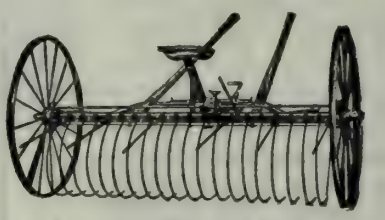
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Vol. LXIX. No. 13. SAN FRANCISCO, SATURDAY, APRIL 1, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Humboldt Redwood Industry.

In the PACIFIC RURAL PRESS of September 17th and December 3rd of last year we gave interesting illustrated accounts of the grand coast redwood (Sequoia sempervirens) as it stands in the primeval forest of Humboldt county and comments also upon the destructive character of the redwood forest. In our issue of January 21st we had an elegant picture of the redwood forest as it lends itself to park-like clearings in the Bohemia Grove, near Guerneville, Sonoma county. Having thus done our pleasant duty in exalting the redwood as a thing fit to preserve and enjoy, it is time to glance at the destruction of the redwood forest and the important industry which lives by its death. The Humboldt County Souvenir of the Eureka Times does full justice to this industry, which is of prime importance to the county, and relates many interesting historical facts concerning it.

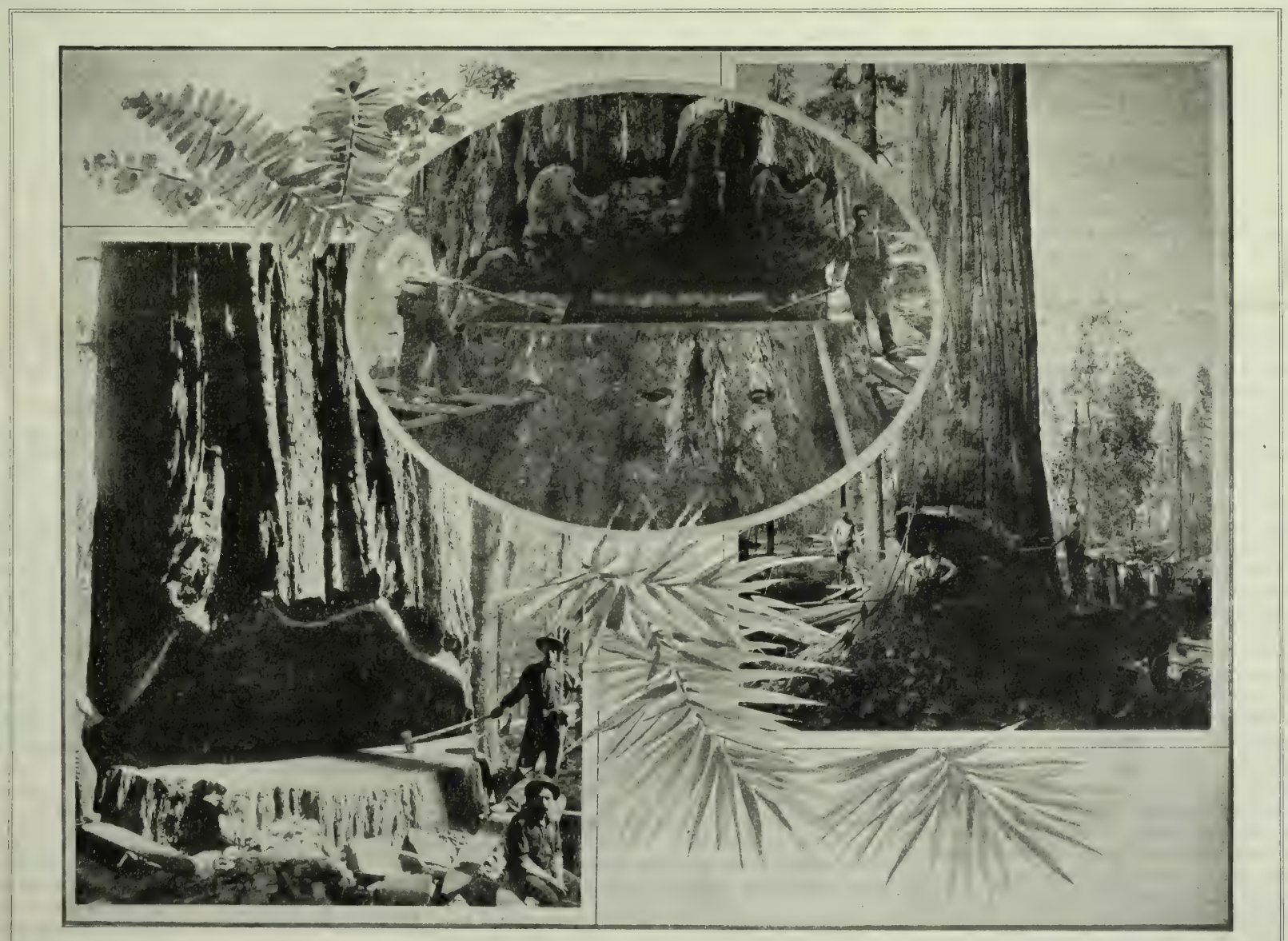
Under the American development, so far as authentic accounts give us history, the manufacture of lumber in Humboldt was commenced in 1850, but the manufacture of redwood for the lumber market did not commence until 1855. Those who engaged in the lumbering business were Eastern men, from the Provinces and from Maine, accustomed to the pine, pru ce and fir of that region. They knew those and kindred varieties of timber, and their adaptability to the manufacture of lumber and construction work; but by reason of both the incapacity of the mills at that time to handle the large redwood logs, and lack of knowledge as to their adaptability for lumber manufacture, no redwood was manufactured or shipped from Humboldt till 1855. As a proof of this statement, it is only necessary to mention the fact that the first cargo of lumber that was manufactured and shipped was in 1851; it was sawed at the "Pappoose" mill, owned by Martin White, which mill had a capacity of about 4000 feet a day. From that initial cargo of lumber from Humboldt in 1851 to the summer of 1855 all the lumber manufactured and shipped from Humboldt bay was spruce, pine and fir.

In the summer of 1855 the Muley mill (then operated by Wm. Carson), by picking out the smaller logs, and not handling anything that exceeded 5 feet in diameter, got out a cargo of 200,000 feet of redwood lumber and shipped it to San Francisco on the brig Tigress. From that time on the manufacture of redwood increased, but slowly up to 1862, mainly on account of the incapacity of the sash and Muley saws to cut the huge logs. In 1862 the circular saw was introduced, when the manufacture of redwood gradually attained greater dimensions.

While Humboldt was not the first to manufacture redwood into lumber, yet, after 1862, when the circular saw came into use, it soon took and has always held a leading position as a source of redwood lumber for both the San Francisco market and the lower coast.

The gradual growth of the manufacture of redwood lumber cannot be given in exact terms, as there exists no authentic record of the annual output until 1889. However, a fairly correct estimate can be made by approximating the acreage timbered off. By this means it is found that from 1855, up to and including 1888, there had been cut 2,498,213,317 feet, board measure, of merchantable lumber in Humboldt, which would average 7,551,919 feet annually for thirty-three years, the time from 1855 to 1888 inclusive. During the last fifteen years the lumber cut has trebled in volume, reaching over 250,000,000 feet in 1903 and now rapidly increasing.

From the crude methods in vogue in 1851, when the first sawlog was rolled into Humboldt bay, the successive stages of improvement in lumbering forms an interesting chapter in the history of Humboldt's progress. The first logs handled were small, and were moved by means of ox teams on bob-sleds; then heavy trucks with solid wooden wheels, bound with heavy iron bands, were employed for the longer distances. Thus the pioneer lumbermen worked, selecting such logs as they were able to handle with the means they had.



Felling the Giant Redwoods of Humboldt County—The Undercut.

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SAN FRANCISCO, APRIL 1, 1905.

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The Week.

Frequent rains and rather a low temperature, although promoting, perhaps, the sturdiness of field growths of grain and pasturage, are apparently ministering to rather undesirable manifestations in the fruit line and bringing distress to peach trees in particular. There is often trouble with peaches during a heavy March rainfall, both from effect upon the roots and upon the new growth and setting fruit, interfering with the sap flow and causing leaves to go back also, sometimes inducing rot of the little fruit. These conditions are more or less serious and productive of loss, but in most cases the injury is but partial and temporary. One cannot tell at this moment what it amounts to on the whole, but it probably seems now much greater than it will be found later. We are receiving many specimens which for this week must be covered by these general remarks. On the whole the outlook for a grand crop year in all parts of the State was never better.

Spot wheat is unchanged and no movement either toward clearances or charters. Speculative wheat here has a slight decline, sympathizing but lightly with the feeling in Chicago and Liverpool. Spot barley is stationary; May barley is, however, down 3 cents, while December declines only ½ cent—a good outlook for the next crop. Some Eastern barley is brought in; probably to help the shorts bear values. Common oats are heavy; the cargo of 3000 tons diverted here instead of going to Manchuria still holds things down. White corn is firm and going to Central America and small yellow is scarce. Beans are quiet and somewhat easier, as Eastern markets are said to be slow and weak. Hay is soft, though 2800 tons have gone to Manila; there seems to be an excess of everything except fancy red oat. Bran and middlings are unchanged and little doing. Alfalfa seed is offered in a hurry, as it is late. Beef and mutton are the same and large veal is lower, while hogs hold values—although receipts are larger and milk hogs coming in. Butter is unchanged and rather weak, though there is a good shipping demand to the North. Cheese also has a good shipping inquiry and prices are maintained, as supplies are moderate. Eggs are heavy, and many going into storage. Poultry is firm, especially for young roosters, goslings and ducks, and other classes doing fairly. Fancy potatoes are high and poor are dragging. Onions are held steady, but not very strong. There are 3840 crates in from Australia and New Zealand, which, however, are held for the shipping trade. Cold storage apples came out as required; choice to fancy held high, but not much doing. Oranges of common grades are in excess, while fancy small Navels are in good demand. Lemons are quiet and easy. There is considerable movement in dried fruits for this time of the year and everything doing well but medium-sized prunes. The export movement is noted in our market review. Walnuts are moving at slightly lower rates and almonds are quiet. Honey is quiet, with too much amber in sight. Hops are in dispute here, though heavy trading is reported from the East. Wool is nominal here, but northern California coast is quoted up to 27½ cents in Boston.

The butter trade is little disturbed by the law which will go into effect May 19th requiring the marking of packages of butter containing less than six pounds and more than one-half pound so as to advise the purchaser or others as to the weight of butter contained in such package. We will give the full text of the law next week, for it tells just what sort of marking is required and the penalty for transgression. It will enable the purchaser to be sure just what weight of butter he is getting at retail, if he is interested enough to concern himself about this information.

The coming State Fair will come all right and in pretty good shape, too. The State Board of Agriculture has agreed upon buildings for the new State Fair grounds, and fixed the period of the Fair for one week, from Saturday, September 2, to Saturday, September 9—Admission Day, which is to be celebrated by the Native Sons of the Golden West. The Board finds that it has $25,000 for buildings on the grounds, $30,000 for premiums, $6000 for printing, $45,000 in the State Treasury (available on transferring its property to the latter), $25,000 allowed on payment of debts of the Society, $29,500 surplus from the sale of old Agricultural Park, all of which, with cash on hand for current expenses, gives a total of $161,500. Against this there are liabilities amounting to $65,000. Thus the society is solvent in the sum of $95,500, and to this is to be added the asset in the form of the new park acquired, $22,000. This is a good showing for a good Fair—all the better because there can be no pool selling or other gambling on the grounds. The agricultural interest can now conscientiously and energetically support the Fair and make it worthy of the State by patronizing it and preparing such an exhibit as has not been seen for years in California.

The Colusa Sun takes us to task for printing Mr. J. Parker Whitney's article on the citrus belt in central and northern California. The Los Angeles papers objected to Mr. Whitney's writing because they claimed there was no citrus belt there; the Colusa Sun objects because of its belief that central California is all citrus belt. All these critics make us sad. There was nothing in Mr. Whitney's writing to show that his belt might not stretch out in spots, so as to take in Colusa, for instance, and surely it will have to contract in spots to exclude soils and exposures which do not suit citrus fruits. As for claiming that the Sacramento valley, or any other valley in California, north or south, for that matter, is all citrus belt, is just as bad a mistake as to claim that it is all corn field. California will not suffer from those who try to define things; it is the great generalizers who lead to error and disappointment.

Among the officers elected at the last meeting of the California State Board of Trade we are glad to see the names of General N. P. Chipman as president and A. R. Briggs as secretary and manager. Both these gentlemen have a keen idea of what is good for California and great zeal in advancing it.

We note that our exchanges, in commenting upon the farm which is to be provided for the State University, are freely using the term "agricultural farm." Unless you are going to use the land for something which is not primarily agricultural, it is not necessary to call it anything but a farm. In this case the name will probably be the University farm, and it seems undesirable to load it up with tautological designations.

Mr. John Isaac, formerly clerk to the State Horticultural Commissioner, has been promoted to a secretaryship. It is a deserved advancement.

QUERIES AND REPLIES.

Split-Bud Hybrids.

To the Editor:—I should like to know if you believe in Mr. Thompson's explanation of the origin of his improved Washington navel. From my own experience in bud propagation, I can't believe that the orange mentioned is the result of a union of three buds. I, however, have been mistaken once or twice in my life and realize that possibly I may be again.—Orange Grower, San Bernardino county.

Mr. Thompson's claim of the origination of the improved Navel orange, by the process of splitting buds and using several stocks in succession, has been publicly made and is undoubtedly a fair subject for discussion. We are frank to say that most people believe that Mr. Thompson is mistaken as to the efficacy of his method of propagation, and believe rather that his success in the development of this variety depends upon the choosing of a fine type of natural variation, attended by the very favorable conditions which he has enjoyed in his situation and in the liberal treatment which he has practiced in supplying the needs of his trees. Beyond this, a number have claimed that the process of splitting buds and securing what might be called a bud-hybrid in that way is impossible, and others have pronounced the claim ridiculous. We have preferred rather to accept Mr. Thompson's statement as to the method he employed until full demonstration could be had that he was mistaken. Recently Prof. N. F. Murray of the Missouri College of Agriculture has been credited with making an address before the Kansas Horticultural Society, claiming full success in causing split buds to unite and grow together, and from the appearance of the growth and foliage to conclude that out of 100 trials which he made of split buds of the apple he has secured at least three crosses, the fruiting of which he is now awaiting with much interest. If this account should prove correct and fruits exhibiting the traits of hybrids should be secured by his experiment, then the common disposition to proclaim against the possibility of split buds must be withdrawn. The whole matter is still unsettled, but Prof. Murray's claim undoubtedly gives strength to the claims previously made by Mr. Thompson.

Intercropping in Young Orchard.

To the Editor:—I have about sixty acres of land just planted in fig and walnut trees. They are respectively 30 and 40 feet apart each way. Of course there is much spare ground between the trees and will be for some years to come. There is a little adobe in the soil, but not much. What can I plant to best advantage on that spare ground—nothing within several feet of the trees, of course? I have a small poultry plant—about 1000 birds—on the ranch. Would Kaffir corn be desirable on part of it and the yellow Dent corn of Iowa on some of the ground? How late will it do to plant these in Contra Costa county? How is the Kaffir corn harvested? If allowed to ripen is the fodder of any value? How much later than this can I sow oats and expect the crop to ripen? My farming has always been in the East and I do not want to make mistakes in my California experiment.—Walnut Creek, Contra Costa county.

This is a local question, and what we say should not be given too wide a bearing, for it will not work everywhere. Your course is largely to be determined by two considerations: First, will there be moisture enough for both trees and intercrop? if so, second, what crop can you use to best advantage? The conservation of moisture is of course best with a hoed or cultivated crop, consequently corn, sorghum, stock beets or sugar beets, squashes, Jersey kale, etc., are all better than a crop for grain or grain hay. Sorghum will do more with less water in the way of both forage to be cut green, and in grain if left to mature, than Indian corn will, but sorghum fodder, after maturing grain, is worth less than corn fodder. All the things, except the oats, can be sown or planted in your locality as late as May this year, if you plow and harrow the land soon to retain the large amount of water which has fallen, but all will amount to more if put in April or May. Kaffir corn, which is a sorghum, is harvested about as Indian corn is. It will make good chicken feed. It seems to us that we should use the land to grow as much grain and green feed for poultry as you can use. It will require some looking around to see what you can sell at a profit. You ought to have more stock to put it into profitable form.

Serious Trouble With Peaches.

To the Editor:—I enclose you some bark from limbs of peach trees that are from 2 to 8 feet from the ground; also some little peaches just shedding the blossoms. This disease has been with us for five or six years, but heretofore confined itself to the small limbs around and inside the crotch of the main tree, but this year it is ten times worse than ever before, and the leaves have all fallen from the limbs as high up as 8 feet from the ground, and it looks like a fire had run over the lower part of the tree. Three or four days ago I examined these little peaches with a magnifying glass and saw from two to five little yellow, flat, lively worms, and I suppose these are the cause of all the trouble. These insects do great damage to the little limbs of the peach tree, and the gum comes out in large quantities and turns the limbs black, and all the leaves and everything falls from the limbs. Please inform me in your next issue what this disease is. It is going to knock all the orchards out here if it continues getting worse, as it is now doing. It is now commencing on my four-year-old trees. I am going to cut out all the affected limbs. I sprayed these late Crawfords last year with lime, salt and sulphur, and killed all the scale, but the present disease is worse than ever.—Peach Grower, Fowler.

We print the above to get information rather than to give it. Peach troubles are very widespread this spring, as they are apt to be whenever we have so much rain during the spring months. There is much sour sap injury showing itself, and wherever this is manifesting itself because of the rise of the bottom water by irrigation it is increased this year by the amount of top water which has poured down. Again, there is an increase of peach moth, and there is now widely announced, all through the interior valley, a loss of new foliage and fruit, and gumming of twigs and the appearance of dead spots on larger twigs and branches which may not be wholly accounted for by agencies previously noted. Our present belief is that saturated soil and chilly damp air are chiefly to blame for this year's prevalence of trouble. Who can demonstrate that there are other agencies at work? The specimens sent by our correspondent do not disclose any.

Fertilizers for Chalky Upland.

To the Editor:—On gravelly, chalky upland soil, what fertilizer would you recommend most strongly for the prunes and cherries? The peaches and pear trees showed distinct lack of nourishment, which at first was thought, perhaps, due to superficial cultivation. More intimate acquaintance with the place suggests rather exhaustion of the food elements in the soil.—Farmer, Napa.

Unquestionably the best fertilizer for your soil, both to stimulate the growth of plants and to increase the amount of humus in the soil, is common barnyard manure. It might be worth while to see if supplies cannot be had in the neighborhood, for it frequently happens that in old settled districts large quantities are made no use of and can be had at quiet reasonable rates. It is also a good idea to get a winter growth of burr clover or field peas and plow in at the spring plowing as much of this green stuff as possible. The soil not only becomes richer by this process, but is more easy to cultivate and retains moisture better. As an experiment it would be well also to try some of the commercial fertilizers which are prepared by several parties in the city, especially for the growth of fruit trees. The best way to ascertain if investment of this kind is warranted or not is to make experiment, leaving some of the same trees in the same situation unfertilized and note the difference in growth of the two separate parts, because although it is quite easy to get at the question of fertilizing theoretically, it is quite difficult to demonstrate practical results, so that they shall be clearly intelligible.

Cutting Out Die-Back.

To the Editor:—Will it hurt prune trees to have die-back branches cut back later on in the season providing we paint the cuts? We have a good many trees in bad shape.—Grower, Manton.

Whenever die-back occurs in a fruit tree of any kind there should be cutting back into good wood below and it can be done at any convenient time. There is no objection to such cutting back during the growing season. When, however, die-back becomes prevalent it is an indication that the soil or moisture conditions are not favorable for thrifty growth of the tree and removal of injured parts does not constitute a prevention or cure of the trouble.

Lemon Trees Dying.

To the Editor:—My lemon trees are all dying. They are full grown trees, and just above the ground for about 8 inches the bark begins to peel and leaves nothing but the wood—and it gradually kills the roots. The tree manages to keep alive until it is peeled clear around. At the start the lemons are nice and large; but, as the bark splits and peels, the lemons grow smaller until the tree dies.—Grower, Colusa.

It is exceedingly difficult without seeing trees and looking into their condition and surroundings to decide what is really the matter with them. Judging from your description, one would say that your trees were being severely injured at the root. The failure of bark near the ground surface is usually due to a method of irrigation which allows the water to stand around the tree for a certain length of time. There is also a rotting of the root, which comes from lack of drainage and stagnant water in the soil. If you have not irrigated in such a way as to allow the water to stand around the tree, this cause must be ruled out and then you should investigate by digging holes and exposing some of the roots, for the purpose of determining whether the roots are healthy or whether they are partially decayed. One cannot tell from your letter whether your foliage is healthy or whether the trees and twigs are seriously infested by some kind of scale insect. We had a specimen from your town a few weeks ago in which this was the case, the trees practically being destroyed by the red scale. Investigate the ground as indicated for standing water and the foliage and twigs for scale insects, sending down any specimens of any suspicious character which you may discover and possibly we can give you more specific information. It sometimes happens also that trees as they get old strike their roots into alkaline soil below and this will occasion the death of the tree.

Loss of Small Fruits.

To the Editor:—What makes the specks and rough places on the apricots I send, and what would be good to spray them with? Also, do you know anything that would prevent Silver prunes from falling off after they set?—H. B., Hollister.

There is apparently some shot-hole fungus present, and this is largely prevented by spraying with winter Bordeaux mixture before the blossoms open. The formula is given on page 158 of the Pacific Rural Press of March 11. There seems also to be present a fruit rot, due, probably, to the excessive moisture present in the air this spring. This is not capable of reduction by spraying, and does not often appear. It may not do anything this year beyond saving the necessity of thinning. You should, however, look out for winter spraying with Bordeaux next winter if you find your fruit is spotted this year.

The loss of Silver prunes is often due to the lack of pollination secured by the presence of other varieties blooming at the same time. It is also caused by unfavorable weather which may prevent insect work even though other blooms may be open. The fruit may apparently set and yet fall later because of this failure of pollen to act.

English Walnuts.

To the Editor:— Last year we bought a farm; we are rather new in the business, especially about English walnut trees. When is it time for pruning them? Some need work of that kind done. When is the time for budding young walnut trees?—Beginner, Tehama county.

The walnut tree needs very little pruning. The removal of surplus branches, so that the main branches shall have plenty of room for enlargement, the removal also of branches which seem to be tending in wrong directions are always desirable, but there is little occasion for cutting back as is done with most other fruit trees and the tree does best if allowed generally to assume its natural form. The budding of English walnut trees is a difficult operation and success is usually more easily attained by grafting. Recent experience seems to indicate that if the tree is not grafted near the root in the nursery, but planted out in orchard form, it is better to allow it to attain a couple of year's growth before undertaking to graft over, because grafts in the firmer wood which comes with more age seems to succeed better than in the soft pithy wood of the younger tree.

For Jack Rabbits.

To the Editor:—I am now planting several acres to cantaloupes, and later on will plant several acres to sweet potatoes. My place is not fenced and rabbits are numerous enough to do much damage. Will spraying the young plants with Paris green kill the rabbits that eat them? Is there anything better than Paris green? I would like something that will protect them from bugs as well as rabbits. Would an occasional mouthful be injurious to a mule that might reach down and grab up some while cultivating the plants?—Planter, Turlock.

A rabbit-proof fence and a pet greyhound are the best safeguards against hares. Making the leaves poisonous is not satisfactory, because the jack will destroy many plants before tasting it, and you cannot easily use it strong enough to kill either a jack or a mule without killing the plant first. Try making the plant bitter to the taste by spraying with commercial aloes one pound to five gallons of water. The best way, however, is to kill the jacks by uniting the whole neighborhood in the effort.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending March 27, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather was slightly cooler than during the preceding week, but very favorable for growing crops. Light showers fell at intervals. Frosts occurred in some sections toward the close of the week, but they were too light to cause damage. It is reported that many varieties of deciduous fruits are so far advanced as to be safe from frost. The trees are heavily laden with blossoms and buds and all varieties are setting well. Orange trees are in full bloom and are putting out new shoots and foliage. The outlook is for good crops of fruit of all kinds. Grain is in excellent condition and in some places is heading out. Alfalfa is making good growth. Pasturage is abundant and of superior quality. Farm work is progressing slowly.

Coast and Bay Sections.

Partly cloudy and unsettled weather prevailed most of the week, with frequent showers in nearly all sections. Cooler weather and brisk north wind prevailed at the close of the week. Plowing and orchard cultivation have been resumed in some places and work is progressing in hop fields and vineyards. Grain and grass made good growth and are in excellent condition, with prospects of heavy crops. Pasturage is very plentiful and stock are doing well. Early apple trees are in bloom at Cloverdale and other deciduous fruit trees are in blossom in all sections. In San Benito county apricots are setting spotted and not so heavy as last year.

San Joaquin Valley.

The weather was partly cloudy and seasonable, with light rain at the beginning and ending of the week. Grain and grass have made rapid growth and are in excellent condition. Deciduous fruits are developing rapidly and prospects are encouraging for a good fruit crop. Almonds have set well and vines have leafed out and are budding rapidly. Cultivation of orchards and vineyards continue where the ground is not too wet. Green feed is plentiful and stock are healthy and in prime condition.

Southern California.

Warm and generally clear weather prevailed during the week. Farm work has been resumed in some places, but the soil is generally too wet for cultivation. All streams are flowing and reservoirs are rapidly filling. Grain and grass are in excellent condition and making good growth, with prospects of heavy crops. Corn planting is in progress. Potatoes and other vegetables are looking well and growing rapidly. Pasturage is plentiful. Citrus fruit trees are in unusually good condition and full of blossoms. Apricots are in full bloom and give promise of a large crop. The honey outlook is encouraging, as wild flowers are very abundant.

Eureka Summary.—Rain practically put a stop to farm work; continued rainy weather will prevent the formation of fruit, but with favorable conditions crops of all kinds should be the largest for several years.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, March 29, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	....	.....	57 72	38 31	..	..
Red Bluff	1.73	31 18	28.58	22 22	64	38
Sacramento	.43	18.49	15.82	16 68	64	46
San Francisco	.54	20 05	19 00	20 01	62	46
Fresno	T	9 96	6 71	7.51	72	38
Independence	T	3 02	2.57	3 33	72	34
San Luis Obispo	.32	19.56	13 82	18 03	70	46
Los Angeles	.00	17 84	7 75	14 56	74	46
San Diego	.00	13 46	4 13	7 26	68	48
Yuma	.00	8 58	0.94	2 78	86	50

CEREAL CROPS.

Is Gluten Content Affected by Method of Harvesting?

To the Editor:—I send you some articles from one of the large manufacturers of self-binding reapers. We in Arizona would like to know if the facts justify the statements made in regard to the much higher gluten content of wheat cut with a binder. We would also like to know if it will make any difference on barley. It seems to me this matter is important enough to receive a thorough discussion from people who have no axe to grind.— J. A. Ream, Arizona.

That is just the thing we would like to know in California, and it is probable that the investigation for which an appropriation has just been made by the California Legislature may include tests of the two methods of harvesting as affecting the composition of the grain—both wheat and barley—for they would probably both be affected in the same way, though it might not be equally of advantage as the grains are used for quite different purposes. We quite agree with our Arizona subscriber that the subject should have wide discussion by disinterested parties and all available facts brought to light. To start the discussion we give the statements which our correspondent kindly sends us.

Views of a Manufacturer of Self-Binders.—Wheat is one of the principal products of the Golden West, California having produced nearly 40,000,000 bushels of this golden cereal last year, and some sections of the State are particularly adapted to the crop. Owing to the evil results following the present method of harvesting, the question of adopting some more satisfactory method of cutting and threshing is absorbing the attention of the ranchers of that State, and this problem is the subject of much discussion at this particular time, as the harvesting season is fast approaching.

Every year the rancher has seen the profits shrink as a result of using the present cumbersome and expensive machines that cut and thresh in one operation, and the problem he has to solve is how to prevent fouling the land. The straw being scattered over the field, naturally all the foul seeds are blown over the field, and thus weeds come up from year to year, until the ground is so foul that it is necessary to summer-fallow before it is in condition for another crop. So great has this evil become that it has been the subject of discussion among wheat raisers in all sections of the State, who realize something must be done if this crop is continued.

With the combined machine it is absolutely necessary that the grain remain standing in the field until it is dead ripe. It is consequently exposed to all the strong winds which blow at this season of the year, threshing out the heads and scattering the grain, so that the enormous loss from this one cause alone is hard to estimate. And, furthermore, the berry shrinks and loses considerable in weight, which still further decreases the yield and the rancher's profits. This loss is great enough when the grain is cut when it is ripe, but if it is left to stand, which is frequently necessary on account of being obliged to wait for the machine, the loss in very much increased.

There is still another shrinkage in the rancher's profits which he does not lose sight of in the inferior quality of the cereal when it is cut with the combined machine. Every miller in California is authority for the statement that wheat is becoming very deficient in gluten owing to the methods of harvesting, as well as deterioration in soil. They claim that starch is the last principle deposited in the wheat berry, and if the starch deposit can be arrested, while cutting when in the soft dough, a much better and more glutinous wheat is the result; and if the grain could be cut in that manner for a number of years, there would be a wonderful improvement in the seed.

How to remedy these evils is a serious question that is being debated by every California rancher who is raising wheat. They are being convinced that there must be a very radical change in the method of harvesting. Land is becoming so foul that it will be necessary to cut the grain while still green, and while the berry is still in the dough, in order to arrest the growth of weeds, and they are turning their attention to the Eastern method of harvesting with the self-binder. By using the binder the grain is bound in bundles and all weeds are cut and bound with the wheat, and when threshed the foul seed is deposited in the straw pile in one place, and not scattered over the entire field as it is with the combined machine. It is a fact that this problem of weeds does not disturb the Eastern farmer who cuts his grain with the binder.

Among the other great advantages of harvesting with the binder can be mentioned the saving by cutting the grain before it is quite ripe, and getting it in the stack before the winds have an opportunity to thresh it out and scatter the seed over the ground, thus greatly decreasing the yield. The yield can be still further increased by the additional weight of the grain when cut with the binder. All the sap in the stalk goes to the berry and thus insures a plump berry, and a good percentage of increase in weight over the berry threshed by the combined machine. The owner of the self-binder can go into his wheat field at just the right time when his grain is ready to cut, and is not obliged to wait until the combined machine can reach him.

The quality of the grain being much improved, the millers will pay a higher price than they will pay for grain harvested by any other method. The straw also is of increased value on account of being cut green and put in the stack, and is in reality better than second-class hay.

This is a subject that should receive the careful consideration of every wheat grower in California, and every rancher can figure out the per cent of saving in his particular locality. To show the interest being taken, we print below the opinion of one of the leading millers in that State, as well as letters from ranchers and dealers.

Views of a Lassen County Grower.—I want to tell you that in all my experience I find that the only proper way to harvest grain is with the binder. I have insisted that my farming community put binders into the field in preference to the header, and they are slowly opening their eyes to the fact, and now I have binders mixed in very well in this valley. Where the binder works no grain is wasted, and the next season no weeds come up from seed scattered by the binder, for we cut the grain while the bottom and foul stuff is not ripe yet, thus preventing the weeds from being reseeded, and all the nice green bottom growth makes excellent feed for winter. Then it is so nicely cured in the shock before entering the stack that our mill men claim it makes much whiter and better flour.

Views of a Stockton Miller.—In my opinion, wheat harvested with the binder is far superior to that harvested either with the header or combined harvester, especially so in regard to the gluten content of the berry. Wheat in California is becoming very deficient in gluten, owing both to the deterioration of the land and the methods of harvesting. Scientists tell us that starch is the last principle deposited in the wheat berry, and if we can arrest the starch deposit—which cutting in a stiff dough with the binder does—it stands to reason that we secure a much better and more glutinous wheat. I also believe that this would tend to improve any seed if followed for a number of years, also that it would tend to destroy a large part of the foul seeds which are such a detriment to our wheat at present.

The subject is open for discussion. Let us have your views and experiences.

THE FIELD.

The Purposes of Summer-Fallowing.

To the Editor:—I note what you recently said in regard to summer-fallowing being for purpose of conserving moisture, and have no doubt this is so throughout most of California; but in the greater portion of Sacramento valley I believe our usual rainfall is amply sufficient to produce a crop of grain.

I think farmers in this vicinity summer-fallow principally for following reasons:

First, for purpose of cleaning land of oats, a natural and harder growth than either barley or wheat, and which outgrows and crowds out other grains. In fact the grain land, especially adobe land, in this section is saturated with oats and I have seen rich loam land plowed in spring twice, then plowed in the fall, after rains had brought up the oats, sown with 130 pounds wheat and then had more oats than wheat, only producing five to six sacks of wheat to the acre.

Second, we summer-fallow to enable us to put a larger area of ground in grain, as we frequently have winters in which rains come so that farmers are unable to work their land in the winter months and if their land was not summer-fallowed the previous spring and most of it sown in the fall, it would often be impossible to get their land in grain.

Third, to give the grain a longer growing season. Summer-fallowed grain, starting with the first rains, generally gets the benefit of some warm growing weather which gives it an advantage over winter sown grain.

Then most farmers have an idea that leaving the land in fallow adds a little to the fertility of the land through the agency of the air or at least puts it in better shape for the grain to draw the necessary sustenance.

These are the farmers' ideas of the principal advantages of summer-fallowing in this section of the country.

Mexican Peas.—As for growing a crop of Mexican peas in the winter for feeding off, my idea is that, although our summers are probably too dry for them, they might grow in spring and mature in early summer and make good dry feed. I was attracted to this question by reading the following account in a paper from the middle West:

This winter Colorado is feeding over 600,000 sheep. This is fast becoming an important live stock industry, and is centered in the San Luis valley, in southern Colorado, and the Ft. Collins district in the northern part of the State. The San Luis is a tableland valley, 7500 feet in altitude, situated between two ranges of the Rocky mountains, approximately 50 miles wide and 100 miles long, and surrounded by some of the highest peaks in the Rockies. The Mexicans have developed a very hardy variety of peas that seems to do remarkably well in this altitude, growing vines which run along the ground for a distance of 10 to 14 feet. These vines are loaded with pods bearing the nutritious pea. A few years ago some progressive ranchers brought a few lambs from New Mexico to feed on a field of peas. The lambs did well, netting the ranch men a good profit on the investment. This experiment induced others to try it and in this way a new industry came into the valley. Last year one ranch man and his two sons fed 24,000 lambs at a profit of $28,000. This year these three ranch men are feeding 40,000 lambs. Nearly all the San Luis ranch men sow their peas on grain stubble ground. When the peas are ripe they turn in their sheep to do the harvesting. At first feeders fed some grain with the peas, but, believing that it increased the cost of fattening without improving the quantity or quality of the mutton, they have ceased to use grain, fattening entirely on peas. Ranch men purchase, therefore, just as many lambs as they have peas to feed. They estimate from eight to fifteen lambs can be fattened from an acre. These lambs are purchased most largely in the southern part of the valley or in New Mexico. This year a few were procured in Idaho and eastern Oregon. This method of preparing lambs for market saves the expense of harvesting and marketing the pea crop, enriches the fields for next year's crop and lessens the expense of feeding the sheep. One man in this way can take care of a flock of several thousand lambs.

It has struck me that if we can use our surplus winter moisture in growing this crop, it will give feed and help the land by the waste of the legume crop as well as of the animals fed.

Peter Peterson.

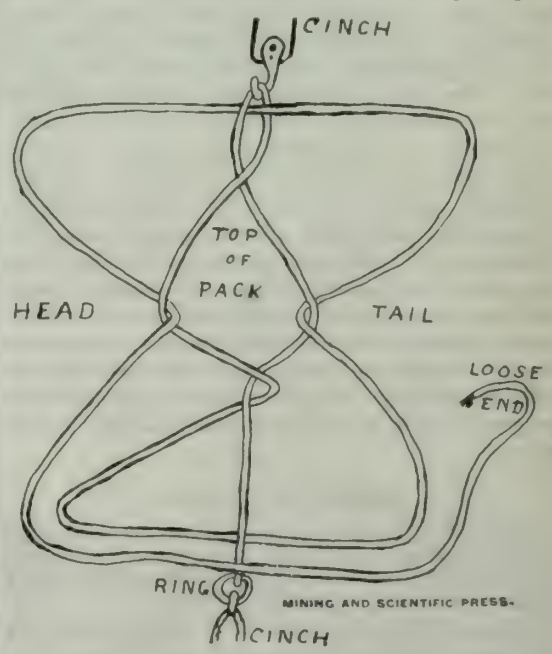
Salt Lake Ranch, Colusa county.

This is a very timely and interesting communication. We do not know what the Mexican pea is, but we understand that Mr. Peterson will try to get some from Colorado and experiment with them. If it is a good winter growing legume, it may be of great value in this State. If we can turn our bare fallow into a green crop fallow it will be a great advantage.

The Diamond Hitch.

Written for the Pacific Rural Press.

The great interest taken in traveling the past year and its increasing tendency throughout the West at this time with the coming of summer brings to mind the needs of the traveler who goes into the hills with pack horse or burro. To the uninitiated the packing of an animal for a trip of this kind seems a simple matter, but the writer, speaking from experience, knows that to place a pack on a horse, mule, or even on the humble burro, is no easy task—to secure it so that it will not plunge forward upon the animal's neck or over his head in case of a sharp descent, or ride on his rump in case of a stiff climb, or perhaps still worse, slip around under his belly, when a kicking performance usually follows which scatters the various articles of the pack along the trail or sends them rolling down the mountain side. There is no doubt that the best way to pack



The Diamond Hitch.

an animal in the presence of critics who are profuse with humorous but well-intended suggestions, is to allow them to do the job for you. It will pay to be considered a tenderfoot at the business for the lesson learned and the security afforded the pack, when placed by an experienced old-timer, but as this sort of aid is not always available the new hand should

learn to pack for himself. The most famous of all the devices known to packers is the "diamond hitch." It is an ingenious but simple method of securing a pack on an animal. The requisites are a good pack saddle provided with back and breast and straps and a strong rope. Two men are required to pack by this method or any other method where articles are not tied to the various projections of the saddle or carried in bags. In throwing the diamond hitch one of the men is known as the thrower, the other as the cincher, the latter standing on the right side of the animal, the thrower on the near or left side. After the pack saddle has been firmly adjusted and cinched tight the pack is temporarily adjusted and secured to the pack saddle. The thrower then tosses one end of a broad band (similar to a cinch, and provided with a ring at one end and a hook at the other) under the animal's belly, and the cincher catches it by the hook with his left hand. The thrower then tosses the end of the rope backward over the left shoulder of the animal and across his right hip.

The short end of the rope having been securely tied in the ring, the thrower takes the short end, which is secured to the ring, in his left hand and the long end in his right hand and casts a short loop over the back of the animal. The cincher grasps the loop and catches it in the hook, pulling on the long end to draw it taut. At the same time he throws the remaining long end of the rope over the animal's back and toward its head to the thrower. The thrower then draws the rope around the top of the pack, passes it over and under the part of the rope first thrown, then forward around the forward left-hand side of the pack and backward along the lower side of it on the same side toward the rear, around the lower left corner and upward where the rope is passed beneath that first thrown. From there it passes around the upper right-hand corner, downward under the lower rearward right-hand corner and along beneath the right side around the forward corner on that side, passing from thence upward around the upper forward right-hand corner where a second loop is made with the rope already in place, then downward on the left side beneath the lower left-hand forward corner of the pack and backward again to the rear, when the loose end must be securely fastened in the diamond formed by the rope at the top of the pack. The rope must be kept tight throughout the entire process and after passing the first loop must be tightly drawn.

The accompanying sketch will help to understand the manner of throwing the diamond hitch and its purpose. The only difference in the methods of different packers is that some start toward the rear end and some toward the forward end, but the result is the same. Considerable care and experience are required to get the pack secured by drawing the ropes as tight as possible. Pack animals soon become trained, and will deceive an inexperienced packer by holding their breath and swelling up until the pack is made fast, when they exhaust the excess air from their lungs and the entire pack is loosened.

New Book on Potato Growing.

It is only once in a while that one of the many Eastern books on agriculture can be strongly commended to California readers, because they are so full of prescriptions which do not suit our conditions. A book just issued on the potato, while it does not convey local points of practice, contains so much general knowledge drawn from recent investigations that we are disposed to consider it helpful to all who are growing potatoes in this State.

In the preparation of this work the author, Mr. Samuel Fraser of Cornell University, has drawn largely upon the reports and bulletins furnished by the American agricultural experiment stations during the past fifteen years, and upon any European data which he has felt to be of sufficient value to warrant their introduction. This, in addition to the author's wide experience in potato culture, both commercially and experimentally, in Great Britain and in this country, furnished excellent material and renders him well fitted for the work. The important problems in regard to soil arrangement, as subsoiling, plowing and fitting the land, constitute a chapter. The importance of a rotation of crops is shown, with an account of the value of cover crops in various places. The problems of manuring and fertilizing are fully discussed. The importance of the different ingredients in the plant's economy is shown, and the results which have been obtained in fertilizer trials are given. Attention is directed to the value of water and of barn manures, and the methods of purchasing, mixing and applying fertilizers are described in simple language. A chapter is devoted to the consideration of seed potatoes and the question of whole and cut sets, the best size of seed to plant, the best methods of planting and the influence of depths of planting upon the depths at which the tubers will form. The questions which arise in connection with the cultivation of the crop, and why we cultivate at all, are discussed. The book is illustrated by photographs and drawings, nearly all of which were made expressly for this work by the author. The book is published by Orange Judd Co. and can be ordered from the Pacific Rural Press at 75 cents per copy, postpaid.

FORESTRY.

Growing the Eucalyptus.

Continuing his comments on the eucalyptus in the El Cajon News, Mr. J. H. Dodson, to whose public service in this line of discussion we recently alluded appreciatively, discusses distances of planting, etc.

As to just how much space should be given a eucalyptus tree authorities disagree. A good deal depends on the situation and the kind of timber desired. As to how thick they should stand when matured sufficiently for use, Prof. McClatchie says: "If for fence posts, E. rostrata, E. tereticornis and E. corynocalyx may be planted 6x6 or 6x8; if for telephone poles, these species and E. citriodora should not be planted closer than 10x10, or they may be planted 6x8 and each alternate row cut out for posts or fuel, leaving them 8x12. For piles, E. globulus should be cut out to 12x12. For lumber, E. citriodora should be set as far apart as 12x12, and the faster-growing species should be at least 12x16 finally."

Now, while I think there can be no question but large trees will require at least as much space as is given them above, the question comes up: How are the trees to be treated while they are so small that they will not need all of this space? For example, if we plant 12x16 at the beginning, the trees are apt to grow crooked, to throw out a great many limbs along the sides, which divert sap from the trunk and which later are either pruned or perhaps die off of themselves, in either case leaving bad knots which will seriously injure the tree for use as lumber. Each acre of land will produce a given quantity of timber, and the object should be to have the greatest possible proportion of this timber in a good, clean, straight trunk, rather than in limbs. Then, too, there will come a time when it will be impossible to cultivate the trees; so that, if they are not close enough to cover the ground, muds and grass will take a part of the substance that ought to make timber. So that by all means the forester should see to it that his trees thoroughly capture and hold the ground while young. There seems to be no question that the best timber is raised from trees that have been thinned.

The forestry station at Santa Monica planted a number of half-acre blocks to different kinds of eucalypts for the purpose of testing this matter. Of course, it would take many years to thoroughly test it, but a little may be gotten from the year or two elapsed since the beginning of the experiment, because, as we all know, the first two or three years are the ones which practically decide the fate of the forest, of course, barring exceptional circumstances. A part of the trees in this experiment were set 4x4 and 6x6. At the end af the first year the height was about the same in both plantings, but the 4x4 were proving themselves nicely while the 6x6 were not. The 4x4 planting had also covered the ground thoroughly, so that no more cultivating would be required, while in the case of the 6x6 planting the weeds were growing sufficiently to make at least another year of cultivation necessary.

Just when thinning should begin in trees planted in this way will depend on when they begin to crowd each other too much and can be told by watching their growth.

If left to themselves they will settle the question by choking out a portion of their number when too thick; but in the struggle that ensues much time is lost, so that it is better to thin out just as soon as this struggle becomes at all serious, and, as eucalypts are hard to kill, the thinning process requires more labor than is needed with most other trees and is the principal objection to thick planting; so that it is often deemed better to plant farther apart and do more cultivating.

The Bureau of Forestry recommend planting blue gums and red gums 6x8 feet apart in the orange-growing belt of California, but in the arid portions of southern California they recommend planting sugar gums 4x4 feet.

It seems to me that in this part of the country, where the ground can be cultivated easily, it would ordinarily pay better to plant about 6x10, with the idea of cutting out the 6-foot rows when large enough for fuel or fence posts, thus leaving the trees 10x12 for the first thinning and 13x20 finally, in case it is decided to leave a part for large timber. While perhaps this method would be more satisfactory to most people, I do not think it would raise as good a lot of sawlogs as if the early planting had been thicker, for it is only by thick planting that crooks and knots can be avoided. But no matter how far the trees are apart in the middle of the grove, those growing along the edge should be thick enough to make a good windbreak, and everything possible be done to save every bit of the forest litter as a mulch and as a fertilizer, and the man who persistently burns up all the twigs and leaves that fall to the ground may have a much nicer picnic ground, but can never hope to get the best growth from the trees.

What I have recommended may be misunderstood, and where conditions differ so much as in California treatments must necessarily differ. The study I have given the matter has convinced me, however, that there is money to be made out of eucalyptus timber for any one who will put a moderate amount of labor and intelligence into the business and who is willing to wait a few years for returns.

SHEEP AND WOOL.

The Sheep Situation.

In an address before the New York State Breeders' Association, Prof. Plumb made the following terse remarks on the sheep situation:

Sheep business should be considered from a business end. Sheep are money makers when properly handled. For some reason that is difficult to understand the sheep industry in the United States has declined relatively in alarming proportions. There has been in the last thirty-five years a great falling off in the number of sheep when considered in the ratio formerly maintained as to population. In the early history of this country sheep were very important. They were scattered all over the New England hills and gradually extended in other directions. But while the population has materially increased, the number of sheep kept has not increased very much, so that in thirty years while the sheep population remains about the same, the human population has more than doubled. In 1870 there was one sheep to every man, woman and child in this country. In 1900 there was only about half a sheep to each of the human population. There has been a decrease in the number of sheep in other countries.

There is a notable decrease in sheep all over the world. Great Britain has met with a steady decline during the past five years. The same may be said of New Zealand, Germany and other countries. Australia has only a fraction of the number of sheep raised there five years ago. This is more directly owing to the result of the unprecedented drouth, but it adds to the general story of sheep depreciation. The only country that shows an increase is Argentina and this is owing principally to the frozen export meat trade that they have been industriously building up. The most enlightened and best civilized countries in the world are the countries which consume the largest proportion of domestic meats. Meat consumers are increasing, but the production of sheep again shows a decline when compared with the meat consuming nations and taken in connection with the population. For instance, the population of meat-eating European countries has increased in the last decade about 35%, while the number of sheep has increased only 20%.

All this goes to show the possible profits of sheep raising in the near future. There is probably more money made in feeding sheep in proportion to the money invested than in any other farm stock. That is, the profit from sheep is greater on each dollar invested than can be realized in any other stock farming operation. Actual reliable records show a per cent of profit that is akin to the "get rich quick" schemes that are occasionally exposed in the daily papers. By actual experience one lot of feeders made a profit of $1.18 per head, or about 42% on the money invested. This was clear profit. I might say here that in direct profits corn and oats probably are the best feeds, as corn and oats fed together combine to produce the greatest gain in weight, and this of course leads to the end desired. By a series of actual experiments it has been demonstrated that one acre of rape will sustain twelve lambs two months.

Jacob Zeiglar, who grows sheep on high priced land, says that his lambs and wool pay for the sheep, so that the money received for the sheep is clear profit. He reckons that the manure pays for the labor. Twenty-four scrub sheep were bought at $4.20 each, which, after being pastured and fed on corn and oats, were sold for $8.69 each. Feeding sheep on wheat land for five years in succession will double the yield of wheat.

In another instance fifty-four grade ewes, costing $167, dropped sixty-one lambs and the original ewes sold for $654, showing that money can be easily made on high-grade ewes when properly handled. There is more money in thoroughbreds, but grades are good. There is, of course, much more profit in breeding or feeding the best quality. The best money always is made by full feeding, but many men try to get along on the minimum amount of feed. It is a mistake. Good sheep pay the best. After the right quality is obtained, then liberal feeding of the right sort does the finishing.

In sheep raising dogs are the greatest nuisance. There are more mongrel dogs in America than in any other part of the world. It is a peculiar thing that American farmers either can not or will not, or they are too indifferent to grapple with this subject and find a satisfactory solution. The American farmer may be trusted to adjust all matter affecting his interest except that of the cur dog, and this has proved too many for him. If mongrel dogs were killed the sheep business would be much more attractive and interesting than it is. In my travels in Europe I

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have noticed a great many sheep of different countries and in different sections of England. I have visited some wild, desolate looking places where the houses were very poor, few and far between, but the country was overrun with sheep. I saw sheep everywhere, and I failed to find any damage inflicted by dogs. At the same time they keep dogs and numbers of dogs, but they are thoroughbreds and apparently intelligent enough to know that sheep should not be killed. It is my experience that thoroughbred dogs do not, as a rule, kill sheep.

THE DAIRY.

Feeds and Feeding for Dairy Cows.

The following are extracts from an address before the recent annual meeting of the Connecticut Dairymen's Association at Hartford:

As to value, feeds can be divided into different parts, and in this division I will give the values as I think they stand in importance. First then is the value of palatability, without which a food is valueless as a source of profit. Why is this so? Because a cow or other animal to yield a profit on food consumed must first consume enough to maintain her bodily condition, which we find is 60% of all she must take. So if the food lacks in any degree palatability, the profit on the feed will lack in like ratio.

We must select feeds that are so palatable that the animal fed will relish them and consume the 40% above the maintenance ration; if she only consumes one-half the 40%, we will have a loss of 50% of the required 40%. In this case, we cannot expect to receive for the food consumed more than one-half the profit we would if it were palatable, and even the per cent shown does not represent the full loss in the case of a cow, because if her feed does not please her she will not be content, and this condition will influence both the flow of milk and its per cent of fat, so we must give relish or palatability a prominent place in the value of feeds.

The next most important value we should consider is that of the manurial value after the herd has used what it requires of the nutrients contained in the feeds. We find on consulting the chemical analyses of the different feeds that the manurial value of some of them is nearly as great after passing through the cow as they were as a food. Cottonseed meal is the most striking example of this; up to within a few years the price demanded for the meal justified the Southern farmer in using the raw meal on his crops, and while a dairyman in Tennessee I bought the meal for a dairy feed, and it was classed as a fertilizer by the railroad companies, which gave a special rate on it to induce the farmers to use more of it.

The Texas station some years ago conducted some experiments along this line, and found that the recovered fertilizing value of a ton of cottonseed meal was as valuable after making a profit on it as a feed for a herd of dairy cows as the first cost of the meal. Bran, linseed meal, clover hay and, in fact, all of the feeds rich in protein are valuable as means of securing fertility for our lands. These feeds contain two of the elements our nitrogen has been added to an acre of land from the crop of alfalfa grown on it, and that sowing cowpeas in the corn fields at the last cultivation will add nitrogen to the soil at a cost of 1 cent per pound and even less, besides yielding a good amount of fall feed. In raising or buying feeds we should know all of the above values, so as to buy or grow them with the view of their greatest average value.

In buying feeds rich in protein we should know the digestible amount of nutriment per 100 pounds, then we can at once figure out the cost per pound, and in this way we can readily know which feed will be the cheapest for us to buy, providing the other values spoken of before are in evidence. It often happens we can well afford to dispose of some of the farm grown grains and buy others cheaper for the purpose intended. The oat crop at the present price has a protein content that costs us 11 cents per pound, but if we sell them we can take the money and buy cottonseed meal or some of the glutens, in which the protein content will not cost us more than 4 to 5 cents per pound.

The care of the cow is very important; feeding without care is fruitless. The greater the care the greater the profit on foods consumed. A stable in winter that is frost proof must be provided; to be frost proof does not mean an expensive one. A rough board stable can be made over into a comfortable one with the outlay of a few dollars expended in heavy tarred paper and window sash. Sunlight has its place in the economic production of milk, just as well as either the feeds or the temperature. One would think to see the many dark stables that sunlight had a bad effect on a herd of cows; let it in, buy twice as many sashes as you first intended to, then send the hired man back for as many more. You cannot spend your money in a better manner.

After the stable comes the care and system. Have a time for all of the stable work, and do it in time, milk on the stroke of the clock, summer and winter, twelve hours apart, 365 days in the year. To the dairyman who has kept an accurate record of the individual dairy yields of his cows, this does not seem to be a valuable matter, but in my own experience of keeping individual records for the past twenty years, I know this is a matter we as dairymen cannot ignore. With the system of feeding and stable management, we must know what every individual is capable of doing, both as to feed consumption and milk production, and in order to do this, we must keep a record of the milk yields of each cow every day. We will learn how to feed and what to feed, and at the same time will soon learn the capacity of each cow, and the profit or loss she is making us. From these records we can not only select our feeds, but also know the cows that are not profitable and weed them out. In this way our herd becomes more profitable each year.

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Agricultural Review.

Alameda.

HAIRLESS CALF.—Alameda county can now boast of a hairless calf. The freak of nature was ushered into the world a few days ago on the Harris ranch at Pleasanton. The mother of the freak is an ordinary looking cow belonging to Deputy District Attorney T. W. Harris. From head to foot, with the exception of the tip of the tail, the calf has not a single hair and its skin is almost snow white. There are a few stray hairs on the end of the tail. Harris has not decided what he will do with his freak.

Contra Costa.

ASPARAGUS GOING EAST.—Oakland Herald, March 23: On Thursday last the first shipment of asparagus was made from Antioch. It was contained in six crates, the asparagus being in bunches, carefully packed in damp moss, and its delivery in New York and Boston in good condition is guaranteed by the Wells-Fargo Express Company. From now on the shipments will increase in volume. Hitherto the shipments of asparagus have been made from Haywards, the output from the islands being controlled by S. C. Meek & Co. This company has erected a canning plant at Antioch for putting up the asparagus that cannot be marketed while fresh. As soon as the packing plant is opened seventy-five people will be employed.

CONTROLS FRUIT SHIPMENTS.—During the fruit season last year the experiment of shipping Sacramento river valley fruit via Antioch was tried and found to work successfully. About 500 cars were sent out last year, but this season's operations will be carried out on a larger scale. Boats have been chartered to bring the fruit to Antioch from the valley. These boats will arrive here at three or four o'clock in the morning and the fruit will be at once transferred to cars in waiting. As soon as the cars are loaded the train will leave the station. If the present schedule is carried out, a special train will leave here at nine o'clock each morning, and fully 1000 cars will be shipped from Antioch during the season.

Fresno.

OUR BEAUTIFUL WILDFLOWERS. — Sanger Herald: The pupils of a country school in this county not long ago collected 219 kinds of wildflowers on the plains surrounding the schoolhouse. A botanist could probably find twice as many; and a collection for the Lewis & Clarke Exposition might be made in this county that would open the eyes of the ordinary mortal.

Humboldt.

CREAMERY PRICES. — Arcata Union, March 18: Creameries in the Eel River valley paid this month as follows for butter fat: The reason that so few names appear is that a number of them have closed down during the past month. The price paid by the Central creamery, of which Mr. Jensen is the manager, offers a reason for there being fewer creameries in Eel river than heretofore. Capitol, 28; Crown, 28; Eel River, 28; Ferndale, 26½; Grizzly Bluff, 28; Pioneer, 28; Central, 30; Cold Brook, 28½; Sunset, 28. Creameries in Arcata section paid as follows: Arcata, No. 1 and 2, Premium and Cauzza, which are under one management, 27; I. Minor, McKinleyville, and Peterson & Laurenson also paid 27.

Kings.

MORE HARVESTERS.—Hanford Sentinel: Frank Blakeley of Lemoore, we understand, has ordered four more harvesting outfits, which will make him five. These outfits cost $7000 each, and Mr. Blakely expects to cut 5000 acres of grain and thresh the same with each of his five machines. He also contemplates getting some transportation trucks, and at night he will hitch the traction engines to the trucks and haul the grain he harvests during the day to market.

Los Angeles.

ORANGE OUTPUT: Covina Argus: The Navels are overripe and are dropping badly. The market reports show a very large percentage of decay. The recent wind and rain has probably dropped as much as forty carloads of fruit in this district alone, but much of this was overripe and puffy and had it been packed would have rotted in transit, so the loss to growers from wind and rain is indeed very insignificant.

FEAR OVERPRODUCTION OF LIMAS.—A Ventura dispatch says: Owing to the rain, an abundant Lima bean crop is looked for from this section this season. The rainfall to this time amounts to more than 15 inches. A ranch owner says: "With favorable rains there promises to be more beans planted than ever before. If such is the case prices will tumble before harvest time. The Santa Monica country has gone wild on the bean question. The beans from there received the first prize at St. Louis and the people of that place have gotten the idea in their heads they can raise the best in the way of Limas. It is a fact that they have cheaper bean lands than the Ventura farmers, and if they do not have the yield on their lands that the Ventura farmer has, still they can make as much, for their rents are lower. My advice to ranchmen would be to put in fewer beans and more beets."

OLD SOLDIER INVENTS CLEANER FOR CHICKENS. — A Sawtelle dispatch says: J. Witherow, a member of the Soldiers' Home, has invented a machine which, he claims, will exterminate the chicken lice. It is a glass case about the size of a typewriter, into which he puts the chicken to be treated. Its head protrudes through a hole in the top of the box. A tight joint is made between the chicken's neck and the glass case by means of rubber. Connected with the exterminator is a gas pipe. When the chicken is properly packed, so as to prevent asphyxiation, illuminating gas is turned into the box, causing the lice to drop from the chicken. The chicken comes out unharmed.

Riverside.

SPINELESS CACTUS GARDEN.—Enterprise: Edward W. Gilmore of the contracting firm of Fairchild-Gilmore-Wilton Co. has become interested in the commercial experiments in spineless cactus that Dr. Arthur D. Houghton will soon begin at several desert points under the patronage of the Santa Fe Railroad. Mr. Gilmore offers Dr. Houghton the use of a large ranch, all fenced, at Victorville, a point on the Mojave desert, beyond the San Bernardino mountains, where the first experiments with the new cactus are to be made.

San Joaquin.

MEALFALFA MILL.—Lodi Herald: The mill of the Stockton Mealfalfa Co. is in operation. This product is selected California alfalfa hay, ground to a meal. The company has acquired the warehouses known as Frank E. Lane's, on West Weber avenue and West Main street, on the bank of Mormon channel. These warehouses cover more than the average block of 300 feet square and have a wharf on Mormon channel 100 feet long. In one of these warehouses the mill is located, but it is not open to inspection, because the machinery was specially designed for this company, which is the only concern to produce "mealfalfa," and has copyrighted that name to distinguish its product from any of the other few forms of ground alfalfa.

Santa Barbara.

WALNUT GROWERS BEING ROBBED.—Press: The walnut growers of the southern part of this State are being robbed wholesale, the stealings being sold as gleanings. The losses have been so heavy that the walnut associations have met to take steps to offset the evil and to bring the thieves to justice. It seems that there is a sort of organized robbery of fields by parties who know where to dispose of the nuts. After work has been completed the thieves go to the fields and take many bushels of the best nuts, on which they made handsome profits. Other methods are employed in securing the nuts. It is an easy matter to put sacks partly full in trees on the outer edge of the orchard, and while the daily work is in progress it is possible for one man to place several bags of nuts in good places. He can easily find them in the evening when he returns. Trees, in cases, are left by the pickers in parts of the orchard which are supposed to be thoroughly gone over—to be returned to after the owner of the crop has taken all of his nuts from the trees. The extent of the stealing is not definitely known, though it is estimated that thousands of dollars worth of last year's crop was shipped to Los Angeles and San Francisco and sold to dealers by parties who had stolen the nuts and stored them in their houses and barns, awaiting an opportunity to dispose of them at excellent figures.

Santa Clara.

HORSE SHAKES MAN LIKE DOG WOULD A RAT.—San Jose Herald: A big horse, grasping a man in his teeth and shaking him like a dog would a rat, was the extraordinary spectacle witnessed by several people at Schuetzen Park, on the Monterey road, recently. The unfortunate man was E. L. Coe. The horse, which is a beautiful stallion, was being carefully looked over by several horsemen, when it became unruly. Coe proceeded to chastise the animal, whereupon it struck Coe with its feet, knocked him down, and then picked him up with its teeth and gave him a general shaking. When it was seen that Coe was in its power several spectators picked up clubs to make the brute let go. One of the men hit the horse on the head with a club, causing it to drop Coe, but it immediately started to kick the prostrate man. Finally, however, he was rescued from his perilous position. And it is not expected that he will succumb to his injuries.

ACCIDENT FROM IRRIGATING MACHINE.—San Jose Herald: C. H. Clements, a former well-known attorney of San Jose, but now an orchardist near Sunnyvale, met with a very painful accident near his home, and had a very narrow escape from being killed. Clements, it appears, was operating an engine used for the purpose of irrigating. While in the pit his clothes got caught in the machinery, and they were nearly all torn from his body. He was thrown with great force and was in an unconscious condition for some minutes. On an examination it was found that his lower jaw bone was broken and he also received numerous bruises about the body.

Solano.

SUIT FOR HEAVY DAMAGES. — The farmers of Benicia district have instituted legal proceedings against the Selby Smelting & Lead Company for alleged damages to stock and vegetation caused by the fumes from its plant on the Contra Costa county shore. The services of District Attorney T. T. C. Gregory and Frank McGowan of San Francisco have been enlisted to fight the company, and there has been deposited the sworn testimony of prominent ranchmen and veterinarians concerning the alleged fatal effects of the sulphur and lead fumes on live stock. For an area of 15 miles from the Selby works the pasture lands have become arid and unproductive, while cattle turned out to graze on them die within six weeks. Horses seem to be the most easily affected, they at once commencing to "roar" and suffocate. Their lungs lose all strength, and after the first week or so it is impossible for them to travel 50 yards without falling.

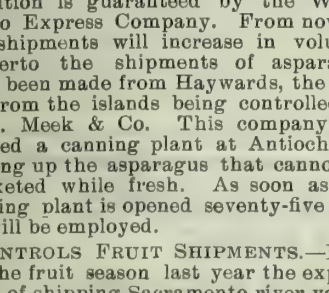
Stanislaus.

GLANDERS.— Modesto News: For months past horsemen have known that there are cases of glanders in the county, and that they have been making every effort to stamp it out. Recently two horses with well developed cases have been taken up on the streets of this city, immediately killed and the carcasses burned, in order to do away with the germs. Horsemen and stock owners generally have quietly discussed the proposition, and they admit that the disease is spreading in this county, and have offered several plans for its extinction. The general impression is that there should be an immediate meeting of the Supervisors and that that body should appoint an inspector or inspectors to at once visit all of the ranches in the county, inspect every animal thereon and in the event that they find any animals suspected of having the disease referred to, have power to cause the death of the animal and to destroy the carcass by fire.

Tulare.

THE CHICKEN BUSINESS. — W. A. Fothergill, who resides near Tulare, says he has about 700 chickens as a result of this season's hatch, and that he has 300 more which will come off in a short time. He says that before the season is over he will have in the neighborhood of 1500 chickens. This year he will weed out all inferior chickens, and next year will have nothing but thoroughbreds. The net profits from his fowls now amount to about $35 per month.

ENGLISH WALNUTS.—News: The trees on a thirteen-acre English walnut grove were planted 40 feet apart, and in many places the branches of one row overlap with those of the next. The trunk of one tree which we measured was 28 inches in diameter 4 feet above the ground. The yield of nuts from one tree last season was 400 pounds, or $40 worth.



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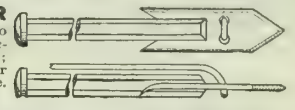
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The Home Circle.

The Elberta.

Last summer when we parted, sweet
Elberta!
You looked quite fair enough to eat,
Elberta!
Yet this for absence may atone,
Since last we met you've fairer grown;
Yes, though you have a heart of stone,
Elberta, you're a peach!

Your cheeks reflect the sunset glow,
Elberta!
Your rounded outlines allure me so,
Elberta!
Your breath is sweet as summer dew;
Your life blood richly flowing through
Imparts a matchless charm to you.
Elberta, you're a peach!

You've caused me many an aching pain,
Elberta!
I swore you never would again,
Elberta!
Your ripening beauty tempts like wine.
Yet though your charms were all divine;
Touch not your downy cheek to mine;
Elberta, you're a peach!

I would not mar your bloom so fresh,
Elberta!
Nor bruise the fairness of your flesh,
Elberta!
I promised my most worthy mate
That I would be most temperate,
And gaze on you with thought sedate;
Elberta, you're a peach!

I would devour you with my eyes,
Elberta!
But gazing never satisfies,
Elberta!
Soon in your flesh so rosy bright
I'll set my teeth most sharp and white.
For when you're peeled you're out of sight;
Elberta, you're a peach!

—Mabel Swartz Withoft.

Grandpa and the Monster.

Through the leaves and purpling clusters of the grape arbor the afternoon sun threw flecks of gold over the two women sitting sewing. A cicada shrilled in the locust tree by the kitchen pump. Odors of ripening fruit floated in from the orchard.

The elder woman dropped her sewing listlessly on her checked apron, and pushed up her spectacles with a little sigh. She was old—the mother of twelve, the grandmother of fifty. A scrap of lace hid the thinness of her white hair. Another scrap of lace hid the wrinkles of her throat. But her eyes were bright and shrewd, her lips firm and assertive. Grandma had ruled her house these fifty years and more.

"Yes, Malviny Ann," she confided to her daughter, a replica of herself at forty, "your pap's been mighty miserable of late. Not that he complains of any special aches, but he's that cranky!"

"They've been telling me over at Hebe's and Lou's that pap's growing childish of late," said Malviny Ann, handling her needle with rapid skill.

"Humph!" snorted her mother. "He ain't no more childish than I be. Ain't we both only seventy-two? Childish! I've known him since we both was seven years old, and he's just like he allus was when he got some foolish notion in his head."

"Anyhow, he's aged fearfully this year," said Malviny Ann, defensively. "He ain't his old cheery self at all. I've took notice of a lot of little peculiarities since I've been here visiting this time."

"When I married him at eighteen, I took notice o' them same identical peculiarities," retorted her mother dryly. "No, it's some notion he's got in his head."

"Why don't you ask him?"

"Much good that would do! He allus expects me to mind-read his grievances. I wish I could find out what's a pesterin' him. I ain't been so unhappy in years."

A tear rolled unheeded down the withered old cheek. The yi-yi-yi of a pup in sore distress suddenly sounded from the stables behind the arbor.

"That's your pap," exclaimed the old lady, listening sharply. "He's taking his spite out of the dog. Seems like he wants to lick everything he comes near. As a boy, he used to take his spite out by butting his head ag'in the wall. Folks laughed him out o' that. After he grew up I've wondered if he didn't go to the barn and butt his head in private."

"You've got more patience than I have," said Malviny Ann briskly.

"That I have!" said the old lady easily. You and Jim would live a lot happier if you had more o' your mother's kind o' patience."

The younger woman winced.

"I've never set myself up as any better than your pap," her mother went on. "Of course, I never butted my head, nor kicked the pup, but no doubt I done things just as foolish." She looked out unseeingly. The hum of a distant threshing machine filled in the pause. "I can't remember ever being so unhappy," she continued presently. "Less it was the time before you was born, when pap's cousin Ike visited us and gave me a silk dress. Your pap pouted over that six months before I found out what ailed him. Jealous? Of course! He couldn't bear to see me in a dress some other man gave me."

"Think of pap being jealous o' you!" cried the daughter.

"The green-eyed monster never pesters a man," said the old lady, smiling, "unless he's in love, so we was all the happier after I found out what ailed him. Dear! dear!" she sighed, "I'd give half the farm to find what notion's a worrying him now."

She sank down in her rocker, a listless heap, and drearily watched a gobbler strut past the arbor.

"This ain't sewing your Sadie's things," she said, rousing herself with an effort. "Fixing bridal finery allus takes me back to our wedding. My bridal bonnet cost my father $46. My green silk had what you call bell sleeves lined with white, and there was white silk fringe all trimmed over the skirt. Green was mighty fashionable for brides that year. The first Sunday there was five brides to church, and three of us had on green silks. Dear! dear! what have I done with my glasses?"

She shook her apron, looked under her chair and emptied her pockets, in vain search for them.

"There—on your forehead," said her daughter, laughing. "Say, ma, where'd you get them gold-rimmed?"

"Them?" said the old lady, proudly adjusting the spectacles on her nose—the nose of a commandant. "Them was Mr. Torry's gift to me for 'tending his wife through her last sickness. I'd worn them old steel bows till I was plum ashamed o' them, and Mr. Torry's gift come in right handy. She died lingerin' about a year ago. He was powerful grateful to me for my help."

"And pap's been jealous ever since!" said Malviny Ann with unusual penetration.

"Well! well! Do you reckon?" cried the old lady, a great understanding dawning in her eyes. "I've been an old goose never to think o' them glasses being his grievance! I was so vain over them gold rims that I never once dreamed o' him being jealous o' Mr. Torry. Here, Malviny Ann, you may have them for a gift. I'll get my old steel bows."

At supper that evening, grandpa sank moodily into his place.

"Let's eat and get the dread off, grandpap," said Sadie, his favorite granddaughter. "You always used to say that every meal, you remember? I ain't heard it once since ma and me come visiting this time."

The old gentleman tucked his long, white beard carefully into his vest, and took a scant sip of milk.

"I don't feel much like joshin' lately, Sadie," he answered gloomily. "Your grandma, though, seems to keep up her spirits."

He looked up at his wife with a bitter smile that faded into a gasp of curiosity. Something about the neat old lady held his attention.

"Where's them gold-rimmed glasses of Torry's?" he asked.

Steel-bowed spectacles sat at attention on grandma's forehead ready to fall into place at an instant's notice.

"Them?" queried grandma, with perfect composure. "I gave them gold bows to Malviny Ann. They didn't seem to fit lately. Besides, they reminded me too much o' that conceited Torry. I never took much to him, though most folks like him. Pass this choice bit o' chicken to your pap, Malviny Ann. I saved it just for him."

In the golden afterglow, burnished hummingbirds flashed among the orange blossoms of the trumpet creeper over the front porch. On the porch, swaying tete-a-tete, were two rocking-chairs. In one sat grandma, her withered cheeks the color of pale sweetbrier petals; in the other sat grandpap, holding grandma's hand, and cackling happily over anecdotes as old as their courtship.

Drink and Indigestion.

As has been said, man requires a certain amount of fluid, between two and three pints daily. Sometimes this is furnished by the food. All food contains some water, and many of the vegetables are little besides water. Most people do not drink enough water. Much has been said about the ill effects of taking too much water with meals. The danger has been exaggerated. Water promotes the tissue changes in the human body; men are like plants in needing a great deal of water to carry on the functions of the body and to make up for the waste which constantly goes on, especially in working or in hot weather inducing perspiration. The complexion and the whole skin is improved by drinking water. Lately much has been said about the free use of distilled water in promoting health and preventing the swelling of the joints from gout and rheumatism, both of which are due to improper assimilation.

That there was ever a time when tea and coffee were unknown seems well nigh incredible. But such is the case, and we doubt not it would be just as well for the human race if they had remained unknown. Both retard digestion, so the experimenters say. Coffee acts upon the heart, tea on the digestion and the nerves. Do not let your children use tea or coffee until they are grown. Alcoholic drinks in moderate quantities aid digestion, and in some respects are not as pernicious as tea and coffee, but it is a great mistake to have them on the table for daily use. If there is an inherited tendency to alcoholism, constant use will develop it, to the sorrow and shame of those concerned. — Health.

Craving for Stimulants.

That the blood normally contains stimulants, that these stimulants exercise a favoring influence on function, and conduce to, and may even be a necessary factor in the production of, the feeling of well-being, explains the widespread liking in man and beast for stimulating substances, says Dr. Harry Campbell. This liking, amounting often to a craving, is the expression of a great physiological principle. When there is perfect health, when the blood is well provided with its proper stimulants and not overcharged with depressants, there is no craving for extraneous stimulants, as alcohol, tea or coffee. But when it is defective with the one and surcharged with the other, then is left the desire for the glass of wine or the cup of tea. In order to obviate this desire we should seek to keep the body at the highest level of health. The more perfect the health, the more perfect will be the composition of the blood both in respect to physiological stimulants and deleterious toxins. A blood properly constituted in these and other respects will exercise a gentle stimulant action on the nervous system and induce a condition of mild physiological intoxication, which expresses itself in a feeling of well-being and happiness, a condition which cannot be bettered.

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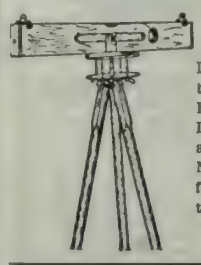
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Kitchen Furnishings.

The value of attractive kitchen utensils is not often appreciated. Housewives give their servants battered saucepans and tins, and expect them to keep these spotless and to take pleasure in cooking with them. A servant doing kitchen work generally takes interest in it if she has utensils in good condition to work with. One actually enjoys washing dishes in a brand new dishpan.

If the kitchen itself is a neat, picturesque room with snowy curtains at the windows, neatly oiled floor, clean, glazed paper on the walls and everything comfortable and convenient, almost any servant will feel an inspiration to keep it in that condition.

In furnishing a kitchen one may, on the other hand, make the mistake of having too many utensils and too many patented contrivances. The average servant girl, who is only used to the simplest and most ordinary utensils at home, will invariably leave the patented things on the shelf and use any common makeshift.

Though the kitchen should be simply furnished, there is no reason why the things a servant does use cannot be picturesque and in good condition. Nowadays there are many charming mixing bowls, etc., in blue and white earthenware, that look better on the shelves than the common ware, and are often just as cheap.

It is wise not to have too much kitchen china for the servants to use at mealtime. There should, of course, be a sufficient supply, but if there are too many to draw from the servants will never report breakages to the mistress, and it is said that some lazy servants will not take the trouble to wash their own dishes, but leave them in some out-of-the-way corner of the cupboard until the whole supply is used.

It is sometimes asserted that because a servant girl is a human being there should be pictures, etc., in the kitchen, a nice rug on the floor and a screen before the stove or sink. Any experienced housekeeper knows, however, that this is not practical, and no sensible servant will be bothered with things purely ornamental, always in the way and always collecting dust or grease. A kitchen is merely a workshop. After working hours are over the average servant would rather sit or rest elsewhere, and some place ought to be provided for her. Where there are several servants they can visit in the "servants' dining-room," and they should have the pleasure of making that as cosy as they wish.

How to Make Good Coffee.

Coffee is rarely prepared with the care and attention which is necessary to make it a popular stimulant. Even the berries require already a special treatment before they can yield the precious beverage. They ought to be washed with warm water and dried again several times before they are roasted. The roasting in itself is an operation requiring great caution. Berries which are roasted to a dark brown color have no aroma at all, but a pungent, burnt taste. The more the berries are crushed, the better and stronger is the liquor prepared therefrom. Well-made coffee extract, from which we can make a liquor more or less strong, as we like it, by merely pouring more or less hot water on it, is preferable to any other way of making coffee. There is a very simple way of getting at the nourishing gluten in the coffee, namely, by adding a small quantity of bicarbonate of soda. The gluten is easily dissolved in all alkaline waters, containing an excess of carbonic acid. For this reason the Dutch, and many coffee judges in Germany, boil their coffee in mineral water, and this is why we get such excellent coffee in certain cities or baths, because the wells there contain so much carbonate of soda. To prepare coffee in a chemically correct manner, put the ground coffee on the filter-sieve, add a pinch of bicarbonate of soda, and spread the coffee evenly, and press it down tightly. Cover with the larger sieve-plate, and pour a small quantity of boiling water over it, just to moisten the charge of coffee. Repeat the pouring of hot water in somewhat larger quantities, but always put the lid on the filter-sieve, and continue to do so until the pot contains an aromatic, oily, very dark extract. Then take off the funnel and dilute with hot water until the extract has the usual strength of a good coffee. This coffee has all the aromatic properties of the berry. It is nourishing, as it contains gluten, and a proper proportion of tannin, and is free from burnt and bitter substances.

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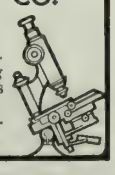
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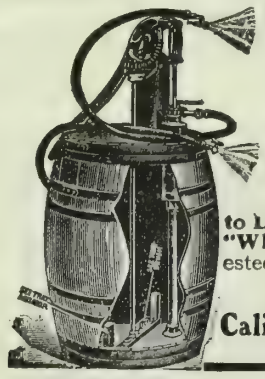
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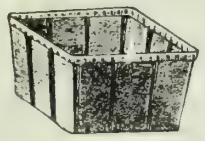
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Number of employes, 3200.
Total number of students and graduates, Feb. 1, 1905, 755,000.
Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
Cost of preparation of textbooks and instruction papers, not counting printing, revisions, etc., $1,000,000.
Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.

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J. W. HENDERSON, Superintendent,
1310 MARKET STREET, SAN FRANCISCO, CAL.

The Markets.

San Francisco Produce Report.

San Francisco, March 29, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 15½@1 14⅝	93 @ 91⅝
Thursday	1 13⅞@1 12	91¼@ 90⅛
Friday	1 11⅝@1 12¾	89⅝@ 90⅛
Saturday	1 12⅛@1 14	90⅛@ 90⅞
Monday	1 13¼@1 12½	90 @ 89¾
Tuesday	1 13 @1 11¾	90⅛@ 88⅝

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	48⅞@48¼	49 @48⅜
Thursday	47⅝@48⅜	48⅛@48⅜
Friday	48¼@48¾	48½@48⅞
Saturday	48¼@49	48⅝@49⅛
Monday	49 @48¾	49⅛@48¾
Tuesday	48¾@47¾	48⅞@48

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 44 @1 44½	$1 27½@——
Friday	1 44½@——	1 27¾@1 27¾
Saturday	——@——	1 28¼@1 28¼
Monday	——@——	1 28 @——
Tuesday	1 44½@1 44¾	1 28 @1 27¾
Wednesday	1 43⅞@1 43⅝	1 27½@——

Wheat.

Trading at present in the local wheat market is of slim volume, supplies being too light to admit of activity. Stocks throughout the United States are small. A grain man of prominence East is reported in the Chicago Inter-Ocean as saying that he looks for the last two months of this crop year to disclose the closest to exhaustion in wheat supplies that this country has ever known. He argues that in consequence of the great depletion in stocks much stiffer prices will be experienced during the next few months and that the new season will open at much the same stiff figures. There is nothing in the present state of the market to warrant anticipating any great boom in values. There may be temporary upheavals in speculative prices through efforts to effect a corner in options, but this speculative manipulation works in the long run no good to the producer, and if he indulges in the game he almost invariably gets the worst of it. All gambling propositions are for the purpose of fleecing the outsiders who may be induced to take a hand. There is nothing doing in charters in this market. Existing values here and in Europe would not admit of paying 12s. 6d. per ton for ships and owners are expecting about double this figure for carrying new crop wheat.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903–04.	1904–05.
Liv. quotations	7s0d@7s0½d	6s10d@6s-s-d
Freight rates	14½@16s	12½@-s
Local market	$1 37½@1 40	$1 42½@1 45

California Milling	$1 52½@1 60
Cal. No. 1 shipping, alongside	1 42½@1 45
No. 1 Oregon Club	1 42½@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.44¼@1.43⅝.
December, 1905, delivery, $1 27¾@1.27½.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.43⅞@1.43½; December, 1905, $1.27½@——.

Flour.

Market is moderately firm at current rates, quotable values being without change. Stocks in this center are not of heavy volume and are largely the product of outside mills. Inquiry on local account is mainly for most immediate needs. Demand for export is not active at full prices.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

There is not much barley of any sort now on market and as near a thorough clean-up as is possible is likely to be experienced before the close of the season. While the spot market is decidedly against buyers, the inquiry is almost wholly for feed descriptions on local account and partly to cover shorts of May option. Some barley is being brought from the Middle West, said to imported by shorts for the purpose of depressing the market. Considerable barley has been brought to this coast during the past few months on a special freight rate for shipment to the Orient, and at this special freight rate for export has been landed here at lower figures than barley could be purchased in the local market, but the quality was of a low grade and could not be used as a tender on contracts for No. 1 feed.

Feed, No. 1 to choice	$1 22½@1 25
Feed, fair to good	1 20 @1 22½
Brewing, No. 1 to choice	1 25 @1 30
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 22½

Oats.

The market for common qualities is slow and lacking in firmness. The absence of firmness is mainly owing to the recent landing here of a 3,000-ton cargo of common feed from the North which had been intended for shipment to Manchuria. High grade oats are scarce and no prospect of the market being burdened with stock of this sort during the balance of this season.

White oats, fancy feed	$1 55 @1 60
White, good to choice	1 47½@1 52½
White, poor to fair	1 40 @1 45
Milling	1 45 @1 60
Black oats	1 35 @1 70
Red, fair to choice	1 35 @1 60

Corn.

Spot supplies are of small proportions and are mostly Eastern product. Market is firm at prevailing values. Large White has been in fairly active request on Central American account. Not enough Small Yellow on the market to admit of wholesale operations in this variety.

Large White, good to choice	$1 40 @1 45
Large Yellow	1 37½@1 42½
Small Yellow	1 80 @1 90
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 37½@1 45

Rye.

Very little arriving from any quarter and not much in store here.

Good to choice	$2 00 @2 25

Buckwheat.

Market is almost bare of offerings from first hands.

Good to choice	$1 50 @1 57½

Beans.

Market has been rather quiet, the comparatively stiff prices lately asked for most kinds causing buyers to proceed very slowly. Holders have shown disposition to grant concessions rather than miss sales. Stocks of prime to choice beans are not heavy and are largely in second hands.

Pea, fair to good, 100 lbs	$3 00 @3 25
Small White, good to choice	3 25 @3 40
Large White	2 60 @2 85
Pinks	3 25 @3 75
Bayos, good to choice	3 00 @3 25
Red Kidneys	4 50 @——
Reds	5 50 @——
Limas, good to choice	4 90 @5 10
Black-eye Beans	2 60 @2 90

Dried Peas.

The market is practically bare of local product. There has been considerable demand lately from the South for peas for planting. Some Eastern peas are in the hands of local millers.

Green Peas, California	1 40 @2 05
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 40 @2 00

Hops.

The local market remains quiet, with no heavy quantities offering, but under selling pressure lower figures than have been lately nominally current would have to be accepted. Some holders are still looking for a more active demand and a higher market. If all the hops were pooled, prices might be crowded upward to a moderate extent, but that there will be any great shortage does not now appear probable. Last year's crop on this coast is now stated to have been 190,000 bales—California 63,000, Oregon 92,000, Washington 35,000. This is an increase of 10,000 bales over 1903 crop. Exports for the season to date show an increase of about 30,000 bales, but New York crop gave an increase of 25,000 bales and imports are about 3000 bales in excess of last year. New York advices report the sale of 200 bales of Eastern at 28c., one fancy lot at 29c., and 300 to 400 bales of Pacific at 25½c.

California, good to choice, 1904 crop	24 @26

Wool.

In this center it is the same old song, offerings here being too insignificant to admit of noteworthy trading. Whenever a lot puts in an appearance, however, no matter how small, brokers are after it, but are careful not to appear too anxious or to do any very rash bidding. Dealers are quietly operating in the interior and are doing very little talking here. The general tone of the market could not well be more healthy.

SPRING.

Northern, free	22 @24
Northern, defective	18 @21
Middle County, free	20 @22
Middle County, defective	17 @19
San Joaquin and Southern, free	15 @17
San Joaquin and Southern, defective	13 @14
Southern lambs, as to quality	13 @16
Oregon, good to choice	20 @23
Nevada	16 @22

Hay and Straw.

There is little of an encouraging character to report as to the general condition of the hay market. Business is largely in the best grades of Wheat hay, and of this description there is a surfeit of offerings, enabling buyers to be very exacting as to quality and price. Choice Tame Oat hay is in very light stock, but common qualities of above and Volunteer Oat are plentiful and drag at low prices.

Wheat, good to choice	$11 00 @ 13 00
Wheat and Oat	9 00 @ 11 50
Tame Oat, fair to choice	8 00 @ 10 50
Wild Oat	7 00 @ 9 00
Barley	8 00 @ 10 00
Alfalfa	7 00 @ 10 00
Clover	6 00 @ 9 50
Stock hay	6 00 @ 7 50
Compressed	11 00 @ 13 00
Straw, ₱ bale	25 @ 50

Millstuffs.

Quotable values for Bran and Middlings are without appreciable changes, but movement is slow at full figures. Prevailing values on Rolled Barley and Milled Corn are being well maintained.

Alfalfa Meal, ₱ ton	$21 00 @ 22 50
Bran, ₱ ton	20 50 @ 21 50
Middlings	25 00 @ 28 00
Shorts, Oregon	20 50 @ 22 50
Barley, Rolled	26 00 @ 26 50
Cornmeal	29 00 @ 29 50
Cracked Corn	29 50 @ 30 00
Oilcake Meal	32 50 @ 34 00

Seeds.

Market for Alfalfa is dull and weak, the season for sowing same being practically ended. Dealers are fairly supplied and do not care to make further purchases of stock which they may have to carry into another year. Not much Yellow Mustard on the market and no Trieste or Brown offering.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6½ @ 6½
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Stocks of amber grades are of fairly liberal proportions for this advanced date in the season, and include some recent arrivals from the Hawaiian Islands. Inquiry is slow and market lacks firmness. Choice water-white honey is in light supply.

Extracted, White Liquid	6 @ 6½
Extracted, Light Amber	4½@ 5½
Extracted, Amber	3¾@ 4¼
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Trade is slow. There are no shipping orders on the market at present.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Market for Beef has developed no quotable changes since last review, supplies proving ample for the immediate somewhat limited demand. Veal is in fair receipt and only most desirable sizes command top figures. Mutton is offering in sufficient quantity for present needs, inquiry not being very active. Receipts of Lamb are on the increase and the market in consequence shows an easier tone. Hogs were in a little better supply than for several weeks preceding, but were not quotably lower; most of the Hogs coming in are milk fed.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½@ 6
Beef, 2nd quality	5 @—
Beef, 3rd quality	4½@ 5
Mutton—ewes, 6@7c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5¾@—
Hogs, large, hard, over 200 pounds	5½@ 5¾
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	5 @ 7
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8½@—
Lamb, spring, ₱ lb	11 @—

Hides, Skins and Tallow.

Hides are in fair request at prevailing values. Pelts in prime condition are readily placed at current rates. Tallow values are ruling steady.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@ 9½	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@ 9½	—@ 8½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@12½	—@11½
Dry Hides	—@18	—@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@——	
Horse Hides, salted, medium	2 75@——	
Horse Hides, salted, small	2 25@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3½	

Bags and Bagging.

Not much doing in this department. Asking prices are without noteworthy change. Holders of Grain Bags are not crowding stocks to sale.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6 @6½
Grain Bags, Calcutta, buyer June–July	6½@6¾
Wool Sacks, 4-lb	33 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

Market was rather lightly stocked most of the week with both California and Eastern poultry. Demand was fair and desirable offerings sold readily at fully as good figures as were quotable the preceding week. Inquiry was mainly for large and fat young fowls. Small Old Hens and Old Roosters were not much sought after.

Turkeys, Dressed, choice, ₱ lb	$ 21 @ 23
Turkeys, live gobblers, ₱ lb	18 @ 21
Turkeys, live hens ₱ lb	18 @ 21
Hens, California, ₱ dozen	5 50 @ 6 00
Hens, large	6 50 @ 7 00
Roosters, old	4 00 @ 4 50
Roosters, young (full-grown)	7 00 @ 7 50
Fryers	6 00 @ 6 50
Broilers, large	4 00 @ 4 50
Broilers, small to medium	3 00 @ 3 50
Ducks, old, ₱ dozen	6 00 @ 7 00
Ducks, large young, ₱ dozen	7 00 @ 8 00
Geese, ₱ pair	2 25 @ 2 50
Goslings, ₱ pair	3 00 @ 3 50
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	2 25 @ 2 75

Butter.

There was a fair shipping demand, mainly for 2-pound squares, and prices for same were better maintained than on much of the light weight butter. After May 19 all packages of butter over half a pound and under six pounds must have the actual weight printed or legibly marked on the wrapper or container in figures or letters or figures and letters not less than half an inch high, the last Legislature having made a law to this effect, the penalty being not less than $20 for violating the same.

Creamery, extras, ₱ lb	24 @25
Creamery, firsts	23 @24
Creamery, seconds	23 @23
Dairy, select	23 @24
Dairy, firsts	22½@23
Dairy, seconds	21 @22
Mixed Store	18 @20

Cheese.

A good shipping demand for flats has kept stocks down to small proportions and desirable qualities have met with a tolerably firm market. Young Americas are in fair supply and not very active request. Eastern cheese are in light stock and stiffly held.

California, fancy flat, new	12½@—
California, good to choice	11½@12
California, fair to good	11 @11½
California, "Young Americas"	11 @13
Eastern	16 @17

Eggs.

Arrivals were liberal and there was little other than local demand. Large quantities had to be placed in cold storage. There was some speculative buying for the ice houses, mainly within range of 16½@18c, the latter figure for select ranch. Sales over 18c were the exception and mainly in a small way for extra choice going to special custom. Store gathered eggs running large as to size were more difficult to obtain at 16½c than were ranch eggs at 17½c, the quality of store eggs being now good.

California, select, large, white and fresh	18 @19
California, select, irregular color & size	16½@17½
California, good to choice store	16 @17
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables.

Asparagus was in fairly active request, both canners and shippers being in the market, and prices were maintained at about same levels as preceding week. Tendency on Green Peas was to easier figures, although receipts of choice were not heavy. Choice Tomatoes were scarce and brought good prices. Rhubarb was in liberal receipt. String Beans were more plentiful. Egg Plant and Peppers were in light supply. Onion market was quiet; 3,840 crates arrived from Australia and New Zealand.

Asparagus, No. 1 to choice, ₱ lb	5 @ 6
Asparagus, No. 2, ₱ lb	4 @ 4½
Beans, Lima, ₱ lb	— @—
Beans, String, ₱ lb	8 @ 12½
Beans, Wax, ₱ lb	— @—
Cabbage, choice garden, ₱ 100 lbs	50 @—
Egg Plant, ₱ lb	12½@ 15
Garlic, ₱ lb	5 @ 10
Mushrooms, ₱ lb	— @—
Onions, Yellow Danver, ₱ ctl	3 00 @ 3 25
Peas, Green, ₱ lb	2½@ 5
Peppers, Bell, ₱ lb	— @—
Peppers, Green, ₱ lb	12½@ 17½
Rhubarb ₱ box	40 @ 90
Summer Squash, small box	1 25 @ 1 50
Tomatoes, Los Angeles, ₱ box	1 25 @ 1 75

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market was not heavily stocked with choice to select Burbanks and comparatively good prices were readily realized. Common qualities were plentiful and met with slow sale. New potatoes were in moderate receipt and not very active demand at full figures.

Cal. Early Rose, ₱ cental	— @—
Salinas Burbanks, ₱ cental	— @—
River Burbanks, ₱ cental	40 @ 85
River Reds, ₱ cental	65 @ 85
Oregon Burbanks, ₱ cental	1 00 @ 1 55
New Potatoes, ₱ cental	2 50 @ 3 00
Sweet Potatoes, ₱ cental	— @—

Fresh Fruits.

Apples were in fair supply and not very active demand. There was no particular change in the quotable range of values, but for other than choice to fancy the market was unfavorable to sellers. For

cooking apples there was little inquiry. Strawberries were on market from Watsonville, Palo Alto and Los Angeles. From the latter point they were of the Brandywine and Excelsior varieties and sold mainly at 12½@20c. per small basket, with quality fair. Malindas from Watsonville brought 75c.@$1 per drawer, and Longworths from Palo Alto 75c.@$1.50 per drawer.

Apples, fancy, ℔ 50-box	1 75	@	2 25
Apples, good to choice, 50-lb. bx	1 25	@	1 75
Apples, fair to good, ℔ box	75	@	1 25
Apples, Lady, ℔ box	—	@	—
Persimmons, ℔ regular box	—	@	—
Strawberries, large, ℔ chest	—	@	—

Dried Fruits.

Movement is very fair for this advanced date, especially when the light stocks of most kinds are taken into consideration. The market is in the main firm, particularly so for good to choice Apricots, standard Peaches and high grade Pears, these being in very light supply; in fact, of select Pears there are practically none offering. There are few Apples, and buyers in quest of same find it necessary to pay tolerably stiff figures. Prunes of the middle sizes are still obtainable at low prices, but there are a few large or small Prunes left, and for choice large the market is firm. The steamer Senator, sailing for British Columbia since last review, carried 83,400 lbs. dried fruit, including 68,130 lbs. Prunes, 34,375 lbs. of the latter being for Winnipeg. The steamer City of Puebla, sailing Saturday last, also for British Columbia, carried 34,700 lbs. Prunes and 6250 lbs. other dried fruit.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	5½
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	10	@	12
Apricots, Royal, good to choice, ℔ lb	8½	@	9½
Apricots, Royal, fancy	10	@	11
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	8	@	8½
Peaches, unpeeled, fancy to extra fancy	9	@	10½
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	8	@	10½
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes, 1½@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1⅝@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½	@	4½
Apples, quartered	3½	@	4½
Figs, White, in bulk	2	@	2½
Figs, Black	2½	@	4

Raisins.

Market is quiet at quotably unchanged values. Offerings mostly common qualities. Shipments the past week include 9,500 lbs. by steamer to British Columbia.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4 crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3¼	@	3½c
3-Crown Standard	3¾	@	4 c
4-Crown Standard	4¾	@	— c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4⅞c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Oranges were in heavy receipt and much of the fruit was in poor condition, having to be overhauled and losing heavily from decaying stock. Sound Oranges were in good request and prices for same well sustained. Choice Navels of the smaller sizes were most sought after. Lemons were in good supply and demand rather light. Lime market was quiet at unchanged figures.

Oranges, Navels, choice to fancy, ℔ bx	1 50	@	2 00
Oranges, Navels, fair to good, ℔ box	1 00	@	1 25
Oranges, Seedlings, ℔ box	1 00	@	1 25
Oranges, Cal. Tangerines, half box	1 00	@	1 50
Oranges, Blood, ℔ box	—	@	—
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ℔ box	1 50	@	2 50
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

In the Almond market there is little other than asking figures upon which to base quotations. Some movement in soft shell Walnuts, but at slightly lower figures than lately nominally current.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

The wholesale wine market is not showing much life. Dry wines of last vintage remain quotable at 14@17c per gallon, San Francisco delivery, but there is very little wine now offering from first hands which in a regular way will command top figures. Sweet wines of 1904 are obtainable at 25c per gallon in bulk at wineries, or at 27½c per gallon delivered in San Francisco, with inferior stock offering at lower figures. The steamer City of Panama, sailing Saturday, carried 32,636 gallons, including 27,904 gallons for New York. Receipts of wine at San Francisco last week were 265,450 gallons, and for preceding week were 284,850 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	90,145	3,472,387	4,266,935
Wheat, ctls	27,510	2,357,238	1,851,873
Barley, ctls	86,256	3,038,409	4,897,437
Oats, ctls	6 873	789,024	795,603
Corn, ctls	3,020	162,737	126,536
Rye, ctls	16	45,770	45,134
Beans, sks	8,652	570,870	654,849
Potatoes, sks	21,311	1,042 669	1,055,332
Onions, sks	1,872	110,589	129,819
Hay, tons	1,999	143,272	138,022
Wool, bales	1,010	43,094	37,704
Hops, bales	268	37,729	29,000

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	32,988	2,336,348	2,816,472
Wheat, ctls	386	801,753	830,795
Barley, ctls	64,457	1,805,224	3,892,580
Oats, ctls	470	75,942	18,936
Corn, ctls	1,690	81,513	15,590
Beans, sks	590	44,367	34,791
Hay, bales	3,246	201 517	196,943
Wool, lbs	....	830,690	1,848,923
Hops, lbs	16,138	347,217	566,338
Honey, cases	7	2,053	4,291
Potatoes, pkgs	746	93,817	89,778

Used Flint's Powders Twenty Years.

Boyd, Wis., June 13, 1904.
Dr. B. J. Kendall Co., Enosburg Falls, Vt.
Gentlemen:—I have used Prof. Flint's powders for twenty years and I have sold hundreds of packages by telling people about it—to try it once and they always use it. Yours respectfully,
CHARLES EAGLES.

EGG WITH THREE YELKS.—Grass Valley Union: An egg with a double yelk is quite common, but one with three yelks is freaky enough to send to a museum. This was the kind brought into town by John Phillips from his ranch below this city. At the time he had no idea of the contents of the shell, but brought the egg in to exhibit to his friends because of its immense size. When broken the triple yelk was discovered.

Boston, July 16, 1883.
Dr. S. A. Tuttle, V. S.—I have used your Elixir for colic, spavins, spinal meningitis and blistering; it will never change the color of the hair. And your White Star for old sores and galls, there is nothing I think as good in the market.
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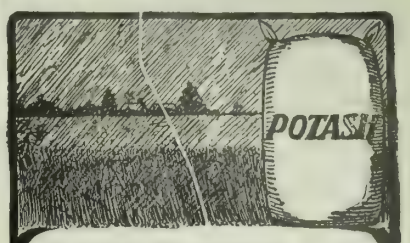
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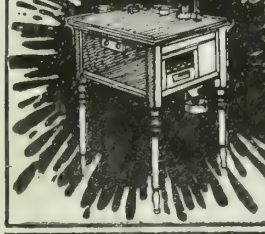
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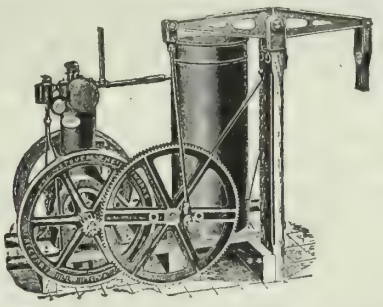
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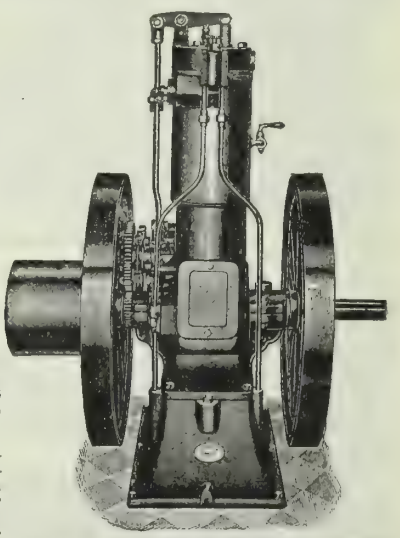
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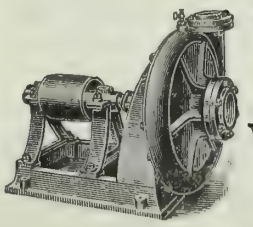


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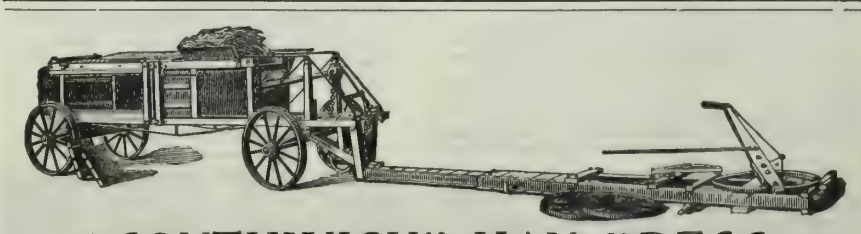
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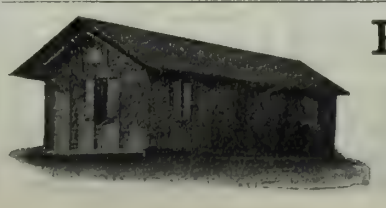
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AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M. June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

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GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

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PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

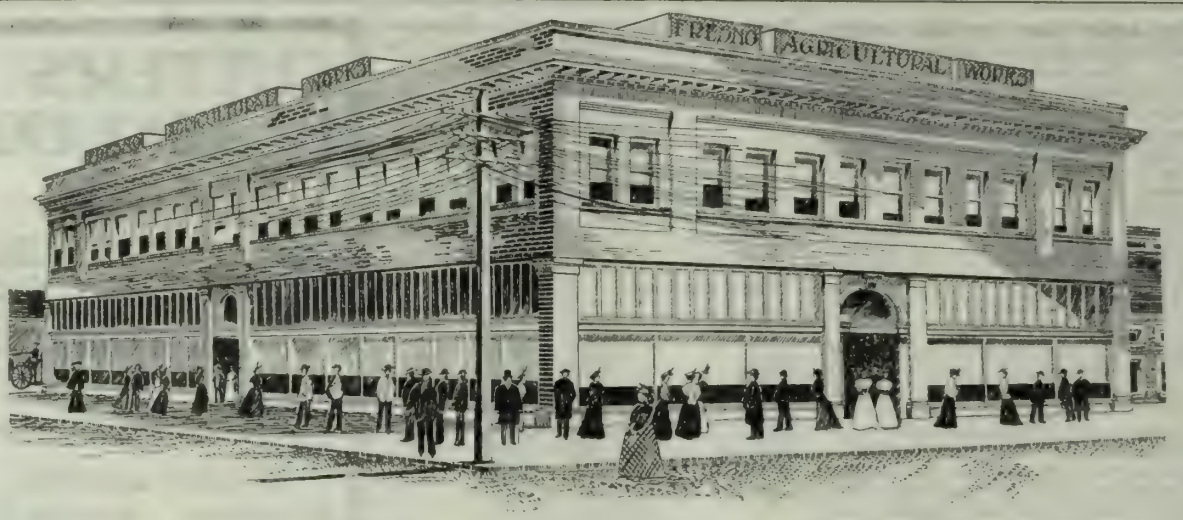
SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec ; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D. Magnon.



New Building Fresno Agricultural Works, Fresno, Cal.

Fresno County Granges.

Since the Pacific Rural Press has been very appropriately made the official organ of the State Grange, it becomes my pleasant duty to report for Fresno county. A few months ago Bro. John S. Dore, State Lecturer Tuck and his amiable and enthusiastic wife, the writer and others made an active canvass of West Park and Madison school districts for charter members for a Grange. Success attended the efforts and we have a good one of nearly a hundred members, with five initiations for the next meeting. Already the influence of the organization is felt. The Telephone Co. sent out a special messenger to one of our meetings to ask that we confer with their district manager concerning lower rates and improved service. Our standing committee is courteously received as it presses its requests. We are very fortunate in having a talented Worthy Lecturer, and a practical farmer, horticulturist, dairy worker and business woman in the person of Mrs. Dr. Sherman, formerly Miss M. E. Eshelman of the famous Minnewawa vineyard and stock farm. She has taken much pains in preparing a year's program of interesting and every-day topics for discussion. Next week we are to have an all-day session with basket lunch, in West Park church.

Bro. Dore and the writer held several meetings at Lone Star, and succeeded in organizing a Grange there with nearly seventy members, Bro. F. G. Dalton making an excellent Master. They meet on the first Tuesday night of each month. We expect to go to Selma shortly, and assist the Grange in a canvass for more members. We have promising correspondence with agriculturists in various other places not confined to this county, which will result, it is hoped, in the institution of more Granges. My wife and I united with the Order about thirty-five years ago, in Ukiah, Mendocino county. I forgot to mention that Bro. Dore was invited to speak before our large and influential County Teachers' Institute on "Agricultural Education in our Public Schools." He made a strong address and a fine impression, resulting in the passing of outspoken resolutions by the teachers. J. W. Webb,
Master West Park Grange, No. 366.
R. F. D. No. 5, Fresno.

Oakland Grange.

Oakland Grange tendered a farewell reception to Mr. and Mrs. Dexter Gilbert, Saturday afternnon, March 18th. The hall was tastefully decorated with smilax and lilies in honor of the event. During the afternoon the following program was rendered: Reading from Will. Carlton, by Mrs. Ella Dow; organ solo, Miss Anita Dewey; farewell remarks, Mrs. Ella Dow; vocal solo, Mrs. J. J. Roadhouse; responses, Mr. and Mrs. Dexter Gilbert; vocal solo, Mrs. J. J. Roadhouse; closing remarks, Mrs. S. J. Cross, after which all repaired to the banquet hall, which had been beautifully decorated, heliotrope being the prevailing color, where a dainty supper was served by the ladies. Nita.

Fresno Agricultural Works.

In common with other communities in the San Joaquin valley, the prosperous city of Fresno shows substantial signs of steady progress. In keeping with the importance of this center of so wide a sphere of busy life, the several establishments there supplying agricultural machinery show increase and enlargement. Pre-eminent among those Fresno institutions stands the Fresno Agricultural Works, now completing its new building on the site of the old. A view of the new establishment is given herewith, a good showing of the progress and prosperity of that section of the State.

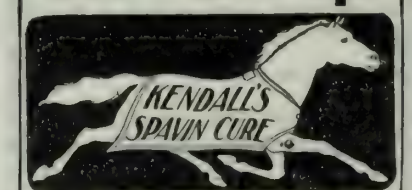
Live Stock Shows at Portland.

The dates of the live stock show to be held at the Lewis and Clark Centennial Exposition, Portland, Or., are: Horses, August 28th to September 8th (entries close August 1st); cattle, sheep, swine and goats, September 19th to 29th (entries close August 15th). Cash prizes are offered on all classes of registered stock and a one way freight rate has been arranged for on all railroads. The premium list will be printed soon and will be mailed to all who address M. D. Wisdom, superintendent live stock department, Portland, Or. There ought to be a fine live stock exhibit from California.

Uncooked Foods.

Those who are desirous of getting back to the very first principles, which must have prevailed before mankind learned the culinary use of fire, will be interested in a new book entitled "Uncooked Foods, and How to Use Them," by Mr. and Mrs. Eugene Christian, and published by Health Culture Co., 153 West Twenty-third street, New York. We haven't much liking for either the philosophy or material of uncooked foods and therefore can only advise those who have to use the publisher's address in farther pursuit of the subject.

Don't Give Up.



There is a cure for **Spavins, Ringbones, Curbs, Splints** and all other forms of lameness. It has been used all these years by the best horsemen, breeders and trainers and it **never fails.** That is their testimony on

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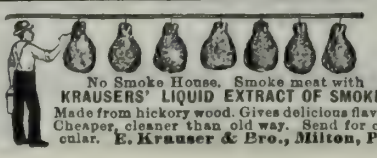
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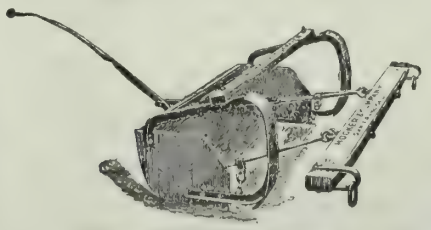
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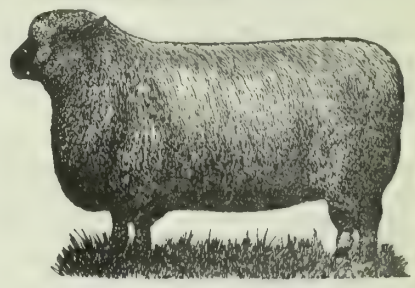
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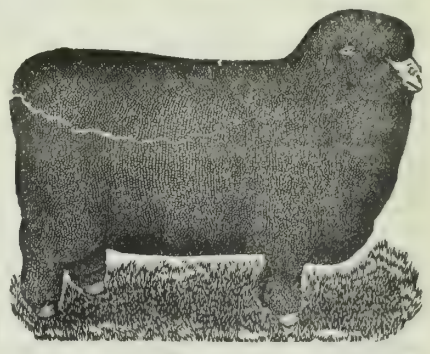
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THE VETERINARIAN.

Cow Should Be Tested.

To the Editor:—I have a young Jersey cow that will soon have her second calf. She is apparently healthy, but has had a cough for the last five or six months, and coughs most in the mornings. What is your opinion on it? Also, if a young cow has tuberculosis, would it have any effect on the milk? I have heard that it would not, unless the cow was six or seven years old.—Subscriber, Mountain View.

You should employ a veterinarian to try the cow with the tuberculin test. The danger in the milk differs in degree as to the part of the cow which is tuberculous, but there is always too much danger to warrant the use of milk from a cow condemned by the tuberculin test, unless the milk is effectually sterilized.

Contagious Abortion in Cattle.

Dr. C. L. Barnes of the Veterinary Department of the Experiment Station, Kansas State Agricultural College, writes as follows:

The term abortion is applied to the premature birth of the offspring before full term. It is sometimes known as "slinking," "casting," or losing," the calf. Abortion may be caused by drinking considerable ice-water, eating a large quantity of cold food (frozen roots or green vegetables covered with frost), exposure to rain or snow-storms or wading in ice-cold water, injuries to the abdomen (as being crushed by a gate, kicks, or being hooked), foods that are easily fermented, also insufficient or very innutritious foods; too close stabling, heavy milking, early breeding, inbreeding, stagnant drinking water, ergoted grasses and smut in the various grains, irritant vegetables, impaction of the rumen and constipation, severe constitutional diseases, direct irritation of the womb (as in the removal of the ovaries or death of the offspring), and irritation of the kidneys. Whenever abortion of cows cannot be traced to any of the above causes the contagious form of abortion is to be suspected.

Contagious abortion is quite common in this State and frequently causes considerable loss, not only from losing the young, but also from the fact that many of the cows that have aborted fail to breed again. Contagious abortion is probably caused by several different germs and is transmitted from one animal to another by contact, by means of the discharge from the cow that has aborted, the afterbirth, dead calf, and from bulls that have served cows affected with the disease.

Symptoms. — Cows may abort any time, but it usually occurs from the third to the seventh month. Occasionally the early symptoms pass unnoticed, but in most cases there is some heat and enlargement of the udder, the vulva is somewhat swollen, and there is a discharge of white or yellowish mucus which is not like the normal transparent material which discharges during heat. After abortion the afterbirth is usually retained, giving rise to a very disagreeable discharge which continues for some time.

Treatment. — All suspected cows should be isolated from pregnant ones, and should any cows abort, the offspring and afterbirth should be burned or buried deeply and the stable thoroughly disinfected by the use of lime on the floor, after all the litter has been removed and burned. Then the woodwork should be disinfected with corrosive sublimate solution, using it in the proportion of 1 to 1000. The tablets of corrosive sublimate may be secured at any drug store with directions for use. Ten days after the first disinfection with corrosive sublimate, all woodwork should be disinfected a second time. A week after the second disinfection the entire stable should be whitewashed.

Cows that have aborted should be washed out with a 1% solution of creolin or lysol, continuing this daily until all discharge has stopped. Pregnant cows should be given sodium hyposulphite once daily, in tablespoonful doses, as a drench. When cows abort in pasture, great care should be taken to burn the offspring on the spot where it dropped, and the immediate vicinity should be thoroughly limed.

As a precaution to prevent the spread of the disease in an aborting herd, it is well to disinfect the tails and also the vulva and immediate parts with a 5% creolin solution, to make sure of preventing the entrance of the germ into the womb. Bulls that have been with an aborting herd should not be allowed with healthy cattle; and to prevent their spreading the disease they should receive the same disinfection advised for cows. Cleanliness and the proper isolation and disinfection of cattle should be strictly adhered to in order to eradicate the disease.

ENTOMOLOGICAL.

The Apple and Its Chief Enemy.

The report of the Horticultural Commissioners of Santa Cruz county submitted last week has the following interesting statements:

The apple crop of 1904 came nearer being a failure than any other crop of fruit. This shortage was partly brought about by a cold rain just at the critical time, when the apple trees were in bloom and prevented the proper pollenation. Then, as a fitting climax to an off year, the county was visited by a hot wave of three days' duration, which burned large quantities of apples as they hung on the trees just ready to gather in September. Even those apples that were gathered and shipped to outside markets, at the time showing no evidence of sunburn, deteriorated in transit to the extent that many of them were either rejected or sold at a heavy discount.

Codlin Moth.—During the summer, owing to the very limited amount of fruit in sight, but few of the apple growers made any attempt to combat the codlin moth. This neglect, together with the limited number of individual apples on the trees, greatly increased the percentage of wormy apples. Altogether this has been the most disastrous year to the apple grower in the history of the fruit in that county.

Aside from the codlin moth, insect pests have done no great amount of damage to the fruit interests the past year.

The University professors are still carrying on the codlin moth investigations in Santa Cruz county with the purpose of determining on some remedy which has good killing powers and yet will not injure the trees.

Most remedies which have been successfully used elsewhere control the worms there, but seriously injure the foliage in the damp coast climate. When it is determined how to make an insecticide which will not break down or disintegrate under the trying coast fogs the problem is solved.

"We believe from the results of this year's experiments that the professors have finally determined upon the only safe remedy to be used under the conditions existing in our county," says the report of the commissioners. "This is an arsenic spray in the form of arsenate of lead. However, it will take another season's experimenting to determine the strength necessary to apply this material, as well as to determine the necessary number of applications.

"Great quantities of ladybugs have been introduced at various times to feed on the woolly aphis, green aphis and scale bugs. Foreign importations of parasitic insects in small numbers have been secured from time to time from our State Commissioner of Horticulture and turned loose in the orchards of various portions of our county to feed on injurious insects.

Codlin Parasite.—"We are pleased to announce that, through the courtesy of the State Horticultural Commission, our county has been highly honored by receiving a colony of Phialtes carbonarius, an ichneumon fly, a parasite of the codlin moth worm. This colony is the first liberated in the United States and is a recent importation from Spain. It is claimed that in the apple orchards of Spain, where this insect was discovered, the percentage of loss through worms does not exceed 5%.

"We have great hopes that this parasite may prove as beneficial here as it has in Spain; yet conditions existing in the two countries are so at variance that it is an experiment, and under the most favorable conditions it would be several years before this insect could increase in numbers sufficient to control the codlin moth.

"Since we have no assurance that this insect will prove a success in our county, we hope that its introduction will in no way be allowed to interfere with the investigation that is now being carried on in our county by the State University authorities."

Increase of Hop Acreage.

The Sacramento Union says that the growers of hops in that part of the State expect a prosperous season, as all the conditions appear favorable, and proceeds to show that the additional acreage this year is considerable. Following is a statement which shows increase as follows: Sacramento county, 441 acres; Yolo county, 285; Yuba county, 705; Sonoma county, 600.

At Nicolaus, Sutter county, there are 100 acres of old hops and very little new ground planted this year.

The acreage on the Riverside road which suffered submersion by the Edwards break will be restored to bearing this year, but it is not reckoned as new.

Roots wintered exceedingly well and the soil in every district is reported in fine condition. The season is fully one month ahead and the prospects are very bright for a full crop this year. There is no demand by buyers at present for spot hops or contracts, but growers are not anxious to sell the small supply now in their hands. Contracts have been made here recently at 18 cents, fall delivery. This is a splendid price, but most growers expect better figures, as last season proved a bonanza for all who held for the top of the market, which was reached at about 30 cents. Last year's crop in California was 63,000 bales of 185 pounds each, or 11,655,000 pounds. The new acreage will materially augment the output of the State.

A favorite method of handling the business, and one adopted by many growers in Sacramento county, is to contract for about half of the coming crop, say, at 16 to 18 cents, the current quotations, which contract insures them a fine profit on the year's operations. The grower takes a chance on the other half of the crop. If the price rises above 18 cents a pound he makes a still better profit on what he holds, and if the market breaks he still has enough on contract to yield a substantial return for the year's work.

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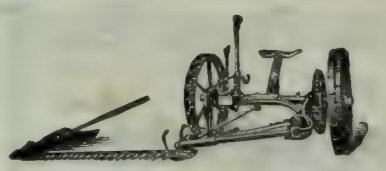
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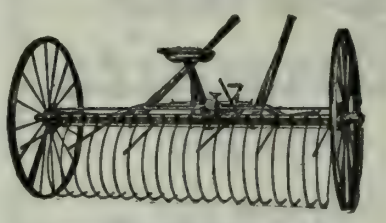
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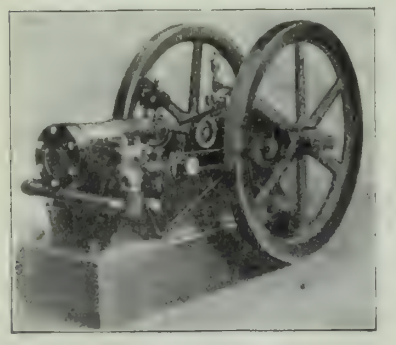
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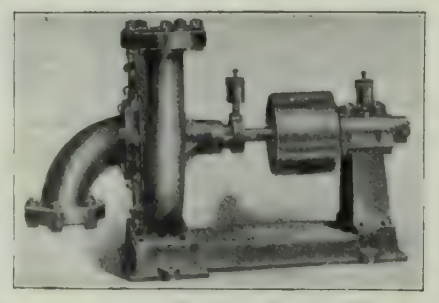
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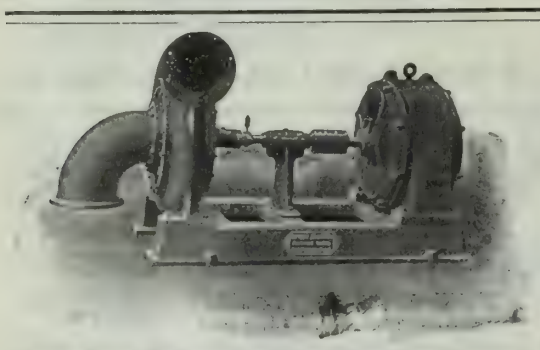
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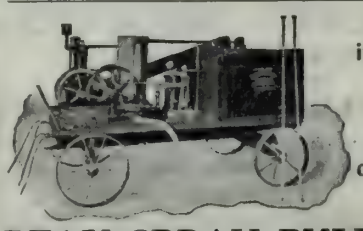
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 14. SAN FRANCISCO, SATURDAY, APRIL 8, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Handling Redwood Logs.

As a companion piece to the view of the choppers felling the giant redwoods of Humboldt county which was presented in our last issue, we have upon this page a group of pictures showing how the great logs from such trees are handled in the forest on their way to the mills. The Humboldt souvenir of the Eureka Times has some interesting notes on the evolution of methods which these pictures indicate. The more notable improvements that have been made in the half century from 1852 to 1903 may be summed up briefly as follows: In 1862 the circular saw was introduced; this brought the need of surer, quicker means of getting logs to the mill; the steam locomotive and railroad were put in operation in 1874; 1882 the steam donkey; 1886 the band saw, 1892 the bull donkey. Each advance seemed to solve and settle the problem of the need of better methods, but each in turn has developed accentuated needs in other directions, and now when it would seem that perfection had been so nearly reached, we are at this date promised new methods as important as any that have preceded in the electric saw for felling trees and sawing logs.

Redwood is a soft timber, yet among the many varieties of timber that have come prominently to the front in construction work, it is safe to say that none has developed so many and excellent qualities, or such a wide range of adaptability, as the redwood of California. In classifying lumber cut from redwood lands into three classes, the proportion would be as follows: The first quality would average 55%; second quality 30%; the refuse or third quality, 15%. Each one of these classes is often sub-divided into several grades. The third class is divided into two or three grades, and is used extensively for doors, windows, panel work, wainscoting and all construction in which short material can be used.

The market for redwood at the present time covers a wide field, besides the United States; cargoes of redwood lumber going to England, Scotland, Ireland, Australia, New Zealand, Sandwich Islands, Mexico and New South Wales.

The manufacture of lumber and its kindred products largely increased in 1903 over the previous year, and, in fact, over many previous years. This was due in great measure to the prosperous condition of the country at large, and the consequent demand for building material. Redwood is finding its way into the markets of the East, and the foreign demand is far beyond what it has ever been before. The total foreign shipments in 1903 amounted in round figures to 29,000,000 feet.

Notwithstanding the great increase in manufacture, the price of redwood lumber has steadily advanced, until now it is the highest it has been for many years. The mills are being improved and enlarged, and 1904 was expected to see an output 25% greater than that of any previous years. The influx of Eastern capitalists in the past few years, their purchase of plants and timber lands, their enlargement of the plants and preparations under way to build new ones account for a far larger product than ever before.

In the matter of testimony and proof as to the many merits of redwood, it would be impossible to give them. A few are appended which have served to crystallize the minds of the people upon the facts as they exist. It is certain that no timber has been so much relied on, or so carelessly used, with such general good results. In the hurry and rush of the wonderful development of the western shore, redwood has been used in every need in structural work; taken dripping with sap or water from the forest or pond, run through the sawmill, and hurried into place without a day's time in which to season, used for main timbers or for furnishing, it is only occasionally that a piece shows the effect of shrinkage upon becoming dry; and it takes paint and holds it equally well in any condition.



Handling Redwood Logs in the Forest—First, Oxen; Then Horses, and Then Donkey Engines.

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SAN FRANCISCO, APRIL 8, 1905.

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The Week.

The vernal vagaries of the present year continue, although in somewhat lessened degree. The winds seem still to prefer a northerly origin and the chill, with rather an excessive humidity, does not wholly please vegetation. Still improvement is noted and the unhealthy growth of fruit trees is becoming freer and surer. There has been some injury to early starting vines by frost in some districts, but tree fruits have largely escaped. The reduction of the crop by lack of pollination and by check of vigorous sap flow will be considerable with peaches and less with other fruits. It does not yet appear, however, that there will not be fruit enough on the whole to draw considerable money from the good prices which should prevail. The Eastern situation favors a larger movement of California fruit eastward than for several years, for the extreme low temperatures east of the Rocky mountains has wrought wide injury. Those interested in shipping are endeavoring to promote such movement by negotiations with the transcontinental lines for a rate of $1.25 per 100 pounds to all points in the country. This is the present rate to the Missouri river, and shippers wish to reach New York and Boston at the same price. This would certainly be of great advantage and tend to much freer and wider distribution.

Local spot wheat keeps up well and offerings are not large, while there is a good demand for choice milling. Eastern futures are influenced by suspicion of a corner in May wheat in Chicago. Futures here are quiet, with still firmer feeling in December wheat, which is higher to-day than formerly. September charters have been made here at 22s 6d to Cork for orders for wheat, and 23s 6d for barley, with a rebate on each of 1s 3d to a direct port. No clearances have been made this week. Spot barley is well maintained and firm. Eastern corn is lower, but white California is scarce and in demand for Central America. Rye and buckwheat are scarce and in good demand for seed. Lima beans are easier, others steadily held. Bran is in light stock and firm; middlings are slow and in fair supply. Hay is in bad shape except for fancy stable and common grades in excess with talk of a carry over. Meats are all as last week. Butter is lower; less is being shipped and the local demand is not active except for cooking butter, which is scarce and relatively very high. Cheese is firm, light supply and good demand. Eggs are held up by speculators buying for storage both here and in the country. Poultry is very firm, and likely to be so through the Easter and Passover period. Potatoes are quite firm for strictly fancy—others are begging. Oregon Burbanks have sold up to $1.60. Onions are higher and in few hands. Fancy apples are firm, but the demand is light. Choice oranges are in light supply and firm—others slack. Lemons are quiet and steady, with a fair movement. A few strawberries are arriving. There is a fair movement in dried fruits, even prunes being in better tone and going north by sea. Raisins are moving at concessions. Nuts are quiet and little doing. Honey is weak, and looking for new crop. Hops are quiet. Wool is strong. Local quotations are generally withheld, but the fact that one of the largest Montana flocks has sold to a Boston buyer its whole clip at 22½ cents prior to shearing shows where the wind is. Advance sales of California clips are relatively as high.

Moisture conditions in southern California can be inferred from the fact that the old talk about the insecurity of the Bear Valley reservoir is being freely indulged in. There has been no occasion for such talk for the last six years or more. San Diego reservoirs which have been dry enough to bore wells in their bottoms for the same period are filling, and, in short, the south is wet clear down to bedrock. This is delightful and long earnestly desired.

Speaking of water, it is interesting to note that Mr. C. E. Grunsky, whose appointment on the Panama Canal Commission was pleasing to Californians, has resigned and accepted a good place in the Arid Land Reclamation Service. We are glad of it, for though we are deeply interested in the canal, Mr. Grunsky has worked more in irrigation than in drainage and his time can be particularly well employed where he now is. It is not unlikely that he will soon be in California again, for the irrigation committees of the House and Senate expect to leave Kansas City June 1st to visit all the principal irrigation projects of the Southwest and West. A number of invited guests will accompany the committees, and the party will be accompanied by an official of the Geological Survey. It will be a good thing for these Congressmen to see what can be done by irrigation by seeing the progress in California and other newer irrigated States.

The Department of Agriculture at Washington has snowed itself under on the proposition to give away beneficent bacteria. The publication of the results obtained with pure cultures in inoculating leguminous plants has resulted in such a demand for this material that the facilities of the department have been taxed to their utmost, and for some time it has been impossible to meet the demand; in fact, the total quantity which could be prepared this season was promised early in February. The patent which the Department holds upon the method of growing and distributing these organisms was taken out in such a way that no one can maintain a monopoly of the manufacture of such cultures and so as to permit of its being taken up and handled commercially. The commercial product is being handled quite generally by seedsmen. This is the proper course. After the efficiency of these agents has been demonstrated there is no more reason why the Government should give away bacteria than biscuits. They are legitimate trade materials and should be handled by the trade. The experience in this matter is, however, one of the clearest demonstrations of the avidity with which the agriculturists take hold of a discovery of science as applied to their art. They are informed, awake and eager to advance rapidly as never before in the world's history.

Returning to the subject, recently mentioned, of proper grading of dirt roads as an escape from tremendous expense of patching ungraded roads, it may be remarked that the Missouri plan is commanding wide attention. The method consists chiefly in the use of a split-log drag, which is managed so as to move a little earth to the center of the road, which smooths the surface, and the roads may be kept in excellent condition during the severest weather. By this method the roadbed is kept so oval that mud puddles do not form, the water drains off and expensive repairs are unnecessary. The cheapness of the method has caused many to question its value, but a trial is so simple and the results so marked after it has been followed for a while that but few ever stop the system after adopting it.

QUERIES AND REPLIES.

What to Do With the Trees.

To the Editor:—I would like your opinion regarding our walnut trees, and also prune trees. They are all apparently healthy trees and about fifteen years old or less. The walnuts are uncertain bearers and the squirrels and jaybirds create havoc with the nuts. The prunes bear well, but the prices are ridiculously low. We have about 350 walnut and 650 prune trees. Don't you think it would be better to take them up and grow something else? Neither one scarcely does any better than pay expenses for cultivating, care, etc. We are located in the Santa Cruz mountains.—Reader, Corralitos.

Matters of policy in holding on to or letting go of particular crops, and the main question of whether a certain man should be a farmer or not, are all beyond the field which we try to cover in these columns. We can advise you to shoot jays and squirrels and protect your crops, and advise you also that the value of prunes is likely to increase, because the acreage is being reduced and the effort for better marketing is gaining, but whether you should change your crop or not, you must decide for yourself. It would be a question, of course, whether a man who allows himself to be chased out of one product by jaybirds and squirrels would succeed with another product, because every product has its own problems and difficulties, which must be surmounted and not escaped by running away—unless you decide to sell out and take up some line which appeals more strongly to your tastes and more fully enlists your talents. If you know something else better and can work with it better, it might be well to change, but there will be no advantage to you to change your farming to hay or chickens or cows or summer boarders unless you can meet the peculiar jaybirds and squirrels of each of those crops. You are up to a proposition which you must settle for yourself, much as we would like to help you.

Peach Mildew.

To the Editor:—Can you tell me what to do to prevent mildew on peaches and nectarines? It appears as patches on the fruit. Some years the above fruit is badly affected in that way here. If there is a remedy please give full particulars.—A Subscriber, Lassen county.

This sort of a wet chilly spring increases this mildew of the fruit just as it does the other fungi which we have been discussing, this and last week, as affecting the tree. Peach mildew is generally banished by the winter use of the lime, salt and sulphur which is effective at once against San Jose scale, peach moth and peach mildew. If you only have the last to deal with a good winter spray with the Bordeaux mixture, of which the formula is given in the Pacific Rural Press of March 11, page 158, and a weaker application which can be made after the leaves and fruit have appeared is given in Prof. Smith's article on another page of this issue.

The Peach Disease.

To the Editor:—I send you to-day some peach limbs that are affected with some disease that has killed all of the young foliage and some did not bloom at all. I have some almonds that the leaves are all falling from. The disease is only on the early peaches. Please inform me what it is and remedy through your valuable paper.—E. S., Davisville.

This is the same trouble to which we alluded last week, and of which an account by Prof. R. E. Smith of the University of California Experiment Station is given on another page of this issue. It will undoubtedly cause considerable loss this season, but it is not a "blight" like that of the pear. It will disappear as the season advances and most of the affected trees will recover a good appearance, though this year's crop may be destroyed. This course of the trouble has already been observed in some places in the valley whence it was first reported and where it is now disappearing.

About Fertilizers.

To the Editor:—Kindly answer the following questions through your paper:

1. How does the fertilizing value of alfilaria compare with alfalfa plowed under green?
2. How much is horse manure worth per ton (to be hauled 4 miles) in which there is a liberal quantity of planing mill shavings used as absorbent? Would it be better to rot the manure in a pile, with water, before applying to the land? The land is sandy. How

much should be applied to the acre for peaches?—Grower, Fresno.

The water content of alfilaria and alfalfa are shown by analysis to be practically the same, viz., 20%. This would also make them practically the same as to the amount of vegetable substance which each would return to the soil in the process of green manuring, but analysis also shows that the alfilaria contains 2.1% of nitrogenous material while the alfalfa contains 3.7%, which means that the latter is that much richer in the group of substances which are both most expensive to buy in fertilizers and generally most in demand in California soils. But beyond this is the fact that alfalfa has the power to seize these substances from the air, while alfilaria can only take them from the soil and return them thereto in a different form. There is still another gain—and that is from the decay from the nitrogenous root of the alfalfa, which is vastly more valuable than the root of the alfilaria. Add all these together and, so far as the plant food is concerned, the growth of alfalfa is out of sight of alfilaria as a valuable addition to the soil.

Horse manure, largely mill shavings, is of questionable value, and cannot stand the cost of a haul of 4 miles—and it is less valuable and more dangerous as an application to a sandy soil, which is probably too loose and coarse already. It is better rolled than fresh, but even then there would be a doubt as to whether it would be worth the work and water used in composting. Considering the character of the manure and the soil you mention, we should prefer to remain about 4 miles away from the whole proposition.

Use of Potash Fertilizers.

To the Editor:—Some of our orange growers in Sacramento and Placer counties are intending to use sulphate of potash on their orange trees for the purpose of getting a higher grade of fruit. The trees, as a rule, are thrifty and the foliage a healthy dark green; but, as you are doubtless aware, the fruit is coarse and runs to the unprofitable large sizes. We should be glad to have your valued advice as to what quantity you would suggest to be used on trees bearing two to four boxes per tree, and also when would be the best time to apply it.—T. J. F., Sacramento.

We can not give you a prescription for the use of potash on orange trees which will be much more than conjectural. There is no conclusive evidence yet that potash acts in the way you wish, although those who talk most freely about fertilizers seem disposed to credit it with that particular effect. The University Experiment Station has in progress at Riverside a series of experiments with different fertilizers which is to last for five years, and at the end of that time there may be more definite data from which to prescribe. There seems to be a common idea that potash should be applied in the autumn, with the idea of counteracting the effect of any excess of growth due to the use of nitrogen, and to act upon the orange tree just at the time when it should be restricted from indulgence in extra size and coarseness of fruit. If this reasoning is correct, you should make your application in September, because your oranges ripen rather early. For the size of the tree you indicate two or three pounds of sulphate of potash evenly scattered over the space supposed to be occupied by the roots, and not applied near the trunk, would be a good amount for experimental purposes. To get the benefit of this it would be necessary to apply in such a way that the potash shall be dissolved and carried down by the irrigation water. It is very important, of course, to have trees of the same kind, similarly situated out of possible reach by the fertilizer, in order to determine by observation whether any effect is produced or not.

Burbank's Smooth Cactus.

To the Editor:—I have just finished reading an article on Mr. Burbank's work, especially of a new thornless cactus, for which great claims are made. Would you kindly give me your opinion of this cactus through the Query Column of the Pacific Rural Press, and state whether you consider the statements overdrawn?—Correspondent, Cupertino.

Some of the accounts which we have seen might be considered overdrawn, so far as they convey the impression that Mr. Burbank is the originator of smooth cacti. This is not strictly true, first, because spineless cacti occur in nature; second, because spineless varieties have been developed in the south of Europe to get smooth fruits of superior size and quality. The originality in Mr. Burbank's work for smooth cacti consists in two other characters not contemplated by other breeders of them—first, extra hardiness to resist low temperatures by using Alaskan species in the parentage; second, the maximum of growth or size so as to produce immense amounts of food for stock without having to burn off the spines, as is now done from Arizona to Texas. Mr. Burbank's idea is to transform cactus deserts into grazing grounds by depriving the plants of their protective armament of thorns and spines or spicules. He has done this, but the anticipations of desert reclaiming which writers are freely indulging in are liable to be overdrawn unless he has proceeded far enough with his work to make his new varieties come true from seed. Of course, a desert set with smooth plants which are liable to produce thorny seedlings will revert to a desert of thorny cacti unless some one undertakes to destroy the seedlings and keep putting in cuttings of the smooth plants, and then the desert is no longer a desert, but a pasture field requiring constant attention. Under these conditions the prophecies about the value of the smooth cacti in reclamation enterprises seem reasonable.

Pruning Pears.

To the Editor:—I have a one-year-old P. Barry orchard. How much of the season's growth will I take off and shall I cut to inside buds?—W. S. D., Hawkes Bay, New Zealand.

The Barry with us is a fairly upright grower, and we find occasion on young trees to cut to outside buds to spread the tree a little. Later on it may be necessary to cut to more inside buds. At starting, we should remove about half of the length of the new shoots. These are only general suggestions—one really has to see the tree, because frequent occasions arise to depart from the rules.

The Pear Blister Mite.

To the Editor:—I have about 300 pear trees two years old, and most of them have red blotches on the leaves like the enclosed samples. Will you kindly tell me what the trouble is and how to remedy it?—Grower, Folsom.

To the Editor:—What is the matter with these pears? Please let me know.—Subscriber, Redding.

The pear leaves which you send show blemishes caused by the blister mite. This is a minute burrowing insect belonging to the same general group of insects as the red spider, but more minute and rather more difficult to kill because of its burrowing habit. The best treatment consists in thorough spraying before the growth starts with the winter strength of the kerosene emulsion. Summer treatment is probably only slightly effective, although the use of sulphur, as for the red spider, may accomplish something. Thorough treatment of these trees next winter along the line indicated should be arranged for.

The Sap Sucker.

To the Editor:—There is a little bird called the sap sucker that seems to be taking the very life right out of the walnut trees; they are just bored full of holes. Can one spray or whitewash the trees to keep them away? Yesterday I found a fine big tree that was bleeding most dreadfully right from some of the places caused by the birds.—New Comer, Tehama county.

The sap sucker is a woodpecker which should be watched for and shot. So far as we know, there is no other way of stopping his injury. Continual whitewashing might do it, but it would be rather costly to whitewash large trees as high as the sap sucker sometimes works. Probably the real injury will be much less than it now seems to you.

Grafting Vines.

To the Editor:—Can I plant St. George cuttings in nursery form, and root them; then next year leave them in the nursery and graft them, and the third year make a vineyard of them successfully? If not, what better way could I do the work at home?—A Reader, Cloverdale.

Yes, you can do it that way, or you can take up rooted cuttings which have grown well and bench-graft them and plant out again in nursery rows, giving them a little more room than you do in putting in cuttings for rooting. This transplanting gives you a better vine to transplant again to the vineyard than if you allowed the root to grow two seasons and transplant then. Another way would be to transplant the rooted cuttings at the end of the first year to the vineyard and graft in the vineyard at the end of another year's growth. We personally prefer the cutting-graft properly calloused before planting in nursery row, as it saves time, but growers do not agree as to which of several ways is best.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 3, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Cool weather prevailed most of the week and severe frosts occurred in many places toward the close. Heavy rain fell in the northern districts on Tuesday and Wednesday, accompanied by high winds. The snowfall in the mountains was unusually heavy and extended well down to the valley. Grain continues in good condition, but the soil is too wet for healthy growth, and in some places the grain is turning yellow. Hops have wintered very well and are showing considerable growth. Alfalfa and pasturage are growing rapidly. The heavy frosts probably caused some slight damage to deciduous fruits and grapes in low places along the rivers, though reports state that most of the fruit was too far advanced to be seriously injured. Cherries, apricots and almonds are reported safe for good crops. A disease has attacked peach trees, causing a falling off of leaves and fruit.

Coast and Bay Sections.

The weather was cloudy and unsettled at the beginning of the week, with heavy rains and hail in many places and snow in the mountains. High winds prevailed in the central and northern sections on Tuesday and Wednesday. Severe frosts occurred Thursday and Friday mornings, but reports all agree that no material damage resulted to fruit and grapes except in a few places. Walnuts at Peachland were quite seriously injured. Deciduous fruits are advancing quite rapidly and give promise of large crops. Vineyards are thrifty and progressing satisfactorily. Grain and grass continue in good condition, but growth has been rather slow during the week and more sunshine is needed. Green feed is plentiful.

San Joaquin Valley.

Partly cloudy weather, with showers, prevailed the first part of the week and clear, cool weather the latter. Killing frost on the morning of the 31st did considerable damage to some varieties of grapes in the Fresno district, while in other sections the damage is reported as light. Little or no damage to other fruits. Plowing and cultivating orchards and vineyards is progressing rapidly. Grain and grass are making rapid growth and promise good crops. Heavy snow fell in the high Sierra during the late storm. Stock are healthy and in excellent condition. The cold weather of the 30th and 31st is reported to have killed the apricots and greatly injured other fruits in Owens valley.

Southern California.

Fair weather at the beginning of the week was followed by light rain Wednesday and Thursday, with phenomenal snowstorms at Redlands, Riverside, San Bernardino and other places. High winds prevailed in some sections and cold, frosty weather followed the rain. Minimum temperatures of 32° were recorded on the 31st at many places, and the frosts probably injured deciduous fruits and tender plants to some extent. Citrus fruits were not damaged. Orange trees now in blossom are also bearing young oranges and ripe ones. Harvest is in progress on alfalfa and barley hay in Riverside county, and the yield is reported heavy. Grain is making good growth and green feed is abundant. All fruit trees are looking well. The observer at San Diego reports that the reservoirs at Otay, Sweetwater, Cuyamaca, La Mesa and Escondido contain over ten billion gallons—the greatest amount of water ever impounded in the county.

Eureka Summary.—Peas and late potatoes are being planted. Large acreage in oats, crops the heaviest in many years. Grass, grain, crops of all kinds were never in better condition and promise record breaking yields.

Los Angeles Summary.—The week was cold, with some frost. Rain on the 29th turning to snow or hail for a short time in some places, but no damage is reported. Crops are in good condition except some rust in oats from much rain, which clear, warm, windy weather will remedy.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 5, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.65	30 52	42 76	39 42	62	38
Red Bluff	T	31 08	21.39	22 77	76	34
Sacramento	.01	18.35	10 60	17 20	74	36
San Francisco	.00	20 07	13 15	30 60	66	42
Fresno	.10	10 06	3 96	7 71	82	32
Independence	.16	3 18	1.62	3 39	74	28
San Luis Obispo	.70	20.50	8 69	18 47	72	38
Los Angeles	.36	18 20	7 75	14.94	70	42
San Diego	.20	13 66	4 28	7 46	68	38
Yuma	T	8 53	0 94	2 79	86	42

FRUIT MARKETING.

The New Prune Selling Propositions.

To the Editor:—I want to express my views and at the same time answer a circular and card sent me by Ellwood Cooper, State Commissioner of Horticulture, desiring me to choose one of two plans for advancing the interest of prune growers of California. My ideas may be new to most all prune growers; if so, and they happen to be true, it may lead to something good, even though we cannot master the situation at once.

Probably both plans suggested by the committee at San Jose are good. Which is the better I am unable to decide. I am willing to sell my entire crop for five years for 1¾ cent basis for the four sizes in the bin, cash on delivery, or by the profit sharing plan.

Is it possible that your committee is not aware that the enemy of the California dried fruit interest cannot be reached by the plans suggested in the communication sent to me? The enemy is not the middle men nor commission men; it is not the grower nor consumer. Then you may ask, Who can the arch enemy be? Every fruit man in this State would help to destroy his enemy if he could only have an opportunity to lend his mite. If you will try you can reach him and it is an easy matter, because it was tried in San Francisco last fall by a few merchants who sold prunes and raisins at what they said was cost (that is, 5 cents per pound), and I do not wonder at the class and quantity of customers that purchased from one to fifty pounds at the above price, the price being so much lower than they had ever paid for such fruit. These merchants paid 3½ cents per pound and sold them at "cost," viz., 5 cents, thereby making, when their sales run from fifteen to twenty tons per day, a neat little gross gain of $450 to $600 per day.

If the dry goods and shoe stores could fake the public into believing they were selling goods at cost when they were making 50% profit, it certainly is not a difficult job for our arch enemy, the grocery store man, to charge from 200% to 500% on the goods when he adopts the method of telling his customers he has to make a little extra profit on dried fruit, because they are perishable, and besides he does not sell much of them, and furthermore he handles sugar and flour without any profit, and must make a large profit on such things as dried fruit that perish easily.

The truth is this mild-faced grocery man, who never fails in business unless he dabbles in some outside ventures, is the arch enemy to the prune industry of California. He sells nothing without a profit. Flour, sugar and all such things are sold to him by the barrel or sack 5% less than he sells them. If he pays cash he gets another 5% off. Added to the sale profit he makes 10% on sugar and flour. If he retails by small packages he makes 15% or 20%—a big profit.

How about prunes? He buys them as low as he can and sells them for all the traffic will bear. The less his customers know about prunes the more he charges. Not one woman in a thousand knows what 50 to 60 mean in prunes. All they know is that they want to spend at that time. If they inquire price they are told 2, 3, 4, 5 pounds for 25 cents, and their groceryman does the rest. Is it any wonder then that prunes bring 18 cents per pound in New York at retail, while our growers and packers get just 1 cent more per pound in New York than in San Francisco, that 1 cent is exactly the freight from San Francisco to New York—robber groceryman makes the difference—which is immense? Fifty to sixty prunes laid down in New York last summer brought 4 cents in 25-pound boxes. The commission men charged, including drayage, 10%. Add this 10% to 4 cents per pound and you have what the prunes cost the arch enemy—about 4½ cents—and he retailed them for 18 cents, or 400% advance.

You have only to ask your grocery store man what he charges and look at quotations to veryify the above. Each grocery store charges all his conscience will bear, and he has no right to class dried prunes as perishable goods except as they are destroyed by rats and clerks who frequently fill their pockets with the delicious fruits.

Until you can compete with our arch enemy by placing a retail store in each town with orders to sell at a small advance on cost like sugar, flour, etc., you can count me out. I would rather furnish the fakirs prunes at 3½ cents and let them sell them "at cost," 5 cents per pound, than join in a season of prayer or promise to deceive myself and other prune growers. I am so angry and disgusted with the prune business that I fear I will mention names if I do not bring this answer to a close.

G. W. Leek,
Grower, Packer and Shipper.

San Francisco.

THE PROPOSITIONS TO WHICH DR. LEEK ALLUDES.

Ellwood Cooper, State Commissioner of Horticulture, has sent out to the prune growers of California post cards to be signed and returned marked with a cross opposite the plan preferred by the signer for organization of the prune market.

Two plans are presented, and the signer agrees to abide by the plan chosen by a majority of the growers. The first plan is the profit sharing method, involving a contract from each grower to sell for cash on delivery, for five years, at 1¾ cent, four size basis, with a strong company agreeing to pay also pro rata to growers one-half of net profits. All contracts to be placed in escrow awaiting sufficient crop control and completion of company with ample capital.

The alternative plan is the co-operative and one known as the Rochdale and Exchange system, by which local associations unite through representatives to form a central selling agency, which shall establish a complete distributing system, reaching all important markets.

Commissioner Cooper sends the post card to each grower along with a circular, in which, after stating the resolution adopted by the recent State convention in this city to submit to a vote of the prune growers of the State the question as to whether or not they wisb any organized control of the market in the interest of the grower, and setting forth the two plans proposed, he proceeds as follows:

Both plans contemplate that a most extensive and complete sales system shall be provided, with the purpose of reaching the consumers and securing a large increase in the consumption of prunes.

In the first case it is believed that if contracts can be obtained covering most of the crop, a company can be formed with sufficient capital to succeed, with men in control whose character for fair dealing would insure the honorable division of actual profits according to contracts.

In the second case it is clear that the matter could be handled successfully by such a method of co-operation, since it is the plan that has never yet failed, and its success in the case of the great Rochdale movement in England and California, and in the Exchanges of California (the Santa Clara Fruit Exchange, the Southern California Fruit Exchange and the California Fruit Exchange), has demonstrated its safety and value.

In either case the strongest possible contract is necessary to protect the members from the defection of weak or designing growers.

It is important to know which of these plans is most generally acceptable, and to know whether the growers generally will agree to abide by the vote of a large majority of the prune growers of the State.

It is absolutely sure that if nothing be done to organize the market and extend the consumption of prunes, California prune growers will never again market an average crop above a 1½ cent basis.

American Fruits in France.

U. S. Commercial Agent Walter T. Griffin, Limoges, France, in his annual report for 1904, which will be printed in Commercial Relations for that year, has the following paragraph on American fruits in France:

Within fifteen years the importation of canned, dried and preserved fruits into this part of France has doubled. California pears, plums, apricots and peaches are found in every grocery store, and dried fruits of every variety—of better quality than the domestic product—are sold throughout France generally. However, there is still an opening for a large increase in this business, and, if the French market is properly approached, sales could be doubled.

HORTICULTURE.

Peach Disease.

To the Editor:—The very prevalent disease which is seriously affecting peach trees in the San Joaquin and lower Sacramento valleys is by no means a new development in the State, but an old disease which appears to have been greatly stimulated beyond its usual occurrence by the heavy spring rains of the last two seasons. Complaint first began to be common of the appearance of this trouble on peach trees during the spring of 1904. At that time the disease showed itself in the form of discolored spots upon the fruiting twigs, from which masses of gum exuded. As the weather became drier the trouble gradually disappeared and no very serious effects were seen upon the new growth.

This year the same symptoms appeared again in February upon last year's wood, but to a greater extent than before. As leaves and new shoots developed these became affected to a much greater extent than last year, owing to the unusually early beginning of growth during wet weather. The effects are seen in a wilting, spotting, yellowing and dropping of the leaves from the tree, beginning in the lower and inner part and spreading toward the top. Trees of all ages and many varieties are equally affected. The new shoots wilt, lose their leaves, and dry up, with an appearance something like that caused by the peach worm (Anarsia lineatella). Upon the leaves and shoots dead spots, or "shot holes," appear.

The cause of this disease is a fungus (Coryneum) which also affects the apricot and almond, being now quite prevalent upon these trees, as well as the peach. It is not ordinarily a very active parasite and causes little damage except in the form of the apricot "scab." Unusually favorable weather conditions for the fungus have caused the present outbreak. This year's crop will probably suffer by the loss of leaves from the trees, but no permanent injury is to be looked for. The first continuous dry weather will check the development of the fungus for the remainder of the season.

There is no doubt that Bordeaux mixture would check this disease if applied at the right time, but we have at present no experience, or actual results, to go by. Winter-sprayed orchards seem as badly affected now as the unsprayed. The fungus appears to develop mostly in the fall and spring, on the youngest growth, so that spraying at those times seems most promising. Spraying at present seems of little use as the damage is already done this season and dry weather will soon check the present outbreak. Orchards only slightly affected where the disease seems to be spreading may be sprayed even now with half strength Bordeaux, five pounds copper sulphate, five pounds lime, 100 gallons water. Peach foliage is very sensitive to copper sprays. Spraying just as the leaves unfolded would probably have been most effective this year.

R. E. Smith.

University of California, Berkeley.

Fruits in Lassen County.

To the Editor:—Please advance my subscription another year. I could not get along without your valuable paper, as I get so many good hints about farming and fruit raising.

I note in your last issue the comments on Sugar prune by Mr. Luther Bowers, of Napa county. My experience with Sugar prunes has not been very flattering. I first bought four trees and only one of the four ever put out a leaf and that is a very poor peach. The next year, three years ago, I got one dozen, and they have done nothing as yet. Three or four of them broke the union at the bud. They were budded on peach, and they don't form a good union on peach. The others have never made a satisfactory growth and some have sprouted from the peach root.

Peaches do well here, when not caught by late frosts. I have sold as high as $18 worth of fruit from one tree. I note what Mr. J. D. Chamberlain says of the Phillips cling peach. I have only two young trees. They bore a few peaches the first time last year and we canned them and think them the finest canned peaches we had, and have the Wager and other varieties that are good, but not quite so nice as the Phillips cling, and I intend to plant out more of them.

This has been a very mild winter here—in fact, no real winter weather—and stock of all kinds have done fine.

G. R. W.

Milford, Lassen county.

THE FIELD.

Potato Growing in Northern Santa Barbara County.

One great advantage in this business is it only takes a few acres to bring in big returns, on account of the amount that one acre of good potato ground will produce. One disadvantage is it requires soil adapted for that product, which is a sandy loam. There are probably between 3000 and 4000 acres of that kind in the Lompoc valley; but in the valleys adjacent there is considerably more land well adapted to the production of potatoes. The best land in the valley is found along the Santa Ynez river. This soil seems to be just right, or a great deal of it, at least, and the proximity to the river makes the problem of plenty of water in a dry season an easy one to solve, for by the installation of a pumping plant the ground can always be irrigated at a comparatively little expense, when the value of the production per acre is considered. This land can be purchased at from $90 to $125 per acre.

In the year 1903 something like 30,000 centals were raised, and in 1904 the crop was about the same, notwithstanding the fact that these were not considered good years on account of partial drouths. The prices realized by the producers of these crops were from $1.20 to $1.70 per sack, which contain from 110 to 120 pounds.

The production per acre will run from 75 to 100 sacks. This gives a handsome income from an acre of ground.

The demand for the Lompoc Burbank potato is always good and the price paid for them is top notch, for they have the reputation in the California market of being superior to any other potato grown in the State. The Burbanks are almost the only variety grown, as they give the best satisfaction. They grow to a splendid size, are almost without blemish and cook very fine.

Most of the potatoes grown in the Lompoc valley

are marketed in Los Angeles, but several cars per year are shipped to San Francisco and Santa Barbara. The latter city is making a greater demand each year for Lompoc potatoes, as the population grows and the number of Eastern visitors increases each winter, and it will not be many years until that city will consume a large percentage of our production. This will give us a market almost at our very door.

The potato crop is ready to begin shipping about the latter part of September.

On account of the tendency of potatoes to "run out" in quality, if the seed is not changed at least every two or three years, a quantity of seed potatoes is brought in from Oregon each spring. The potatoes from that State are very similar to those grown here, and by the continual changing of seed in this way the highest possible standard is maintained.

Facts About Skunks.

To the Editor:—In your issue of March 18th I notice how Dr. J. M. Barrickman scores our poor old skunk as a low-down worthless animal. The doctor may be a good amateur naturalist, but I think he is going too far in condemning the skunk along with the polecat. While I never had any particular use for the little spotted polecat, I regard the striped skunk as the most valuable insect destroyer we have that wears hair. He may now and then destroy a few birds that nest on the ground, but in the workings of nature, what of it? Our small boys also do that. So, too, may the skunk become a nuisance when he falls into the evil ways of meddling with the poultry. My verdict then is: kill him.

But out on the range and in the fields he is the agriculturist's best friend, for not only does he destroy hundreds of field mice, but grasshoppers are a specially favorite food with him and the number of these pests he will destroy in the season is hard to compute, for he even pursues them to the breeding grounds, and not only does he dig up the hoppers' eggs, but the little baby hoppers are a delicacy to him. Cut worms, too, are a favorite with the skunk, as likewise all manner of beetles and insects, even to such hot numbers as yellow jackets.

The doctor would probably despise the courageous, home-defending yellow jacket, too, but I have a good word for this spicy little friend, for in him we have a most bloodthirsty insect destroyer. While they are rearing their brood, plant lice, flies, worms, tiny grasshoppers, and in fact anything that is meat, as any camping party can tell, is their order to fetch home to their young. Sugar, too, is a part of their bill of fare, but in these parts fruit is little molested until after the September rains, as their wants are supplied by abundant honey dew.

The brood of young yellow jackets are turned out some time in the fall of the year and pass the winter tucked away somewhere on the bark of a tree in a crevice or other similar place.

I regard the yellow jacket in the latter part of the season as an undesirable insect to fruit growers, and it is here that our friend Mr. Skunk comes in again for his reward, as he is an expert at digging up and destroying yellow jackets.

To my way of thinking, our game laws are not anywhere near ideal, or practically what they should be to protect our best interests, and furthermore, they never can be until the public at large take a deeper interest in Nature's ways or the balance that controls the good and evil species.

To conclude, just to show that I am quite familiar with the industrious old skunk, I will tell just how to kill him when it is necessary to do so, as is the case when he is trapped for molesting the poultry. Put a stout string 18 inches long on the end of a pole 10 or 12 feet long. Have a slipnoose in the string and get it over the skunk's head and tighten very gently and lift him off the ground and choke him to death and he will rarely smell in the least.

To destroy skunk scent on clothing, place the clothing in a tight box and cover it over with a blanket and explode a little gunpowder in the box, just enough to fill the box with smoke, and the scent will be neutralized in a few minutes. A room that has become rank scented can also be deodorized with black powder smoke. Albert F. Etter.

Ettersburg, Humboldt county, March 24.

Cereal Improvement.

The Legislature passed a bill providing for investigation to devise ways to increase the yield of grain per acre in the State and to increase the gluten content thereof. The text of the measure is as follows:

Section 1. The Governor of the State of California is hereby directed, and it is hereby made his duty to cause to be made under the supervision and direction of the director of the agricultural experiment station of the University of California, such investigation and experiments as he may deem best, for the purpose of discovering and making known such improved methods of cereal culture in the State of California as will increase the yield of cereals in said State and increase the percentage of gluten in said cereals, or otherwise improve the quality thereof. The said Governor shall have the exclusive charge and control of all moneys appropriated hereby, to be used in employing such expert and scientific assistants as he may deem necessary, and for the paying of the expenses of carrying on the experiments and investigations herein provided for. He shall from time to time publish the results of such experimental and investigational work as may have been done, for general distribution.

Sec. 2. The sum of $10,000, or so much thereof as may be necessary, is hereby appropriated out of any moneys in the State treasury not otherwise appropriated, to be paid to the Governor to be used for the purposes of this Act, one-half thereof to be expended during the fifty-seventh fiscal year, one-half thereof to be expended during the fifty-eighth fiscal year; and the Controller is hereby directed to draw his warrant on the general fund from time to time for such proportion of said sum of $10,000, and in favor of such persons as the Governor shall direct; and the State Treasurer is hereby empowered and directed to pay the same.

The bill was signed by the Governor on March 20.

THE VETERINARIAN.

Bovine Tuberculosis.

The clearest and most satisfactory popular account of bovine tuberculosis has just been written by Dr. V. A. Moore, of the New York State Veterinary College, whom many of our readers know because of his very acceptable visit to this State two years ago in consultation and co-operation with his pupil, Dr. A. R. Ward, of the University of California Experiment Station. Dr. Moore's account of tuberculosis is published as an extension work bulletin of Cornell University and it should be studied carefully by every one who owns a cow. For this reason we transfer it largely to our columns:

The Disease.—It is important that both the specific and the infectious nature of tuberculosis be understood. It is a "specific" disease because it is produced by a single cause—the tubercle bacillus. It is "infectious" because the tubercle bacteria are taken into the body. This may be by direct contact or by the bacilli being left in the manger, watering trough or elsewhere by a diseased individual and later, but before they die, being taken up by a well animal. Thus a barn containing tuberculous cattle will become infected, and healthy animals placed in such a barn before it is disinfected are very liable to contract the disease. It is often said that badly ventilated and poorly kept barns and improper food cause tuberculosis. This is not the case. The disease cannot develop in the absence of the tubercle bacillus any more than corn can grow in a field in which no corn has been planted. It is, however, undoubtedly true that in poorly ventilated, dirty barns, the tubercle bacilli may be distributed more rapidly than in sanitary stables, but poor air and filth cannot of themselves produce tuberculosis.

In considering from a practical point of view an infectious disease, like tuberculosis, we must take into account seven important features: (1) the cause, (2) the method of infection, (3) the period of incubation, (4) the duration of the disease, (5) the way to detect or diagnose it, (6) the way to eliminate it, and (7) the methods for preventing it.

Cause of Tuberculosis.—Tuberculosis is caused by a micro-organism, the bacillus of tuberculosis. It is a very small rod-shaped micro-organism. It is so minute that 10,000 of them might be placed end to end within the linear distance of a single inch. This organism has a peculiar way of retaining the stain used for coloring it, so that it is possible to distinguish it from other bacteria by a microscopic examination. It will kill guinea pigs when a very few of the bacilli are injected into the subcutaneous tissue. It is also fatal to other animals. The tubercle bacilli that are found in tuberculous cattle and people often differ very slightly from each other, but it is known that they belong to the same species. The Royal Commission on tuberculosis, appointed by the King of England in 1901, has recently made a partial report in which they state that they have been unable to find any difference in the disease-producing power of the bacilli from human and from bovine sources.

This bacillus seems to be able to live for some time in dark and damp places. It is readily killed with a 5% solution of carbolic acid, or a 1 to 1000 solution of corrosive sublimate. Sunlight and dry air are not favorable for its existence outside of the body.

The tubercle bacilli escape from the diseased animal in the saliva and mucous from the mouth, when the lungs or certain glands are discharging into the respiratory tract. They escape in the pus from tubercular abscesses that open through the skin and in the milk. Dr. Salmon has recently stated that all of the examinations that have been reported of milk from tuberculous cows show that about 15% of them give off tubercle bacilli with their milk at some time during the course of the disease. The udders show tuberculosis in about 2% of the cases.

The Method of Infection.—Animals become infected with tubercle bacilli largely through the digestive tract. The infection by means of inh[illegible] particles of dirt or dust carrying tubercle bacilli, or by getting into wounds of the skin, is possible but certainly not very common. Healthy cattle "nosing" with infected ones or feeding and drinking after them is supposed to be the most usual method of infection. The infection of calves by feeding them milk from tuberculous cows is not an infrequent means of propagating the disease. The slow development of the disease makes it possible for calves to be infected and frequently they do not show evidence of tuberculosis for many years. I have known of a very large percentage of calves fed upon milk of diseased animals to give a good tuberculin reaction (thus showing the disease) before they were six months old. This is believed by the writer to be one of the very important ways by which the disease is disseminated in breeding herds.

Tuberculosis is often found in swine fed upon milk from infected cows. In 1903 the writer knew of a carload of hogs that had been purchased in a district where there were many tuberculous cows, and of which the first fifty-nine that were slaughtered were all tuberculous. The remainder were not killed at that time. While such a condition may be considered an exception, it is a fact that many swine are infected, especially when they are fed tuberculous milk. Last year the United States meat inspectors condemned about 20,000 hogs for tuberculosis.

It should be remembered that the greater the percentage of tuberculous cows in the herd, and the further advanced the disease is in the cattle, the greater the danger of infection from the use of the milk. In cases where the disease is restricted to small nodules in the lymphatic glands, or perhaps in the lungs, the danger of tubercle bacilli being in the milk is very slight, but when the udder is tuberculous they are constantly present in the milk and often in very large numbers. When calves or pigs are fed with milk of this kind, they are almost sure to be infected. The same result may follow when it is fed to children or adults.

Practically the only way tuberculosis gets into a herd of healthy cattle is by the introduction of a tuberculous animal. It has often happened that farmers who have perfectly healthy cows buy a nice looking cow that is tuberculous, although the disease was not at all in evidence, and sooner or later this animal infects a very large number of animals in the herd. The buying of infected animals is largely responsible for the spread of tuberculosis in cattle.

The history of tuberculosis in cattle shows that when once it is introduced into a previously uninfected district its tendency is to spread from farm to farm with a rapidity which depends largely upon the activity of the cattle traffic. If the interchange of animals between herds is frequent, the disease spreads rapidly. If, on the contrary, there is but little interchange of animals, tuberculosis spreads slowly in the newly infected community. This observation relates to the spread among herds; other conditions govern the spread of tuberculosis after infected animals are added. The latter factor is controlled by the degree of contact between the diseased animals and their associates, and the sanitary and other conditions to which the herd is subjected. The extent of cattle traffic is one reason why there is greater danger from tuberculosis now than there was a generation ago.

If a tuberculous cow is placed in confinement with other cattle, she will convey the disease to them more certainly and more quickly than when the animals are at liberty. As bearing upon this point, it has been noted repeatedly that tuberculosis spreads more rapidly in herds when they are confined in winter than when they are at pasture in summer, and there is reason to believe that this difference is due not to the season, but to the intimacy of the contact. Moreover, tuberculosis once introduced spreads with increasing rapidity as the centers of infection are multiplied. So long as there is but one infected herd from which it may spread in a district, the extending of the disease will necessarily be slow, but when ten herds are infected from this one the progress of the disease will be ten times as rapid, and when five herds are infected from each of the ten the disease will, other factors being equal, spread at fifty times the original rate of progress.

The Period of Incubation.—In case of many of the infectious diseases the time that elapses between the exposure (infection) of the individual and the time when the disease appears is short and more or less uniform. This makes it possible to quarantine suspected animals until this period has passed and thus ensure safety in placing them with the home stock. With tuberculosis this period is not regular, and it is not known how long it may he. Our present knowledge of the subject shows that it varies from a few days to as many months. Tuberculin does not give a reaction during this period. It is necessary, therefore, for safety that cattle that do not react when purchased should be tested again in from three to six months later, as it is possible they were bought after they had become infected, but in the period of incubation. This precaution is of great importance in protecting a dairy. The newly purchased cows should be kept apart from the herd until after the second test.

(to be continued.)

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The Challenge
Three competitors, each beaten hundreds of times singly, band together and enter a contest against the Sharples Tubular. Providing the "combine-of-three" are allowed to furnish the milk. Providing the "combine of three" dictate temperature of milk. Providing the "combine-of-three" dictate quantity of milk. Providing the "combine of three" run three machines, and if any one leaves less than double the fat of the Sharples Tubular they win. The "combine-of-three" select cold, hard-skimming cows' milk 62° to 70° 200 lbs. at a run.

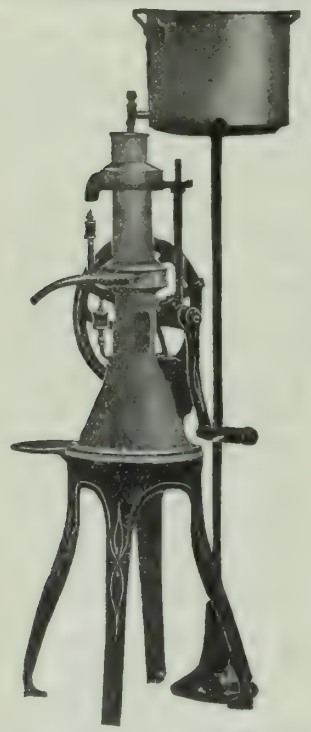


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THE DAIRY.

The New Law About Butter Weights.

The following is the full text of the new law requiring marking weights on butter packages to which we alluded last week:

Section 1. No person or persons, firms or corporations, by themselves or their agents, or employes, shall sell, manufacture or prepare for sale, offer for sale or expose for sale or have in his or their possession for sale, or consign, ship or present to any dealer, commission merchant, consumer, or other person, any butter in packages containing less than six pounds and more than one-half pound, unless the exact weight of such butter contained in such package or packages, rolls, prints or other form of package, expressed in the number of pounds or ounces or in both pounds and ounces, shall be printed or durably and legibly marked upon the wrapper or other container of such butter in letters or figures, or in both letters and figures, not less than one-fourth inch high and upon the same side or face of such package upon which the producer's or seller's name and address appears, and if such name and address does not appear, the weight alone shall be legibly and durably placed upon such package in letters or figures not less than one-fourth of an inch high.

Sec. 2. Whoever shall violate any of the provisions or sections of this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than twenty dollars nor more than one hundred dollars, or by imprisonment in the county jail for not less than ten days nor more than fifty days, or by both such fine and imprisonment at the discretion of the court.

Sec. 3. It shall be the duty of the State Dairy Bureau, now existing under the laws of this State, to enforce the provisions of this act and to cause the prosecution of any person known to be guilty, or that it has reason to believe to be guilty of violating any of the provisions of this act. It shall be the duty of the district attorney of each and every county in this State, upon application from the State Dairy Bureau, to attend to the prosecution in the name of The People of any action brought for the violation of any of the provisions of this act within his district. One-half of all fines imposed for the violation of any of the provisions of this act shall be paid to the county in which the fine is imposed. The other one-half shall be paid to the State Dairy Bureau and by said Bureau to the State Treasurer and the same shall become a part of the appropriation made by law for the use of the State Dairy Bureau.

Sec. 4. All acts and parts of acts inconsistent with this act are hereby repealed.

Sec. 5. This act shall take effect sixty days after its passage (on May 19).

GOOD ROADS.

State Road Making.

To the Editor:—The California Legislature, which adjourned March 10, 1905, enacted laws providing for work under the direction of the State Department of Highways as follows, the aggregate appropriations for the purpose being $151,110:

Twenty thousand dollars for constructing bridges, culverts and grading on the Sonora and Mono State road, in Tuolumne and Mono counties, 78 miles in length.

Seven thousand dollars for permanent improvements on the county road between Alturas and Cedarville, Modoc county, a distance of 25 miles.

Thirty-two thousand dollars for protecting the banks of Eel river, Humboldt county, by jetty work. The appropriation is made conditional upon a private subscription of $8000 toward the work.

Fifty thousand dollars for constructing a highway from the General Grant National Park, Fresno county, easterly into Kings River canyon, a distance of 50 miles. The appropriation is made upon condition that the county of Fresno shall contribute $12,500 additional and assume the maintenance of the road.

Six thousand dollars for constructing permanent bridge work on the Lake Tahoe State wagon road, 58 miles in length, in El Dorado county.

Five thousand dollars for providing metallic guide posts for the desert sections of Kern, Ventura, Los Angeles, Inyo, Riverside, San Bernardino and San Diego counties.

Eight thousand dollars for maintenance of the Sonora and Mono road; $8000 for maintenance of the Lake Tahoe State wagon road; $1000 for maintenance of the Mono Lake Basin State road, 9 miles long, in Mono county; $14,110 for maintenance of the Department of Highways for the two fiscal years beginning July 1, 1905.

Department of Highways,
Per Clark Alberti, Secretary.
Sacramento.

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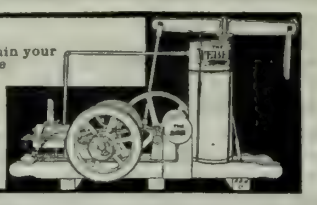
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Agricultural Review.

Butte.

BIG RHUBARB FARM. — Marysville special to Sacramento Bee: Clark Standiford, a former well known grocer of this city, is preparing to engage in the cultivation of rhubarb on an extensive scale at his ranch near Chino Mills, Butte county. Five tons of roots have been shipped to him, and they will form the basis for his enterprise. The land in the vicinity of Chino Mills is said to be especially adapted to rhubarb growing, and Standiford proposes to adopt practically his entire energies to the task of building up a big and profitable industry.

STORMS CAUSE FRUIT GROWERS TO WORRY.—Chico special to Sacramento Bee, March 29: A heavy windstorm, accompanied by rain, broke upon this section last evening and continued through the night and this morning. The temperature was quite low for this season of the year and causes fear among the orchardists that it will terminate in a frost that will be destructive of their crops. In the mountains around Stirling City snow has fallen during the past few days and it is reported that 4 feet of snow have fallen on the summit between here and Plumas county. The mountains before this storm had been free of snow, except on the high peaks. The new condition serves to render the situation of the fruit men for the next few weeks all the more hazardous. The nearness of the mountains renders the valley climate in this locality sensitive to their condition.

Fresno.

A MILK RECORD.—Laton Argus: Perry Phillips is one of our oldest farmers. From eighteen cows, three of which he terms "strippers," he received a check of $132 for the month. He had the milk skimmed at the Laton station and the cream was shipped to Hanford and brought a little better than 25c a pound for the butter fat.

FROST DAMAGE. — Republican: The frost Friday morning did considerable present damage, although, in actuality, it amounts to retarding early crops of some varieties. The reports as to the extent of the damage are different from different sections, but all agree that Malagas suffered the most severely; then Sultanas and Thompson Seedless. It was too early to nip the Muscat shoots. Little hurt was done deciduous fruits. The temperature at 6 o'clock was 32°, as recorded by Weather Observer Bolton. As his thermometer is 40 feet above the ground, the temperature on the ground, he estimates, was as low as 26° to 28°.

DAMAGE TO SEEDLESS.—The frost of Friday morning seems to have damaged the seedless grapes in Selma to a considerable extent. Apricots and almonds were too far along to be damaged. Many of the old peach orchards in this vicinity are suffering from a "sour sap" affection. Some orchards have been entirely stripped of foliage and it is feared that the tree itself is damaged, if not killed. Young peach trees seem to have not been affected.

Los Angeles.

RANCH PROPERTY SOLD.—Covina Argus: T. M. Calvert has contracted for the sale of his five-acre orange grove on West Badillo street to W. L. Lewis of Illinois, the price named in the contract being $5675, the crop being reserved by the present owner. The grove is planted two-thirds to Valencias, the balance in Navels—twelve-year-old trees. Mr. Calvert has owned the property three years and his gross receipts for fruit during that time have been $4529.

MORE ALFALFA.—Grain and seed merchants of Los Angeles say that their sales indicate a great increase in the acreage being planted to alfalfa. Although alfalfa seed is much higher than the average price, the farmers have been buying freely ever since the first rains of the season, and as the rainfall continued the sales have been increased. Charles Winsel, a South Main street seedsman, estimates that the acreage of alfalfa in the territory tributary to Los Angeles will be doubled this year on account of the favorable rainy season. There will also be a considerable increase in the acreage planted to corn.

Mendocino.

LARGE CALIFORNIA PANTHER.—Sun: Clark Hill, aged 13, living in Mendocino county, south of Eel river, killed a panther measuring 12 feet from tip to tip. He treed the panther with dogs and was walking around the tree trying to get a shot at it when the animal sprang from the limb upon him. There was a terrible fight for his life. Struggling from the panther, aided by the dogs, he succeeded in regaining his gun and shot the animal in a vital spot. It was the largest panther ever killed in the county. He got some brush and rolled his prey over on it. He then hitched the brush to his horse and dragged it home in triumph. The ranchers thanked the boy, for the panther had been preying on the stock of the neighboring ranches for several months.

PRAIRIE WOLVES KILL MANY HOGS. —Santa Rosa Republican: General John H. Dickinson has three ranches in the vicinity of Laytonville and of recent months the swine on his place have been killed in large numbers by the coyotes. Especially has the devastation been wrought on the shoats and young pigs of the ranches, and to put an end to the decimation of his droves General Dickinson has determined to maintain a large pack of coyote hounds to combat the enemy of his live stock. He will remain several weeks in the vicinity of his ranches and direct the efforts to exterminate the varmints. He has lost hundreds of dollars through the ravages of the pests.

Merced.

SWEET POTATO GROWERS HAVE TROUBLE.—Express: The sweet potato growers in Buhach colony are having trouble. The majority of the "sweets" have formed an organization known as the "Sweet Potato Growers' Protective Association" for the purpose of keeping up prices, and the membership numbers something like 140, but there are perhaps 20 producers, who are not members, who are creating trouble. Frank Dutra and John Avila are reported to be non-members of the Association and shippers as well. This week nearly a carload—some 200 sacks—were loaded on a car at Buhach switch by non-members of the Association for shipment, but during the night the car was broken open by some members of the Association, so it is alleged, and the 200 sacks of potatoes were thrown out and chopped into mincemeat. The next day four men were arraigned on a charge of malicious mischief, had their hearing and were discharged.

San Bernardino.

GIANT MUSHROOM. — Times-Index: About the greatest mushroom yet discovered, the product of a single night, was found on Mrs. Cora Jackson's place. This monster mushroom is large enough to make a dish for a couple of families, and, in spite of its great size, is quite tender. It weighs 2¾ pounds, measuring 8½ inches in diameter at the top and standing 7½ inches high from the ground, while the stem is over 4 inches in diameter.

SALE OF ORANGE CROP. Sun: Mrs. M. L. Ferguson has sold the crop of oranges on her ten acres on the Colton Terrace for $2500 cash. The trees are from eight to ten years old. She sold the fruit on the trees.

HEAVY LEMON YIELD. — Redlands Facts, March 27: L. W. Coleman, of Rialto, has picked from his ten-acre ranch, from February 10 to date, 4400 field boxes of lemons.

SCALE ON THE FRUIT. — The orange growers of Rialto were greatly excited over the freight wreck which occurred there Friday morning, in which three cars of lemons en route from San Dimas to the East were smashed into kindling wood and the fruit scattered far and wide. The agitation was caused by the discovery of red and black scale and the presence of red spiders on the fruit. The secretary of the County Horticultural Commission, S. A. Pease, was summoned from San Bernardino and after making an examination he ordered the debris burned, including the fruit, and this was done.

San Diego.

CROP OUTLOOK. — Escondido Times: The small grain crop of central San Diego county never looked better at this time of year than it does now. The grain in most instances is knee high and has a fine color, with the ground thoroughly saturated. There seems nothing now to prevent one of the best hay and grain crops ever harvested in the county. The honey crop also promises to be good this season, as the moisture in the ground will keep the wild flowers in bloom until late in the season, while the outlook for fruits and berries is the best.

San Joaquin.

WOULDN'T SPRAY HIS TREES.—Lodi special to Sacramento Bee, March 28: L. Lagasmarisano, a fruit grower, has brought upon himself the wrath of the Board of Horticulture of San Joaquin county. A member of the Board informed him some time ago that it would be necessary to spray his orchard, which the Italian refused to do. Now the number of trees in his orchard will be counted, and if the work is not done in five days the county will do it and enter suit for collection of the work done.

Santa Barbara.

BARLEY, BEANS, BEETS AND MUSTARD.—Lompoc Journal: From various interviews with men who are in a position to make a fair estimate, the acreage of barley in Lompoc Valley this year exceeds that of many years. The total acreage is thought to be over the 10,000 mark. Computing this at 20 sacks to the acre, which is not above the average, there will be a yield of 200,000 sacks or 10,000 tons of barley raised in the valley this season. Of mustard, for which Lompoc is world famous, there are some 1500 acres, mostly of the red variety. There will also be about 1500 acres planted to beans. There will also be several hundred acres of beets, which will be shipped to the Union Sugar Co. at Betteravia. The barley crop was never in a better condition at this season of the year than at the present time.

Santa Clara.

NEW CANNERY. — News: The Pratt-Low Preserving Co. proposes to erect a building with an ultimate capacity of 3,000,000 cans of fruit a year, and plan packing during the coming fruit season from 1,000,000 to 2,000,000 cans. They will spend approximately $30,000 in the erection and equipment of their plant. And in the course of their employment of from 300 to 500 people will expend for labor from $1500 to $2000 per week. The out-turning of such a pack means the purchase of from 1000 to 1500 tons of green fruit.

ABOUT FROST. — San Jose Mercury, March 30: The frost of this morning may have scared a number of people, say the weather authorities at Santa Clara College, but the harm done in the valley is either nil or very slight. After a soaking rain the ground is warm and will not freeze except under abnormally low temperatures, which are not to be expected at this time of the year. Appearances are very deceitful. You will find frost here and there, even ice; but this occurs only on material that radiates heat very fast, such as iron, boards at the borders of our gardens, shingles or shakes on our roofs; but far otherwise is it with cultivated ground that keeps the heat received well stored up. As to the temperature of the air this morning it was above freezing point in this part of the valley and much more so in the warm belts. But it may have been either at or near the freezing point in certain localities near the mountains, where the breezes from above came down with the temperature of snow.

Santa Cruz.

STRAWBERRY SHIPMENTS. — Watsonville Pajaronian: M. A. Hudson, the well-known berry grower, sent to San Francisco on St. Patrick's day the first shipment of strawberries from Pajaro valley this season, and thereby broke all previous records for early berries. The consignment, consisting of one chest, was the product of the Riverside farm in the eastern end of the valley.

Shasta.

ONE THOUSAND DOLLAR FLOCK DROWNED.—George Phillips lost 250 head of sheep Thursday night by flood, and their bodies are now lodged high in the timber growth along the banks of Elder creek. The sheep were herded till midnight by the shepherd, who then left them. In order to protect themselves from the high wind the sheep bunched up in the creek bed about clumps of bushes. When the storm came the creek was transformed into a torrential stream that swept away the entire flock, valued at over $1000.

PEAR BLIGHT.—Anderson special to Sacramento Bee: The orchards in this fruit belt are affected by pear blight. The fact was determined this week by a special commissioner sent out by the horticultural department of the State University. He acted in conjunction with the Shasta county board of horticultural commissioners, visiting all the large orchards in this vicinity, inspecting the trees carefully. Where infected trees were found they were ordered destroyed at once. Eight large trees were destroyed in the Bedford orchard. The blight was found in the Zumwalt and other orchards. The pest has not made much head and by vigorous treatment now it may be eradicated. It is feared, however, that well-meaning orchardists, through ignorance of pear blight, not being able to recognize it at sight, may allow the pest to spread before its presence is known to the inspectors.

Sutter.

WILL PLANT NEW VARIETIES OF CORN.—Yuba City Farmer: Prof. L. A. Fitz, who has charge of the wheat experimental station on the Walton farm in this county, will plant about twenty new varieties of corn as sent out by the Government for experimental purposes. The wheat planted at the station is growing well and some extra good samples of seed will be procured from the same. Prof. Fitz is also in charge of a similar station at Modesto.

Tehama.

WOOL SELLING. — Red Bluff News: Wool men are trying to get together for the purpose of securing uniform prices for their product. As it is now, the large growers receive the best prices, while those with small clips are left to the tender mercies of the buyers. Having secured the large lots, they bear the market and pay the small holders whatever they please. It is to protect the owners of small flocks that the combination is proposed. About 500 bags have already been contracted for at 20 cents, and this year's fleeces of two large growers have been engaged for 18 cents.

DAMAGE TO ORCHARDS.—Red Bluff special to Sacramento Bee, March 31: Returns from the fruit sections as to the damage were almost as slow in coming in yesterday as from a fall election, and it was not until late in the afternoon that it could be definitely stated that practically no damage was done to the heavy crop now on the trees. It appears that the minimum temperature of the Weather Bureau thermometer was 34°, and over in Antelope valley there were occasional places where the mercury descended to freezing point, but it remained at or about 32° for twenty minutes or a half hour. Pears and other fruits escaped without injury.

GOOD WOOL OUTLOOK.—Corning special to Sacramento Bee: The winter season has been so mild and the pasturage so good that many of the flocks of sheep in southwestern Tehama county have made an increase of lambs of 100%. This section usually leads most others for large increases during the lambing season, but this year it has shown up far better than for many years. Shearing will commence in a couple of weeks. Because of the excellent condition of the flocks, the wool is unusually long and of fine texture, which will make it bring the highest price when the market opens early in May.

Tuolumne.

QUEER PLACE FOR PEACH ORCHARD. —Jamestown Magnet: Perhaps the most unique peach orchard in the State is on Jackass Hill. It consists of four trees that are growing in a cut on the Atlas mine. The cut is about 200 feet long, 150 feet wide and 60 feet deep, gradually tapering from the top to the bottom, where it is about 30 feet square. In the bottom are the four trees, now in bloom, that bear every year a good crop of large white peaches of excellent flavor.

Tulare.

FEW SQUIRREL TAILS.—Times: Notwithstanding the fact that the supervisors raised the bounty on squirrel tails from 2 to 3 cents at the February session of the board, there has been no increase in the number of tails brought in, as determined by the warrants cashed with Treasurer Newman—in fact the amounts paid since that time have been small. The bounty was raised for only a period of three months from date of passage.

Ventura.

STORM KILLS STOCK. — Democrat: John Scarlett and Sam Rowe suffered serious loss as the result of the storm. Thirty-five head of cattle, bearing the Scarlett brand, are missing, and also 200 head of hogs. In company with John Cline they searched the beach yesterday and identified nine head of cattle and many hogs that had been washed upon the beach. The hogs belonged to Sam Rowe, and all are supposed to have perished in the flood and carried out to sea.

COWS STILL ALIVE.—Free Press: The beach is a sight to see since the storm. All kinds of material may be found on the sand from dead cows and horses to bee hives, doors, lumber, trees and everything imaginable. Among the cows found were some with the McGrath brand. These animals were washed down the Santa Clara river and far out to sea, where an in-current brought the bodies to the beach. Strange as it may seem, two of the cows were still alive. They were set up on their feet and fed and finally grew strong, and were all right when last heard from.

Horse Owners! Use
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The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from **Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

When My Ship Comes In.

Somewhere, out on the blue seas sailing,
Where the winds dance and spin;
Beyond the reach of my eager hailing,
Over the breaker's din:
Out where the dark storm clouds are lifting:
Out where the blinding fog is drifting,
Out where the treacherous sand is shifting,
My ship is coming in.

Oh, I have watched till my eyes are aching,
Day after weary day;
Oh, I have hoped till my heart was breaking,
While the long nights ebbed away;
Could I but know where the waves had tossed her,
Could I but know what storms had crossed her,
Could I but know where the winds had lost her,
Out in the twilight gray.

But, though the storms her course have altered,
Surely the port she'll win;
Never my faith in my ship has faltered,
I know she is coming in.
For through the restless ways of her roaming,
Through the mad rush of the wild waves foaming,
Through the white crest of the billows combing,
My ship is coming in.

Breasting the tides where the gulls are flying,
Swiftly she's coming in;
Shallows and deeps and rocks defying,
Bravely she's coming in;
Precious the love she will bring to bless me,
Snowy the arms she will bring to caress me,
In the proud purple of kings she will dress me,
My ship that is coming in.

White in the sunshine her sails will be gleaming,
See, where my ship comes in;
At mast-head and peak her colors streaming,
Proudly she's sailing in;
Love, hope and joy on her decks are cheering,
Music will welcome her glad appearing,
And my heart will sing at her stately nearing,
When my ship comes in.

—Robert J. Burdette.

An Old Coat.

Stephen Birt and Mary, his wife, had fallen out, not by any means for the first time. Both were young, hot tempered, high spirited and prone to jealousy.

Today matters had come to a climax. The two young people, white, angry, with blazing eyes, stood facing one another. It did not make matters any better that they spoke slowly and deliberately.

"I'm tired of these scenes," Mary said, "sick to death of them. I can't go out, I can't talk to an old friend, but what you accuse me of flirting. I can't spend a day with a girl chum but what you say I neglect you. I can't—"

"You never spend a day with me; you haven't given me a whole day since we returned from our honeymoon. I might be the greatest stranger instead of your husband of six months for all the notice you take of me. You're cold as an icicle, and indifferent as—as—"

"You are! I shape my course entirely in accordance with yours. If we do go out together you are never by my side from the time we enter a house to the time we leave it. You can laugh and talk with other women; you never have a joke to tell me, or a smile for me. We never ought to have been married; I'm sorry, heartily sorry, we ever did."

His hand, resting on the back of a chair, gripped it tightly.

"You mean that?" he said, his tone changing, his expression hardening; "you really mean it?"

Her clasped hands gripped one another.

"So much so that I mean to do what I can to rectify our mistake. We can't live in peace together. I have tried; I daresay—I do you that much justice—you have tried; it seems impossible. That being so"—her voice was level, hard, though her heart was beating in loud thumps, "the best thing we can do is to part. Fortunately I have my own income. I only have to leave this house and make a home for myself elsewhere."

Her words startled, staggered him. He made a step forward, caught her hands.

"You mean that?" he said again. "You are serious?"

"I—I never was more serious in my life."

"You would leave me?"

"This is your house. Since it is best we should part, I must leave you."

"Did you never love me?" She tried to draw her hands from his, but failed; he held them closely clasped, waiting for her answer.

"Perhaps we were both too young to understand what love should be," she answered. "Perhaps we took mutual admiration for a deeper feeling. Anyway"—she felt a fear tightening round her heart as she spoke—"it is quite clear the love has waned. Anything is better than being together, with constant scenes. It will be wiser to part."

He tried to draw her to him; she held away.

"I will not let you go!" he said; "you are mine—my wife—I love you. If I have seemed indifferent, it—it has been only this—a man expects his wife to know he loves her, not to need telling day after day; that is a lover's business. Mary, if we have made mistakes surely we can put them right; if we have disappointed one another—and you, I must confess, have disappointed me—can't we begin all over again, wipe out the last six months?"

Her face softened for a minute; now once more it hardened. So she had disappointed him—she who had done everything she could to make him happy—while he—

"I have no wish to begin again," she answered. "We have tried to be happy, I suppose; we have been miserable. I, you say, have disappointed you; you have disappointed me. I would rather not talk any more. I will tell the servants I am going on a journey. I don't want to make things disagreeable to you. And I shall go today."

He dropped her hands; he looked at her for a moment—at her white, set face, her eyes that did not soften in the least as his glance met hers. Then a proud, boyish rage entered his heart. If she could go, if she could leave him, then, indeed, she did not, never had, loved him.

"You will please yourself, of course," he answered, "but whether you remain with me or leave me you are still my wife—you are still bound to me; be good enough not to forget that."

He scarcely saw his way as he crossed the room and left her—left her with a great anger in his heart against her.

"She never loved me," he said to himself, "never, never; let her go!"

He found his way to his study, sat down, staring blankly before him for a while, and scattering his papers heedlessly on the floor. Then his head dropped upon his hands, and his eyes were wet.

As the door closed after him Mary trembled. So he had accepted the situation! Then, indeed, he did not love her. She had expected pleading protestations; she had meant to forgive him; she had thought, indeed, they might begin again.

"He never loved me," she said to herself. "I did not mean to leave him. I shall go now; I owe it to my pride to go now."

She dragged her steps to her room; she must put her things together. Where she should go she did not know—and did it matter? If she was not with him she did not care where she was. There were plenty of hotels, but how lonely she would be!

She opened her wardrobe and flung dress after dress upon the floor. She must take something with her; it didn't matter what. Wherever she was he would not be there to see her.

The light was growing gray outside; the room seemed cold. She wondered what he was doing. He had not gone from the house; he was waiting to see her off, perhaps—wondering why she was so long. Could she have looked at him then she would have seen him sitting with a miniature in his hand, looking at the pretty face with tear-dimmed eyes—would have heard his words, "My little wife!"—seen him lift it to his lips.

She had taken out all the dresses now. There was still something at the back of the wardrobe—something soft. She took it down, drew it out, and a swift rush of color swept her face.

In her hands she held an old velvet smoking coat; but the sight of it brought back a flood of memories. She remembered so well he had strolled over to her father's house wearing it; he had found her in the conservatory, tending the plants, he had told her then that he loved her, had taken her for the first time in his arms, kissed her, gained her promise that she would be his wife.

As she stood with the coat in her hand she remembered she had been so happy; she could recall each word he had said, each kiss he had given; and his arms, his dear arms, how tenderly, how closely, how fondly they had held her!

She sank into a chair, the coat now close against her breast. A little sob rose in her throat, tears came into her eyes. It was all over—all over! His arms would never hold her again, his lips would never kiss her more!

Outside it grew darker still. She felt sad and lonely and she must go soon. She had cut the ground under her feet, burned her boats behind her; he would be wondering why she did not go.

If only he would come to her! After all he did love her; she knew that well. They had been foolish—proud. If only he would come.

She lifted the coat. Then, while in the semi-darkness the color burned in her face, she threw it around her—drew the arms right across her. A faint smell of smoke clung to it yet. She could almost fancy she was in his arms, that their quarrel was a dream, that she was not leaving his home and hers forever.

He had laughed at her often for keeping the old coat, for loving it almost as though it were something human. She would take it away with her; he would never miss it.

And then, quietly, she began to cry, her soft cheek pressed to the old velvet, sometimes her quivering lips. If only he would come to her! How could she go away?

How long she cried, quietly but bitterly—how soon, utterly exhausted, she dropped to sleep—she did not know. The opening of the door aroused her; the switching on of the electric light. And once more husband and wife—almost children both—looked at one another.

Looked at and understood that parting was impossible, the love was still there; looked while, as his eyes fell upon the old velvet coat, and he understood, a flush swept her face. Then, with one swift stride, wife and coat all were taken into a passionate embrace, words of love and forgiveness stumbled across their lips, and parting was something that would never come while life should last.—Alice Maud Meadows, in Chicago Tribune.

How Are You on Pronunciation?

The following rather curious piece of composition was placed upon the blackboard at a certain teacher's institute and a prize dictionary offered to any person who could read it and pronounce every word correctly. The book was not carried off, as twelve was the lowest number of mistakes made in the pronunciation:

"A sacrilegious son of Belial who had suffered from bronchitis, having exhausted his finances in order to make good the deficit, resolved to ally himself to a comely, lenient and docile young lady of the Malay or Caucasian race. He accordingly purchased a calliope and coral necklace of chameleon hue and securing a suite of rooms at a principal hotel, engaged the head as his coadjutor, then dispatching a letter of the most unexceptionable caligraphy extant, invited the young lady to a matinee. She revolted at the idea, refusing to consider herself sacrificable to his desires, and sent a polite note of refusal, on receiving which he procured a carbine and a bowie knife, said that he would now forge fetters hymeneal with the queen, and went to an isolated spot, severed his jugular vein and discharged the contents of the carbine into his abdomen. The debris was removed by the coroner."

The mistakes in pronunciation were made on the following words:

Sacrilegious, Belial, bronchitis, exhausted, deficit, finances, comely, lenient, docile, Malay, calliope, chameleon, suite, coadjutor, caligraphy, matinee, sacrificable, hymeneal, carbine, isolated, jugular and debris.

The Case of the Home Girl.

"What can a home girl do to develop herself physically?" asked a girl of the woman who boasts of having developed more women athletes than any other woman in the world. "I do not want to become an athlete, or to join a gymnasium."

The teacher glanced at the well-built figure and answered: "You are too stout, to begin with. Before you can be developed you must reduce your weight.

"The home girl," the teacher went on, "suffers from many things which do not affect the business girl, the society woman and the girl athlete. She has what physical culture teachers might call hometis. It comes from staying in the house too much.

"The home girl may be active, but it is the wrong kind of activity. She eats, but she eats the wrong food. She breathes the air, but is the wrong kind of air. She lives in the wrong way.

"The home girl is worse off from a physical-culture outlook than the girl who has to work hard out of doors. Window cleaners, women who sell papers on the corners, those who canvass from house to house and those who do other work of an out-door nature get the fresh air at least. But the home girl does not always succeed in obtaining the same treat.

"Recently we had a pupil, a girl who wanted to become better in shape and in general health. She was a home girl.

"On being questioned she confessed that she sewed three long hours every day, helped in various ways and dislodged the dust from the bric-a-brac for an hour of the day and took care of the children. The remainder of the time, some six or eight hours, she devoted to reading.

"She was fat, poor in complexion and round shouldered. She walked horribly, and she had indigestion.

"The average home girl has to overcome a liking for sweets and a tendency to indigestion She has a poor figure, is inclined to stoop and has a distaste for fresh air and walking. She also has a set of brittle teeth, very dull hair and heavy looking eyes.

"In addition, the home girl has to overcome a tendency to sleep too much. You see, she has many things to contend with, this home girl.

"Well, her first duty must be to learn to walk well. To do this she must learn to wear the right kind of shoes.

"It is not flat shoes you want, nor high-heeled shoes, nor shoes with curved insteps, nor any other one kind of shoes. But you want shoes that fit your feet. Experiment until you find a shoe that reaches every part of your feet without pressing upon any particular joint or sensitive place. Then, when you have found this kind of a shoe, wear it.

"Wear different shoes on different days. A woman who walks a great deal and is always comfortable has her Monday shoes and her Tuesday shoes and her shoes for other days. She never has tired feet and never a corn. She wears different shoes on different days, with the result that the pressure

comes always upon a different part of the foot.

"The home girl need not go out to walk. She can take her walking exercise right in the house.

"To walk properly put on a loose suit. Let out all your bands before you begin to walk. Loosen your collar. Loosen the tops of your shoes if they are tight.

"Now the next thing is the right position. To walk properly and well, you must hold your head erect. To be sure you are holding your head as you should hold it, lift a light chair and carry it on top of your head. This will insure a correct carriage of the head and will develop the muscles of the neck and arms.

"Breathe deeply as you walk. Start off with a firm, erect carriage. Stride along. Move gracefully, if you can. And remember that if you walk as you should walk, grace will surely come to you. Walk about a room like this daily and you will soon see the good result.

"The home girl is looking for economical exercises. I know one girl who developed her chest by doing stunts with the piano stool. She played leap frog over it, she jumped over it putting one foot on it, going over it as though she were jumping a hedge.

"Then this girl practiced a diving movement. Standing erect in the seat of a chair, she would put the palms of her hands together and pretend to dive forward. She would lift her hands very high, touch the tips of the fingers together, dive forward, and just save herself from falling.

"Home girls and home women who are too fat must do these things.

"Breathe deeply three times a day, fifty breaths each time.

"Open the window, top and bottom, while breathing, so as to get a pure-air supply.

"Walk five miles a day, if only around the center table. March at least an hour around the table, making it in two installments of half an hour each time.

"Practice simple athletics with a light chair.

"Practice diving, jumping, bending and stretching.

"And finally, teach the muscles! Ascertain which are your weak muscles and teach them to do their work.

"The home woman must not eat too much candy. She must not eat between meals. She must not eat too rich food. She must get out and exercise after her middle meal. And she must learn what foods agree with her. —N. Y. Sun.

Nursery Hints.

Compound camphor liniment rubbed into a child's hair from time to time will aid materially in strengthening the growth. Olive oil is also good for this purpose. Do not use much at a time or the child's head will present a greasy appearance.

For sore throats — First rub all the front of the throat with menthol. Then wet a handkerchief, tie around the throat, and over the handkerchief put a piece of oil silk. One application generally effects a cure, as this acts like a poultice. Second Remedy for Sore Tonsils. — Get a wooden skewer, cover the point smoothly with a wadding, and paint the tonsils with a mixture of tannin and glycerine, using the skewer as a paint-brush. This is a certain cure.

An oiled jacket has given many a poor child relief (and adults, too) in bronchitis and chest affections. Get a piece of lint, fold it in half, have it long enough to reach from the neck to the pit of the stomach. Cut a hole in the fold large enough for the head to pass through, wring it out tightly in warm linseed oil, and apply it to the patient at once, one-half going over the back, the other the chest. Cover it with cotton wool and bandage to keep in place. Change twice a week.

If the nursery is overheated, baby's system will become relaxed. If too cold, baby's vitality will be reduced. If the air is impure, the baby will be liable to chest disease. The proper temperature is 65° at first; then 60° thereafter. — Health.

Damp Rooms.

To ascertain whether or not a room is damp, about a couple of pounds of fresh lime should be placed therein after hermetically closing doors and windows. In twenty-four hours it should be weighed, and if the lime has absorbed more than about 1% of water the room should be considered damp and classed as unhealthy. The question of the dampness of dwellings is a frequent cause of dispute between landlord and tenant, and is naturally solved in the negative by the former. The question can be settled in the future by the test of the hydration of lime, which will give irrefutable proof of the validity of such complaint.

Always put the sugar used in a pie in the center of the fruit, not at the top, as this makes the paste sodden.

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The Largest Educational Institution in the World.
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Buildings owned and occupied in Scranton, 5.
Total floor space of buildings, 7 acres.
Cost of buildings, $550,000.
Number of employes, 3200.
Total number of students and graduates, Feb. 1, 1905, 755,000.
Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
Cost of preparation of textbooks and instruction papers, not counting printing, revisions, etc., $1,000,000.
Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.
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Wallpaper Designer	Teacher	Heat and Ventilator Engineer
Linoleum Designer	Commercial Law	Civil Engineer
Bookcover Designer	Navigator	Bridge Engineer
Draftsman	Sheet Metal Worker	Municipal Engineer
Ornamental Designer	Electrical Engineer	Hydraulic Engineer
Sign Painter	Electric Machine Designer	R. R. Construction Engineer
Stationary Engineer	Dynamo Tender	Surveyor
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The Markets.

San Francisco Produce Report.

San Francisco, April 5, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 11⅝@1 12⅛	87⅝@ 88⅞
Thursday	1 12 @1 12⅝	87½@ 88⅞
Friday	1 11⅞@1 12¼	89¼@ 89⅝
Saturday	1 12¾@1 13	87¾@ 88¼
Monday	1 12¾@1 14	87 @ 88⅜
*Tuesday	——@——	——@——

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	46⅛@46⅜	46⅝@46⅞
Thursday	46¼@47⅛	46⅝@47⅛
Friday	47⅛@47⅜	47@47⅜
Saturday	47¼@47⅛	47⅛@47⅝
Monday	46⅜@47⅝	47 @47⅛
*Tuesday	——@——	——@——

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 43 @1 42½	$1 27½@1 27¾
Friday	1 42½@——	1 28½@1 28
Saturday	1 42 @1 42¾	1 28 @——
Monday	1 43 @——	——@——
Tuesday	——@——	1 27½@1 28
Wednesday	——@——	1 28½@——

*Holiday—election.

Wheat.

In consequence of the slim offerings and the entire absence of export trade, there is so little doing at present in wheat in this center that values are poorly defined. Inquiry is largely for choice to select milling wheat, which is particularly difficult to obtain in anything like wholesale quantity and commands fully as stiff figures as for some time past. Eastern and foreign markets have ruled weak most of the time since last review. If there was any export business doing, it is doubtful if $1.37½ could be realized in a regular way for No. 1 wheat delivered alongside. This was the quotable figure a year ago when Liverpool was higher and freight rates were nominally lower than now. There is nothing doing in grain charters for immediate loading, but it is doubtful if ships could be secured for wheat at present much under 20 shillings, usual option of European ports. There has been some chartering of ships to arrive at 22s. 6d. for September-October loading, to Cork for orders, 1s. 3d. less to direct port. The ocean tonnage in port and headed this way is lighter than a year ago, but it is likely to prove ample for all requirements, footing up 235,000 registered tons, as against 310,000 tons at corresponding date last year.

California Milling	$1 55	@1 62½
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 wheat	1 40	@1 45
Oregon Club	1 40	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.42⅛@1.43.
December, 1905, delivery, $1 27½@1.28½.

Wednesday, at the forenoon session of Exchange, for May, 1905, wheat $1.42⅝ was bid; December, 1905, sold at $1.28½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7s0½d@7s1d	6s10d@—s-d
Freight rates	16@ s	17½@—s
Local market	$1 37½@1 40	$1 40 @1 45

Flour.

Business is of fair volume, considering the limited offerings of desirable qualities and the absence of undue selling pressure on good to choice flour. While the outward movement is not heavy, it is showing some increase as compared with several months past. In quotable values there are no changes to record.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Offerings of this cereal are light and are sure to continue so until the opening of the new season. Demand is principally for feed descriptions, prevailing values for which are being well maintained. A year ago there were 18,634 tons in the regular warehouses of Port Costa, Stockton and this city. Stocks in same warehouses are now reported at 8374 tons. Some chartering of ships for new crop barley is reported at 23s. 9d. to Cork for orders, 1s. 3d. less to direct port, September-October loading. December option of No. 1 feed has been selling within range of 88@89c., as against 98½c@$1 for same delivery at corresponding time last year. The acreage is estimated to be larger than last season and freight rates outward are stiffer than a year ago.

Feed, No. 1 to choice	$1 22½	@1 25
Feed, fair to good	1 20	@1 22½
Brewing, No. 1 to choice	1 25	@1 30
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 22½

Oats.

Offerings are largely common grades of feed oats and for this description the market is devoid of firmness. Supplies are mostly in second hands, however, and cost close to prices being asked. Choice to select oats are in such scanty supply as to hardly admit of quotations. Stocks of oats in city warehouses on 1st inst. were reported at 4,230 tons and a year ago in same warehouses were 3,036 tons. Prices then were lower than now, the quotable range on whites early in April, 1904, being $1 27½@1.40, as to quality.

White oats, fancy feed	$1 55	@1 60
White, good to choice	1 47½	@1 52½
White, poor to fair	1 40	@1 45
Milling	1 45	@1 60
Black oats	1 35	@1 70
Red, fair to choice	1 35	@1 60

Corn.

Spot stocks are not heavy, only 110 tons being reported in city warehouses on 1st. inst., as against 251 tons a month ago, and 190 tons at corresponding date last year. Eastern is being offered more freely to arrive, however, than for some time past, and market for same is easier in tone. Choice California Large White and Small Yellow are in scanty supply and salable to advantage.

Large White, good to choice Cal	$1 40	@1 45
Large Yellow	1 35	@1 40
Small Yellow	1 65	@1 90
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 35	@1 40

Rye.

Market is almost bare of desirable stock and is decidedly firm.

Good to choice	$1 60	@1 65

Buckwheat.

Very little offering and, aside from limited quantities in hands of millers, spot stocks are insignificant.

Good to choice	$2 00	@2 25

Beans.

Demand is not brisk, but good to choice beans of most varieties are very steadily held, stocks of desirable qualities being by no means heavy. Beans which have been damaged or are badly mixed are going at irregular prices and less than quotations, some selling as low as $1 per cental. Stocks of beans in city warehouses and on seawall on 1st inst. were reported at 145,725 sacks and on March 1st were 146,507 sacks.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 60	@2 85
Pinks	3 25	@3 75
Bayos, good to choice	3 00	@3 25
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	4 75	@5 00
Black-eye Beans	2 60	@2 90

Dried Peas.

Few of any kind now on the market. There is some inquiry for Green and choice could be readily placed at good figures.

Green Peas, California	1 50	@2 05
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The local market is quiet, and in the absence of any noteworthy trading, values are poorly defined. To purchase freely, full current quotations or more would have to be paid, while if selling pressure was exerted lower prices than below named would probably have to be accepted. The New York Producers' Price Current reports as follows: "From this State a very dull market is reported, and we do not hear of any transactions; dealers are not in the market, while holders of remaining lots continue firm in their ideas. Business in contracts seems to be at a standstill, as growers and dealers are still apart in their views. Some transactions in Pacifics reported on the local market at 24½c. and a large block has been offered at this figure but found no takers. Business with brewers continues exceedingly quiet, and to make sales, concessions would have to be granted."

California, good to choice, 1904 crop	24	@26

Wool.

Spring clip is arriving in moderate quantity, representing mainly purchases effected in the interior. The season has been exceedingly favorable for wool growing and the spring clip in this State promises to be of high average quality. Quotations continue largely nominal in the absence of any noteworthy trading in this center, but to be in keeping with conditions abroad, California wools this season should bring 3@4c per lb. more than a year ago. A Montana clip, estimated at 800,000 lbs., has been sold prior to shearing to a Boston firm at 22½c per lb.

SPRING.

Northern, free	22	@24
Northern, defective	18	@21
Middle County, free	20	@22
Middle County, defective	17	@19
San Joaquin and Southern, free	16	@17½
San Joaquin and Southern, defective	13	@15
Southern lambs, as to quality	13	@16½
Oregon, good to choice	20	@23
Nevada	16	@22

Hay and Straw.

For the general run of offerings the market is dull and weak. Strictly select Wheat and choice Tame Oat are scarce, but medium grades are in excessive stock. The Government transport Dix took about 2,500 tons hay for Manila. Scarcely any straw arriving and little or no inquiry for it, cheap hay taking its place.

Wheat, good to choice	$11 00	@ 13 00
Wheat and Oat	9 00	@ 11 50
Tame Oat, fair to choice	8 00	@ 10 50
Wild Oat	7 00	@ 9 00
Barley	8 00	@ 10 00
Alfalfa	7 00	@ 10 00
Clover	6 00	@ 9 50
Stock hay	6 00	@ 7 50
Compressed	11 00	@ 13 00
Straw, ₱ bale	25	@ 50

Millstuffs.

Stocks of Bran and Middlings are light and in few hands. Only 45 tons of Bran were reported in city warehouses on 1st inst., as against 325 tons on March 1st, and 409 tons on April 1, 1904. Rolled Barley is steadily held. Market for Milled Corn presents an easy tone.

Alfalfa Meal, ₱ ton	$21 00	@ 22 50
Bran, ₱ ton	21 00	@ 22 00
Middlings	25 00	@ 28 00
Shorts, Oregon	21 00	@ 22 50
Barley, Rolled	26 00	@ 26 50
Cornmeal	29 00	@ 29 50
Cracked Corn	29 50	@ 30 00
Oilcake Meal	32 50	@ 34 00

Seeds.

Little doing in Alfalfa; considerable offering which has a mixture of clover burr or is otherwise off in quality and for such it is difficult to secure any sort of a bid. Yellow Mustard is in moderate stock but market is practically bare of Brown or Trieste. Bird seed is in fair supply.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
	Per lb.	
Alfalfa	8	@12½
Canary	6¼	@ 6½
Rape	1¾	@ 2¼
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

New crop honey is expected on the market in the near future. Indications are there will be a fairly liberal yield in this State and the quality of high average. No large quantities of 1904 honey now on market, but inquiry for same is light and business is mostly of a small jobbing character.

Extracted, White Liquid	6	@ 6½
Extracted, Light Amber	4½	@ 5½
Extracted, Amber	3¾	@ 4¼
Extracted, Dark Amber	3	@ 3½
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

A shipment of 3,002 pounds went forward this week by steamer for Belgium. Values are steady.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Market for Beef is quiet and values without material change. Large Veal is in fairly liberal receipt and market for same is easy in tone. Small Veal is in fair supply. Mutton is arriving rather freely as compared with the immediate demand and is showing generally fine quality. Spring Lamb is in moderate stock. Hogs are not in heavy receipt, neither are many required to satisfy the demand at existing values.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½	@ 6
Beef, 2nd quality	5	@—
Beef, 3rd quality	4½	@ 5
Mutton—ewes, 6@7c; wethers	7	@ —
Hogs, hard grain, 130 to 200 lbs	5¾	@—
Hogs, large, hard, over 200 pounds	5½	@ 5¾
Hogs, small, fat	5½	@ 5⅝
Veal, large, ₱ lb	5	@ 7
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8½	@—
Lamb, spring, ₱ lb	11	@—

Hides, Skins and Tallow.

Hides and Pelts in prime condition are not lacking for custom, values remaining quotably as last noted. Tallow is in fair request for shipment. The steamer Peru, sailing Saturday, took 62,258 pounds for Central America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11	— @10
Medium Steers, 48 to 56 lbs	— @10½	— @ 9½
Light Steers, under 48 lbs	— @ 9½	— @ 9
Heavy Cow Hides, over 50 lbs	— @10	— @ 9
Light Cow Hides, under 50 lbs	— @ 9½	— @ 8½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	— @11	— @10
Wet Salted Veal	— @11½	— @10½
Wet Salted Calf	— @12½	— @11½
Dry Hides	— @18	— @17
Dry Kip and Veal, 11 to 16 lbs	— @15	— @13
Dry Calf, under 4 lbs	— @20	— @18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@——	
Horse Hides, salted, medium	2 75@——	
Horse Hides, salted, small	2 25@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Market is quiet and not much activity is expected in this department for a month or two. Grain bags are being steadily held.

Bean Bags	$ 4¾@5	
Fruit Sacks, cotton	6½@7½	
Fruit Sacks, jute, as to quality	5¾@7	
Grain Bags, Calcutta, 22x36, spot	6 @6½	
Grain Bags, Calcutta, buyer June-July	6½@6¼	
Wool Sacks, 4-lb	32 @——	
Wool Sacks, 3¼ lb	30 @——	

Poultry.

There were no heavy receipts of poultry of any description and market was firm for good to choice. Large and fat Hens were actively sought after. Inquiry was also brisk for full grown and spurless Young Roosters, large and fat Ducks and fine Goslings. There was not much demand for Turkeys. The Pigeon market was moderately firm for choice Young, but quiet for Old.

Turkeys, Dressed, choice, ₱ lb	$ 21	@ 23
Turkeys, live gobblers, ₱ lb	18	@ 21
Turkeys, live hens ₱ lb	18	@ 21
Hens, California, ₱ dozen	5 50	@ 6 50
Hens, large	6 50	@ 7 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	7 00	@ 7 50
Fryers	6 00	@ 6 50
Broilers, large	4 50	@ 5 00
Broilers, small to medium	3 00	@ 3 50
Ducks, old, ₱ dozen	6 00	@ 7 00
Ducks, large young, ₱ dozen	7 00	@ 8 00
Geese, ₱ pair	2 25	@ 2 50
Goslings, ₱ pair	3 00	@ 3 50
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	2 25	@ 2 50

Butter.

The shipping demand was much lighter than for some weeks preceding, and with receipts on the increase the market was weak and lower, more particularly for high-grade stock, which was in heaviest supply. Cooking and pastry butter brought relatively the best figures. After May 19th squares and rolls must have the weight marked on wrappers. Dealers advise two pounds and one pound as the weights for squares under the new law.

Creamery, extras, ₱ lb	20	@—
Creamery, firsts	19	@—
Creamery, seconds	18	@—
Dairy, select	19	@—
Dairy, firsts	18	@—
Dairy, seconds	17	@—
Mixed Store	16	@17

Cheese.

Stocks of all descriptions are of quite moderate proportions and market is firm for desirable qualities, with fairly active demand. Some sections which ordinarily draw heavily on the East are now buying in this market.

California, fancy flat, new	13	@—
California, good to choice	12	@12½
California, fair to good	11	@12
California, "Young Americas"	11½	@13½
Eastern	16½	@17½

Eggs.

Although there were heavy receipts, the market showed more firmness than previous week, the weather being favorable for storing and the speculative demand being active. Inquiry for immediate use was also brisk.

California, select, large, white and fresh	18	@19
California, select, irregular color & size	16½	@17½
California, good to choice store	16	@17
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Asparagus brought better average prices than previous week. Green Peas were in fair receipt. String Beans were in increased supply and lower. Rhubarb was plentiful and sold at a wide range, owing to great differences in quality. Prices for Onions were advanced, with stocks mostly in few hands.

Asparagus, No. 1 to choice, ₱ lb	5½@	7
Asparagus, No. 2, ₱ lb	4 @	5
Beans, Lima, ₱ lb	— @	—
Beans, String, ₱ lb	8 @	10
Beans, Wax, ₱ lb	— @	—
Cabbage, choice garden, ₱ 100 lbs	50 @	—
Egg Plant, ₱ lb	— @	—
Garlic, ₱ lb	8 @	10
Mushrooms, ₱ lb	— @	—
Onions, Yellow Danver, ₱ ctl	3 50 @	3 75
Peas, Green, ₱ lb	4 @	6
Peppers, Bell, ₱ lb	— @	—
Peppers, Green, ₱ lb	15 @	20
Rhubarb, ₱ box	40 @	1 00
Summer Squash, small box	1 25 @	1 50
Tomatoes, Los Angeles, ₱ box	1 00 @	1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Choice Burbank Seedlings were in good request and met with a firm market. Common qualities were not much sought after and were in liberal supply. Inquiry for seed potatoes is now light. New potatoes are arriving in moderate quantity, mainly from near-by points.

Cal. Early Rose, ₱ cental	— @	—
Salinas Burbanks, ₱ cental	— @	—
River Burbanks, ₱ cental	50 @	1 00
River Reds, ₱ cental	65 @	85
Oregon Burbanks, ₱ cental	1 00 @	1 60
New Potatoes, ₱ cental	2 50 @	3 50
Sweet Potatoes, ₱ cental	75 @	—

Fresh Fruits.

Apples are in fairly liberal stock for this advanced date, mostly cold storage holdings, with inquiry only moderate and mainly for select table fruit. Early vegetables are for the time being taking the place of common Apples with many consumers. Strawberries were not in heavy receipt and included few which could be termed strictly choice. Sales of Longworths were mainly within range of 50c. @$1 per drawer, and Malindas at 35@60c. per drawer. A few Raspberries of only fair quality arrived from Temescal and sold at 40@50c. per small basket.

Apples, fancy, ₱ 50-box	2 00	@	2 25
Apples, good to choice, 50-lb. bx	1 50	@	2 00
Apples, fair to good, ₱ box	1 00	@	1 50

Dried Fruits.

There is considerable dried fruit going outward, particularly of Prunes, and more of other kinds would be taken on shipping orders were stocks sufficiently large to permit. The steamer Umatilla, sailing March 31st for British Columbia, carried 111,370 lbs. dried fruit, including 93,225 lbs. Prunes, and of latter quantity 73,125 lbs. were for Winnipeg. The Prune market presents a firmer tone, but no advances have been established in quotable values. Peaches are in light stock and are mostly of the higher grades. On the other hand, strictly high grade Pears are scarce, while medium and common qualities are in fair supply, with not much inquiry for latter kinds, and holders disposed to grant concessions to effect transfers worthy of note. Apples are in quite limited supply. Pitted Plums of desirable quality make at present a very slim showing.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5 @ 5½
Apples, extra choice to fancy, 50-lb boxes	6 @ 7
Apricots, Moorpark	10 @12
Apricots, Royal, good to choice, ₱ lb	8½@ 9½
Apricots, Royal, fancy	10 @11
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ₱ lb	6½@ 7
Pears, choice to fancy	7½@10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes, 1¼@1¾c; 40-50s, 4@4¼c; 50-60s, 2½@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1½@1¾c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

There is a moderate movement in Seeded Raisins and in Loose Muscatels. Quotations are unchanged, but in some instances dealers are shading prices.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4-crown, 20-lb box	— @1 30
Dehesas, 20-lb box	— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	3¾@4 c
4-Crown Standard	4¼@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Oranges were in lighter receipt than previous week, rainy weather in the Southern section part of the time interfering with picking. For strictly choice oranges, showing no sign of decay, the market was firm, such stock being in good demand. Many of the oranges on market showed decay spots and this fruit went at irregular and low figures. Lemons were in ample supply and prices were without quotable change, although the demand showed some improvement. Limes were in sufficient stock for current needs and were offering at same figures current for several weeks past.

Oranges, Navels, choice to fancy, ₱ bx	1 50	@2 00	
Oranges, Navels, fair to good, ₱ box	1 00	@1 25	
Oranges, Seedlings, ₱ box	1 00	@1 25	
Oranges, Cal. Tangerines, half box	1 25	@1 75	
Oranges, Blood, ₱ box	—	@—	
Lemons, California, select, ₱ box	2 25	@2 50	
Lemons, California, good to choice	1 50	@2 00	
Lemons, California, fair to good	1 00	@1 50	
Grape Fruit, ₱ box	1 50	@2 50	
Limes, Mexican, ₱ box	4 00	@4 50	

Nuts.

Almonds of prime to choice quality are not in heavy stock, and are being in the main steadily held, but movement in them is light. There are few strictly No. 1 Walnuts offering and for such the market is firm.

Chestnuts, Italian, ₱ lb	— @—
Nonpareil Almonds	13 @16
Ne Plus Ultra Almonds	11 @14
Languedoc Almonds	8 @11
Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

Wholesale wine market remains practically as last noted, giving no evidence of any special activity in this center. Dry wines of 1904 are quoted at 14@17c. per gallon for fair to choice, San Francisco delivery, and little of high grade offering. Sweet wines of last vintage are quoted at 25c. per gallon for prime quality delivered at wineries, jobbing at 27½c. per gallon San Francisco. Receipts of wine at this center last week were 360,700 gallons and for previous week 265,450 gallons. Receipts for March were 1,263,400 gallons, and for March, 1904, were 1,907,685 gallons. The steamer Peru, sailing Saturday last, carried 44,293 gallons, mostly for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	75,288	3,547,675	4,356,792
Wheat, ctls	32,377	2,389,615	1,902,210
Barley, ctls	28,565	3,066,974	4,942,016
Oats, ctls	12,097	801,121	799,555
Corn, ctls	10,597	173,334	129,392
Rye, ctls	65	45,835	47,629
Beans, sks	9,495	580,365	658,574
Potatoes, sks	28,978	1,071,647	1,077,904
Onions, sks	5,273	115,862	131,251
Hay, tons	3,886	147,158	140,754
Wool, bales	840	43,934	39,066
Hops, bales	350	38,079	29,035

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	24,944	2,361,292	2,836,440
Wheat, ctls	1,404	803,157	831,010
Barley, ctls	11,274	1,816,498	3,907,763
Oats, ctls	204	75,696	19,119
Corn, ctls	1,183	82,696	15,734
Beans, sks	1,158	45,525	35,102
Hay, bales	1,830	203,347	199,419
Wool, lbs	....	830,690	1,848,923
Hops, lbs	1,204	348,421	577,510
Honey, cases	56	2,109	4,303
Potatoes, pkgs	1,580	95,397	93,204

WILL GROW COTTON.—Gridley Herald: George Thresher, the well-known farmer, whose ranch lies along Feather river, southeast of town, will experiment this season with cotton. He will plant some of the seed on the bottom land and some on the higher ground and will water the latter. Experiments with this plant have been tried in this vicinity within the past few years, and on the Ord ranch the cotton stalks grew vigorously and produced a fine crop of bolls. Those who were familiar with the cotton grown in the South pronounced that grown in these experiments to be first class. Mr. Thresher desires to test the plants on upland particularly, and in this respect his attempt will be a new departure for this section.

DOCTOR WARNED HIM TO NO PURPOSE.—Ukiah special to Sacramento Bee: An obstinate Portuguese who lived near the town of Picta had a sick horse and consulted a veterinarian as to the animal's trouble. He was told that his horse had the glanders, that it was past curing, and that he had better shoot the animal. Above all, he was warned to be very careful or he would get the disease himself. The Portuguese was positive his horse did not have the glanders, and, to convince a friend, took a drink out of the horse's bucket after watering the animal. Seventeen days afterwards the Portuguese died in terrible agony, having contracted the disease by drinking from the horse's bucket.

SUCCESSFUL VACCINATION against Blackleg has been extensively practiced in this country for over ten years. The Pasteur Vaccine Co., Ltd., Chicago, New York, San Francisco, are the only ones supplying the Pasteur Vaccine, the kind made by the discoverers. "Blacklegine" is the trade-mark name of Pasteur Vaccine, ready for use. Write the Pasteur Company for special literature on this subject.

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A Visit to American River Grange.

To the Editor:—Saturday morning, bound for a good Grange time, were Brother and Sister Flint driving their fine span of bays, followed by Worthy Master Dart of Elk Grove Grange with his pair of browns to his carriage, filled with his own family of Grangers, and they followed by the writer driving an Electioneer-Wilkes colt to a Rumsey cart—all speeding along the American river road for a visit to the American River Grange. On our arrival we were met by Brother and Sister George Lawndson, who are always on hand to receive their invited Grangers, and right royally too. They had in store for us a surprise. It was the work of the third degree, carried out by its able officere to perfection. Many of the Masters and Past Masters were loud in praise of the working of the Grange.

There are more young Grangers in this Grange than in any Grange I have visited in California. Worthy Master McDonald, a young man born in the neighborhood of the Grange, is well up in the work. He kept everything going and everybody happy all day long. He was the right man in the right place.

Brother Hack of Sacramento Grange made a fine talk on co-operation. Worthy Overseer Griffith of the State Grange was in his happy mood and delivered a good address for the good of the order. Brother Flint addressed the young class on the benefits of education in the Grange. Sister Emery of Oakland Grange spoke of the benefits to be derived by sisters in the Grange and its social features.

We were then invited to the harvest feast, led by Past Master Flint and Sister Emery. And I assure you we were well taken care of, not by the old Grangers as is the usual custom, but by the young Grangers who were all raised within 5 miles of the hall. Having finished the harvest feast, we returned to the hall, where addresses were made for the good of the country by Brother Gould of Roseville Grange, Brother Farnum, Sister Fitzgerald and Sister Flint. There was a song by Brother Slawson, a solo by Sister Hansen and a recitation by Sister Robinson. When we left we felt that we were more than paid for a day off the farm, and many were the well wishes for American River Grangers. Thomas Waite.

Perkins.

More Granges.

To the Editor:—Bro. John S. Dore and the writer, after enjoying a most sociable and practical all-day session, with basket dinner in our home, West Park Grange, last Tuesday, started for San Joaquin county. We left at 4 A. M. on Wednesday, driving 6 miles to Fresno, and boarded the train for Manteca.

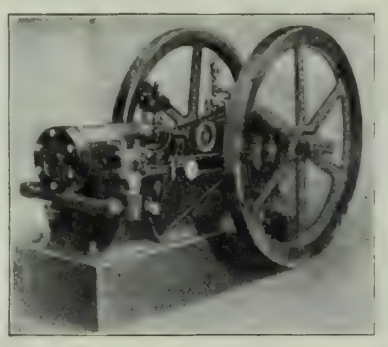
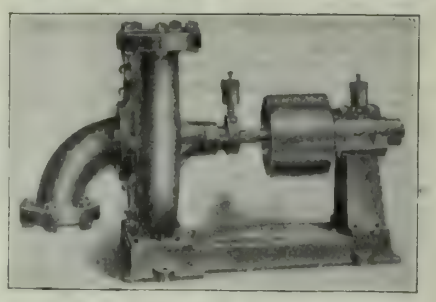
At Manteca.—Bros. L. Larsen and F. M. Cowell met us and each took one of us on a house-to-house canvassing tour. I visited the school, told some amusing stories and gave words of advice and encouragement, and, in return, obtained a promise that the pupils would extensively advertise our public meeting at night. A cold, raw wind blew all afternoon and night, but forty-two persons were present with a charter list of about fifty. Bro. Beecher of Stockton came over and assisted in organizing a Grange, with a solid, intelligent membership—full of promise for good work and permanence. The officers are: Master, B. A. Goodwin; Overseer, L. Larsen; Lecturer, Mrs. Goodwin; Steward, Geo. Salmon; Assistant Steward, E. Riddell; Secretary, Mrs. Dorothy Powell; Chaplain, Mrs. Cole; Gate Keeper, Edward Bicknell; Lady Assistant Steward, Miss Bertha Larsen; Pomona, Mrs. Bicknell; Ceres, Mrs. C L. Salmon; Flora, Mrs. Miller; Treasurer, F. M. Cowell. It is thought that in a short time the membership will increase well towards a hundred. It is a growing community of enterprising families. The once big wheat fields are being cut up into smaller holdings and homes. Water for irrigation is being introduced, and alfalfa, small fruits, vegetables and trees flourish. Here and around Ripon is a vast body of good land, that is rapidly changing from grain fields to dairy farms and homes. There is abundance of water some 16 feet below the surface, so that where irrigation is not feasible, pumping plants can be installed.

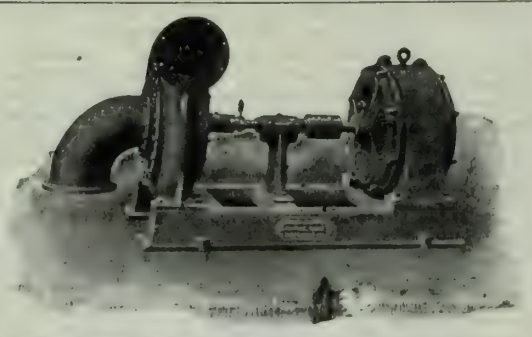
At Ripon.—At Ripon we found wide-awake, public spirited men ready to take us around to interviews and canvassing for membership. The notice for the public meeting was short, but a number of most interested persons assembled in Odd Fellows' Hall and Ripon Grange was organized with the following officers, with the rest to be elected at the next meeting: Master, A. J. Nourse; Overseer, F. Bodeson; Steward, T. C. Hughes; Assistant Steward, Roy Buchanan; Lady Assistant Steward, Mrs. A. J. Overheiser; Treasurer, W. P. Speaker; Secretary, F. A. Lattin; Gate Keeper, Roy Nutt.

There are several other points in this splendid county where we will probably organize and these, with Stockton, French Camp (doing finely), Manteca and Ripon Granges, will make an excellent Pomona Grange. In all the localities we find former Patrons of Husbandry. At Ripon the sad word came of the death of Past State Master and Master of Stockton Grange, Bro. W. L. Overhiser. Appropriate resolutions of condolence were passed and ordered sent to the widow. In concluding this hurried and rambling report, I might say that Bro. Dore and I seem to be just "getting our hands in" on the organizing work. If other localities are ready for public meetings, and where Patrons or other interested persons would assist in securing charter lists, they might write Bro. John S. Dore or the writer, at Fresno, and, as State Deputies, we might be able to aid them.

J. W. Webb,
Master of West Park Grange.
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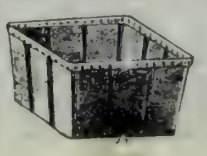
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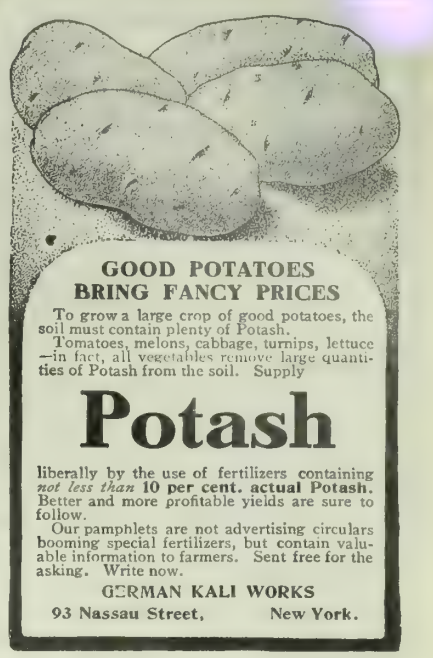
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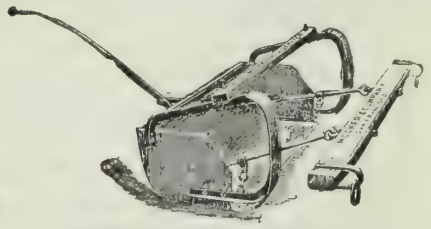
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THE KENNEL.

A Bit of the Dog Language.

J. W. Blake in Country Gentleman: A dog has three "parts of speech." These are his eyes, his voice and his tail. When, therefore, we follow the dictates of fashion and cut off a dog's tail we deprive him of one of his most valuable possessions, for he may greet us with his eyes and express unmistakable language with his voice, but the tail is the true index to his thoughts and feelings.

Certain positions, certain movements of this useful and ornamental appendage thus go largely toward swelling the vocabulary of the dog. The tail also occupies an important position in the sign language of the cat, and even of a bird; but a horse or cow has other uses for a tail besides talking with it, although they, as well as the deer and the rabbit and a few other creatures, make certain modified demonstrations with their tails which may be readily interpreted by a close observer of the ways of animals.

To prove this statement it is only necessary to watch a dog—that is, a dog with a natural tail. Then, by connecting certain emotions, which you have reason to know positively are circulating through his mind at the time, with the corresponding or associated movement of his tail, it will be found that these interpretations rarely vary, although they may be more or less forcibly expressed.

When a dog carries his tail very high and stiffly, as he often does at the approach of another dog or a stranger while he steps cautiously toward the intruder—inquisitiveness, watchfulness, suspicion or anger are indicated, either in combination or as a single emotion. We shall still further find that when he carries his tail stiffly, in a line straight with the body, it signifies deep interest, attention and watchfulness, not necessarily accompanied by anger. This is easily proved by the attitude of the bird dog while at field work. Away from the scene of action, however, this same position, accompanied by the side wags, denotes another frame of mind, and we may read pleasant thoughts, quiet anticipation and contentment; while a modification representing pride and gratified pleasure, well controlled, would be shown by an upright tail, waved gently at the tip.

The tail carried rather low but curved upward at the tip denotes ease of mind, acknowledgment of attention, quiet pleasure, and general "off duty" sensations. The same position, accompanied by slow wavings from side to side, seems to mean suffused pleasure, rather on the increase. Again, the same, if the waving is uneven in motion, with eyes fixed steadfastly upon the owner, should mean anticipation and entreaty. Once more, in that same tail position, this time wagged rapidly, we read joy and eager hopefulness.

When the upper portion of the tail is pressed rather close to the body, but the free end is curved upward and wagged rapidly, we find embarrassment, apology, a wish to conciliate, uncertainty and a generally undecided state of mind; and the tail tucked beneath the legs, as though in dread of being seized or bitten, may be understood to mean discouragement, depression, sickness, anxiety or self-consciousness. To continue the list of this disagreeable side of the dog we may readily read the most abject cowardice, dread or fear, especially when associated with whines and howls, if the tail is more snugly tucked between the legs and body drawn up in a cringing curve.

Waving or rolling the tail in a circle or beating it rapidly up and down, the movements accompanied by wild leaps and rushes, denote exaggerated and almost hysterical delight, also relief; and, finally, when in a sitting position, that gentle thumping of the dog's tail upon the ground or floor we may understand to mean in his language—polite attention, personal sympathy and the wish to attract notice, with its courteous acknowledgment when bestowed.

Taking these few renderings of the tail movements as a beginning, it is easy to see that a much larger vocabulary is possible. Nor should the ears be forgotten, for they play a part in the study of the dog language, although occupying a minor position in comparison with the importance of the tail.

THE VINEYARD.

Vine Planting in Livermore Valley.

Vineyardists are busy, says the Livermore Herald, in replanting portions of their vineyards which have been decimated by disease or in planting new land. The amounts to be planted by each are not large, as it is a very expensive undertaking and problematical at best. The list as far as obtainable is as follows: C. H. Wente, 12 acres; Patrick Callaghan, 15 acres; H. B. Wagoner, 18 acres; James Concannon, 10 acres; G. H. Hughes, 10 acres; Manager Coffmann of Vienna Vineyard, 18 acres; C. L. Crellin of Ruby Hill Vineyard, 10 acres; Wetmore-Bowen Company of Cresta Blanca Vineyard, 10 acres.

Nothing but resistant stock is being planted, divided between Rupestris St. George and Lenoir. There is considerable difference of opinion as to which stock is best suited to local conditions.

H. B. Wagoner, a grower of long experience and a close observer, holds to the belief that the St. George is the best, although he is by no means certain that it is thoroughly resistant.

C. L. Crellin, another local authority whose views are always given respectful consideration by growers, is a staunch advocate of the Lenoir, which he claims requires less attention and care, although not quite as thrifty in growth.

The amount of replanting done each year does not keep pace with the ravages of disease in vineyards; but planting with resistant stock is very expensive work, costing not less than $75 an acre, and, as before said, the result is problematical. Contrary to popular belief, the growers contend that it is not phylloxera as much as the San Jose disease that they fear. They are confident that they can successfully cope with the former with resistant stock and timely spraying; but the San Jose disease, which is closely akin to what is known as the Anaheim disease, has resisted all their efforts up to this time.

Many have contended that the two last-named diseases are caused by drouth, and that only vines debilitated through lack of moisture are attacked. Local growers claim that this is not true, as often the thriftiest and best nourished vines in vineyards are attacked.

The uncertainty coupled with the heavy expense makes the growers chary about planting; but they are all hopeful and declare that it will be only a matter of a few years until some remedy is found for all the ills to which our vineyards have fallen heir. They scout the claim made by pessimistic writers that the industry is doomed. Most of them seem to be of the opinion, however, that with but few exceptions only those growers having wineries of their own can afford to replant extensively.

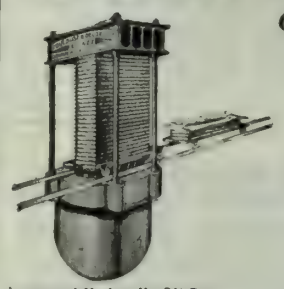
C. H. Wente has had instructions to prepare ground for the experimental vineyard which will be planted in the course of a few weeks under direction of George Husmann of the viticultural section of the United States Agricultural Department, and his assistant, Mr. Hecke. Every variety of resistant stock known will be planted in this tract and the results will be watched with great interest.

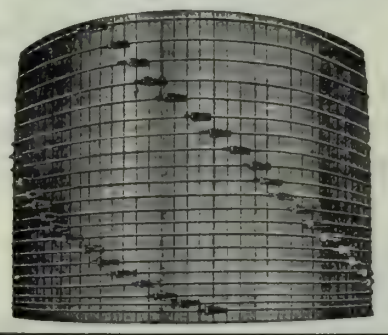
The Wetmore-Bowen Company maintains an experimental vineyard of its own at Cresta Blanca; but it has only been planted a couple of years, and it will be several years before any satisfactory results can be obtained.

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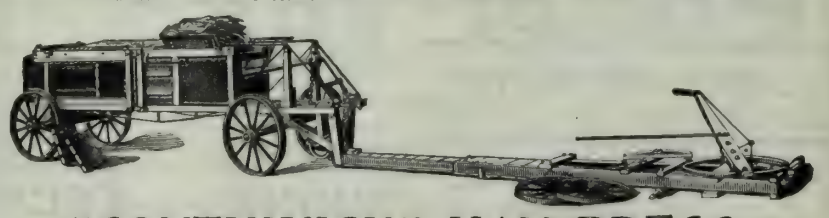
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A High Old Huckleberry.

Some one has written the Scientific American the following story: At Brookdale a fine but shallow-rooted specimen of the Sequoia Sempervirens, or California redwood, was blown over in a recent storm. The tree is estimated to be over 330 years old, measures 175 feet from butt to tip, and 60 feet in circumference. Ten feet from the top of the tree, and at a distance of 165 feet from the ground, was found a hole somewhat less than 2 feet deep. It had once been the nest of a woodpecker. In this hole had grown a sturdy, three-stalked huckleberry bush, 2 feet tall. Its roots, extending 6 feet into the heart of the tree, had absorbed the sap of the redwood. Decay had set into the tree, but the huckleberry had flourished, flowered, and borne fruit. The common theory is that the huckleberry seed had clung to the moist side of a tan oak acorn, and was thus carried by the woodpecker to his nest. It is evident from the gnarled, woody stalks that the bush is many years old. The shrub has been topped and transplanted to the native soil of its species, but it has sickened and is already shedding its leaves.

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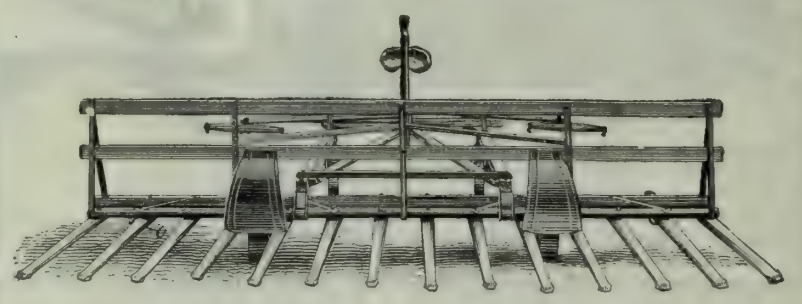
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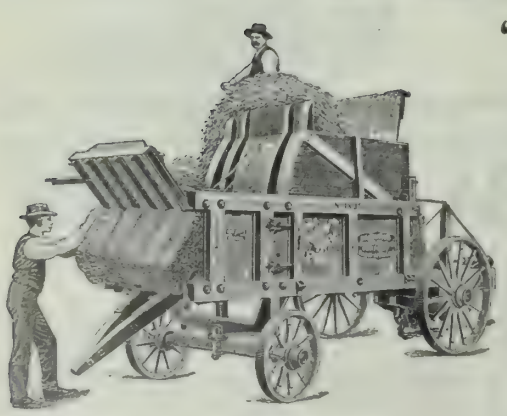
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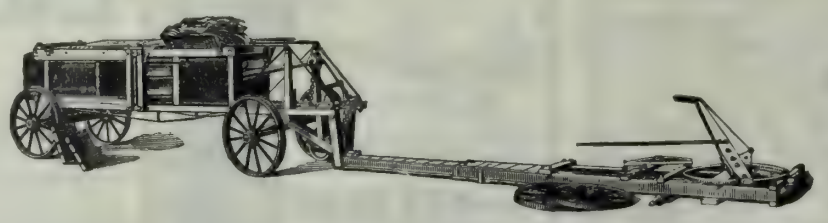


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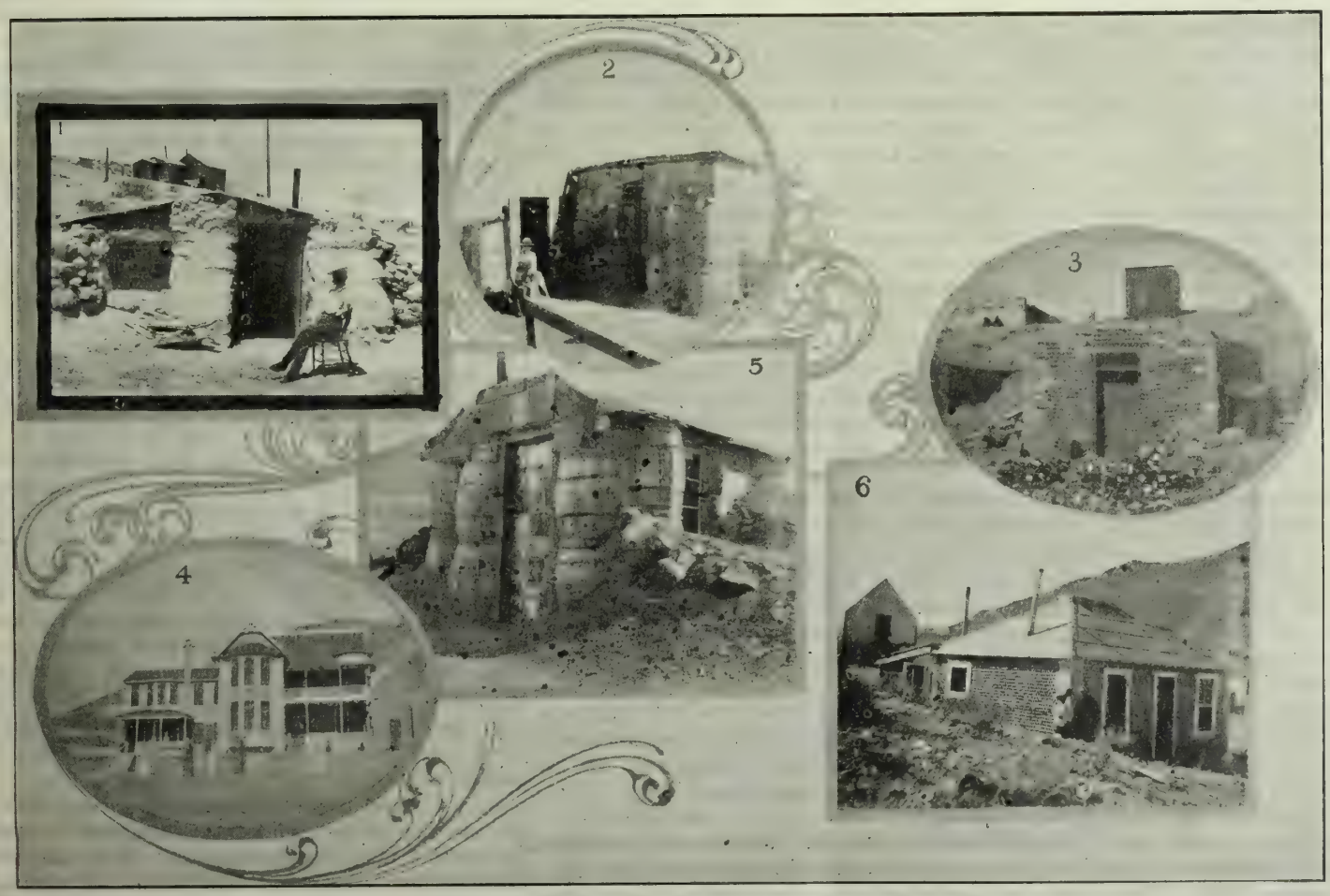
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Vol. LXIX. No. 15. SAN FRANCISCO, SATURDAY, APRIL 15, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Strange Habitations.

Agriculture can claim credit for placing some very strange habitations on the landscape, such as the sod houses of the central waste and the shake structures of the Pacific coast; but for variety in startling materials and impressive picturesqueness no calling can compare with mining. The new mining camps of Nevada are strictly up to date in this phase of creative art, and the accompanying plate gives a good idea of incongruity as well as of uniqueness. Here are seen a modern residence of substantial and home-like design, a house of bottles and another built partly of bottles and partly of stone. Two others have been constructed of barrels, gunny bags and old tin cans, while still another is built almost wholly of stone.



Grand, Gloomy and Peculiar Houses at Tonopah, Nevada.

In the desert city, frame houses and tent houses are to be seen by the hundreds. The mine improvements, however, even where such houses exist, are mostly of a substantial kind, and in some instances of higher class than are usually found in a mining district in the prospective stage of development.

Alfalfa Hay in Nevada.

Nevada is doing some very creditable things in the growing and feeding of alfalfa hay and will do much more through the increased area brought under irrigation by the government work with the waters of the Truckee river. The pictures used herewith represent the alfalfa hay stacks of Nevada.



Indications of Size of Nevada Alfalfa Hay Stacks and the Way They Are Made.

A recent investigation by the Nevada Experiment Station resulted in some very interesting statements about alfalfa growing for hay and the way the hay is turned into money. For instance, it is stated that the crop of first importance in the lower valley of the Humboldt, above Lovelocks, is alfalfa. The soil in this valley seems to be peculiarly well adapted to the growth of this crop. Some of the fields in this section have been producing crops of alfalfa for a quarter of a century and are still yielding profitable crops.

The difficulty of marketing the alfalfa crop as hay has given rise and encouragement to the growth of stock feeding. This industry forms the principal business of the ranchmen of the valley during the fall and winter months. The business as conducted here is simply for the purpose of marketing the hay. To prepare for feeding 1000 or more tons of hay, the ranchman must make an investment of $1500 to $2000 in corrals, feeding racks, watering troughs, wells, pumps, etc. This investment is considered essential for economy in feeding. The cattle or sheep to be fed are not purchased by the owner of the hay, but are fed for a certain price per head per day. The ranchman performs all the labor incident to the feeding and care of the stock. The price usually charged is 8 or 9 cents per day per head for cattle. In feeding sheep, eight sheep are counted as equivalent to one steer. At these prices it is figured that the hay brings about $4.50 to $5 per ton. The stock is brought to the feeding pens in the fall or early winter. Usually the stock is brought in before the third crop of alfalfa is killed by frosts, and the stock is allowed to range over the fields at will, pasturing on the alfalfa and the grass that escaped the mower, until this feed is cleaned up, after which they are confined quite closely to the feeding pens. The cattle and sheep fed here are brought in large numbers by the Southern Pacific from the summer ranges in the eastern part of the State.

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SAN FRANCISCO, APRIL 15, 1905.

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The Week.

The year has made its turn into the harvest period. The first cherries have reached the Eastern market and freer movement will follow. Even dried fruits are near enough to sight to induce advance buying, and between advance buyers of dried fruits and fruits for canning and the chasers of wool and eggs the rural districts are not lacking for long stories and sharp trades. The weather, too, is delightful to get about in and the country liverymen and landlords are having the times of their lives. Rural activity is also increased by the throngs of home seekers which are doing the cut-rate, stop-over-everywhere act, and this gives the real estate agents long hours and inspiring audiences. Between all these visitations the farmer who is near leading highways is put to his keenest ingenuity to get in a few licks of spring work or to chase a few blights or bugs into a corner where his visitors will not see them. These are, indeed, stirring times on the farm.

Spot wheat is unchanged, and though futures at the East have been breaking, there has been little fluctuation here and little doing. There have been neither charters nor clearances this week. Barley is slightly off for spot and May, but December barley holds up well. Corn is lower in the face of larger supplies, but white corn holds up better than yellow, because the former will go in Central America. Beans are quiet, and choice lots steadily held. Bran and middlings are unchanged. Hay is also as before; fancy stable hay still saving the mark while other grades drag. Meats are all quiet and easy in tone. Butter has apparently touched bottom and storage is filling actively. Choice cheese is all right, but some is too fresh. Egg buying for storage is lively, both here and in the country. Poultry is firm for all but broilers and squabs, which are lower. Old potatoes are higher and in good condition, while new potatoes are declining. Onions are going up out of sight; the stock being mostly Australian with others from Oregon and Texas. Apples are nearly over. Cherries are going East and will soon be on local sale; strawberries are arriving more freely. Choice oranges are in good demand at fair prices, but much poor stock is going bad. Lemons are in fair demand and adequate supply; limes are easy. There have been considerable shipments of dried fruits to Australia, New Zealand and British Columbia. Advance sales of new crop are beginning; apricots, July delivery, at Vacaville, being mentioned at 7¼ cents. Prunes, 50s to 60s and 60s to 70s, are reported weak, while others are steady to firm. All the nut talk is about the next crop. Honey is weak; another lot of 300 cases of Hawaiian is in. Holders are in haste to clean up, as the new crop is not more than a month away, probably. Hops are all talk—both ways according to interests. Wool sales in the country are large; Red Bluff reports the spring clip of Tehama county sold at 22@25 cents. A low weight for the total clip of the State is anticipated.

Whether our fruit which is shipped East for eating out of hand shall be called "green fruit" or "fresh fruit," is a subject which excited the State Horticultural Society some years ago, and it was settled by that body for its own satisfaction that the term "fresh fruit" is the proper one. The trade, however, has never followed the suggestion, but has continued its use of the old term "green," and is apt to get mad when objection is made to it. It might be argued that as the fruit is in large measure actually green the trade chose to correctly label it in the interest of truth, but it is not usual for the trade to have such a tender conscience, so that that argument might as well be dropped. Manifestly to have the fruit and then to brand it green, is, from a commercial point of view, to damn it twice—which seems altogether unnecessary. To call it "ripe fruit" would invoke the imputation of irony, and this would be hard and heavy on the fruit. Therefore the term "fresh fruit" expresses the exact facts, because the fruit is neither ripe, nor dry, nor salted, and at the same time it is a term which does not knock the fruit. But the trade is conservative, not to say stubborn, and does not take kindly to reforms, and so Mr. A. L. Bancroft of Los Angeles, but formerly a large fruit grower of Contra Costa county, got a hard rap from a trade newspaper the other day because he criticised one of its advertisers for using the term "California green fruits" in soliciting consignments. Mr. Bancroft is correct in principle and in growers' precedent, in claiming that the word "fresh" should be used instead of "green," and he is not a "meddlesome busybody" to do it either.

Is it possible that we are guilty of over-refinement in our horticultural practices? Here we are perpetually enjoined not to bruise the olives picked for oil making, in fact to pick or pour them into water to cushion them so nicely that they cannot bruise. At the same time we read in a consular report from Syria that olive oil "production has increased of late years, and promises to become one of the chief industries of Syria. The olive tree requires but little care, and lives to become very old. In Syria the fruit is knocked off with sticks, and the injury thus caused to the branches probably accounts for the short yield every second year." In other words the olives are whaled off with clubs with such vigor that much of the new wood growth comes also. This is a new theory of alternate-year bearing and it might have more force if it were not true that alternate-year bearing were not also prevalent in California where they pick with such care. Then, too, we are told that oil from bruised olives is apt to be bad, while the Consul at Beirut, who is writing about it, says that these Syrian olives (which are clubbed from the trees) make an oil "equal to that of Italian oil, while the Sidon and Lattakia product rivals the best oils in the markets of Europe and America." Then, too, American capital is operating in Syria, for the account continues: "Refined olive oil is exported from the American factory at Haifa, while cruder oils in bulk are shipped from Beirut and Lattakia to be purified and clarified abroad. Hydraulic oil presses are now being introduced." Thus it appears that California's high class product will have to compete with Yankee capital in Syria as well as with the clubs of Syrian cheap labor.

Announcement of another forest reserve will please the reformers and will not displease the local interests as deeply as former reservations have done, because, since the transfer of the reserves to Mr. Gifford Pinchot's administration, the assurance is wide that both forests and enclosed agricultural lands are to be used and not to lie idle. The Plumas forest reserve has been made a permanent reservation by proclamation of the President. The land is chiefly in Plumas county, with small projections into Butte and Tehama counties. The acreage is 575,000. covering a portion of the drainage of the North and Middle Forks of the Feather river. Practically all of the reserve is mountain forest land, consisting of sugar pine, yellow pine and California red fir.

The Regents of the University at their meeting on Tuesday of this week voted a year's leave of absence on full pay to Professor E. W. Hilgard, who has been at the head of the College of Agriculture for the last three decades and has had but little absence during that period. Professor Hilgard has given the best of his life devotedly to the advancement of California agriculture, and a respite from arduous labors will be counted as well earned by those in the farming interest. No intimation is given as to what Prof. Hilgard will do with the time, but it is assured that he will not waste it, for he does not know how to do that.

Prof. E. H. Twight of Berkeley, secretary of the California Viticultural Club, is interested in securing for the organization as large membership as possible of those who are interested in all branches of grape growing and grape industries. The Viticultural Club has already succeeded in protecting the viticultural interests in the case of the proposed tax on brandies used for sweet wine fortification. It has also, through one of its committees, succeeded in obtaining the appointment of Prof. Bioletti to increase the efficiency of the viticultural department of the University of California. During the last Legislature its influence was felt in securing an appropriation of $10,000 for investigations of viticultural problems. It is hoped, with increased membership and consequent increase of means, to keep in touch with everything of interest along these lines and also to furnish information to its members.

QUERIES AND REPLIES.

Cactus for Extreme Northern Points.

To the Editor:—The horticulturist at the Dominion Experimental Farm has advised me to write you in making inquiry as to the practical value of Mr. Burbank's improved cactus. If it be of real worth, such as I see asserted, I wish to utilize it for our Northwest arid districts. Perhaps also you can inform me if there are any other plants or grasses that have been improved so as to be of added practical value for our Northwest.—Pioneer, Toronto, Canada.

As we stated last week, Mr. Luther Burbank of Santa Rosa, California, has originated smooth cacti with the idea of securing the greatest possible amount of leaf growth for forage purposes and the greatest hardiness against low temperatures. For the latter purpose he has crossed the free growing Southern species with the hardy ones from the extreme North. Now it, of course, remains to be determined by actual experiment as to how these new varieties will succeed under trying conditions and it will probably require some years to determine that point fully. We do not know whether Mr. Burbank has undertaken this part of the problem or not. We believe he has not parted with any of his varieties and he only could tell you what he proposes to do with them. As we stated last week, there are other smooth cacti, though it is doubtful if they dispense with the spicules as well as the thorns, as Mr. Burbank has. It is telegraphed from Texas that David Griffiths, a representative of the United States Department of Agriculture, is in Mexico looking for thornless cacti, and has already found four thornless varieties, and will recommend their cultivation as food for cattle in the arid districts of the United States. Not only may Mr. Burbank's be smoother, but they may be vastly hardier. All these things need actual trial under conditions to disclose their characters.

As to other hardy forage plants, it is very doubtful whether any California experience would be useful to you in finding grasses of extreme hardiness. You should address the Experiment Stations of Montana, North Dakota and Minnesota, as you would then get as near to the region which you wish to improve as it is possible in the United States, and data from that Northern belt would be more useful to you than anything from California.

To Keep Flies Off Family Cow.

To the Editor:—Can you tell me of anything that will keep flies from bothering the family cow? I keep her sewed up in sacking, but still there are ex-

posed places where the flies bother. I know of several things to keep off the flies, but they are injurious to the cow.—Y., Sacramento county.

We have not learned much about the pest of late. The sack-clothing is still approved for a few cows where the tailor's bill does not come too high. For exposed parts smearing with some of the fly-fuges sold in the stores has proved effective for a short time, but rather frequent application is necessary. The same is true of the home-made remedies like fish oil with a little carbolic acid stirred into it. Rubbing the hair with a cloth wet with kerosene, but not soaking the place with oil, has also been favored. If any reader learned something good from last year's experience we shall be glad to hear of it.

From an Appreciative Reader.

To the Editor:—In due time I received your answers to my questions, and desire to express my thanks for them. Since then, from the Pacific Rural Press I received the book entitled "California Fruits," of which you are the author, and believe it is just what I need. What I have so far read has thrown light on many points which were not clear to me, and its being free from technicalities makes it easy for me to comprehend. I am so well pleased with it that I intend subscribing for the Pacific Rural Press, as well as securing the book relating to the growth of vegetables.—Enquirer, Dowagiac, Mich.

We are receiving so many welcome words from those to whom we try to give the truth about California that it seems ungrateful not to recognize them, although we believe a modest silence should be the rule. The work should speak for itself, and not the worker for it; still, an occasional acknowledgment is only gentlemanly conduct toward those who are kind enough to praise. This department of "Queries and Replies" has been continued for seven years and during that period not less than 3500 letters, asking a total of 10,000 questions, have been answered, and many of them have helped those who are new to the State to adjust themselves to new conditions. Our books are intended to bring the reader up to date in California methods, and the Pacific Rural Press is to hold him up to date as each week records new experiences and discoveries.

An Enclosed Orange.

To the Editor:—I send you a freak orange—a seedling fruit showing a perfect orange inside. I am back at the old home and ready to receive the Pacific Rural Press again. I found play the hardest work of my life.—Thomas Yost, Fresno county

The freak orange is not of uncommon occurrence. It is a sort of enfolded-bud proposition. The only difficult thing about it is to tell why it comes so. The orange family is given to that sort of thing. The standard Navel orange is the same sort of a performance, becoming a dominant trait of the behavior of the variety.

What Mr. Yost says about going back to the farm is suggestive that it is sometimes a mistake to retire from active pursuits with an idea of visiting out the balance of one's life. Some people have died outright when the old stimulus to activity is removed; others have dragged out a tiresome existence as village loafers; others have gone back to the farm, as Mr. Yost has, and been glad of it. When one feels just like selling out and retiring the best thing he can do is to take a vacation. That will usually soon cure him of a longing for the pleasures of idleness.

The King Orange.

To the Editor:—I have read about the King orange of China such flattering reports that I wonder whether it would not be better to grow it instead of so many Navels and Valencias. What do you know about it?—New Resident, Redlands.

The King orange was brought to California from China at least twenty-five years ago and was grown to some extent in Riverside in early days. It has been abandoned because of its exceedingly rough and unhandsome appearance, and because the Washington Navel and a few other varieties are found to be more profitable. There seems to be little opportunity to do anything with it at present, unless it be grown by an amateur for home use.

The Thrips.

To the Editor:—What can you tell us about the thrips and the way to overcome it? It seems to be a great pest.—Reader, Newcastle.

We have not published much about thrips because it has not yet been possible for our entomologists to undertake investigation, which is necessary, because they are fully occupied with other important investigations. An interesting effort is now being made in Santa Clara, a sketch of which will be published in the Pacific Rural Press next week. The greatest necessity at the present time seems to be to ascertain where the thrips pass the winter. It is probably on some plant which is green during the winter, and it may be very different in character from the fruit trees. If that can be ascertained, the wise thing to do would be to attack the insect upon its winter feeding grounds, and in that way destroy it before it can get its work in on the fruit blossoms. This is what has been suggested to them in San Jose, and they have in mind to pursue such studies. The Santa Clara supervisors have made an appropriation to promote this investigation under the direction of their county horticultural commissioner.

Slugs in the Garden.

To the Editor:—Having planted any amount of flower and vegetable seeds, only to have the young plants eaten off by snails, I thought by applying to you some remedy might be secured to eradicate the pest and to enable us to raise new plants before it is too late in the season.—Amateur, Marin county.

It is exceedingly difficult to protect plants against snails or slugs, as they are usually called. Where the rains are as frequent as they have been this winter, and the ground kept constantly moist upon the surface, it is almost impossible to check these creatures. A very good way, if it is possible otherwise, is to have a brood of young chickens or young ducks, with the hen in a coop, and allow them the run of the garden. They are the best hunters for slugs that we know of. After the showers cease it is possible to keep the slugs in check by constant loosening the surface and causing it to become dry and dusty, never allowing the space between the flowers to become hard. The slugs are sometimes checked by the use of powdered lime, sprinkling it on the ground around the plants. The slugs cannot cross lime until it becomes inert by the action of water. There is, in fact, no easy way with these creatures.

Teosinte and Alfalfa.

To the Editor:—I have a piece of black soil, moist all the year. Can I sow alfalfa and teosinte now, mow the teosinte this summer and have an alfalfa patch after frost next winter? Or will the teosinte choke out the alfalfa?—Experimenter, Placer county.

Teosinte is a corn-like plant growing near the ground and very much less valuable than common Indian corn. There is no danger at all of its crowding out alfalfa; in fact, it will disappear of itself just as soon as the slightest frost occurs. There is no doubt that you can sow both plants together now, and if conditions are favorable get a good stand of alfalfa. You need not fear that the teosinte will interfere with it in the slightest degree. We will, however, not guarantee that you will get enough to mow or that you will find it very easy to mow if you get a good deal of it.

Rose Mildew and Aphis—Plum Aphis.

To the Editor:—I have in my garden two climbing rose bushes, and they seem to be affected with a blight or mildew that prevents them from growing and nearly kills them apparently. I also notice other rose bushes slightly affected with this mildew, also on one I noticed green lice, quite good size. Is there any spray that will cleanse them? On some plum trees I notice patches of black or purple lice very small, occasionally one with wings. These cover the twigs and fruit in places. Can you give me a remedy?—A. P. P., Yolo county.

The same weather conditions which are inducing this year an unusual amount of fungus injury to fruit trees also cause similar injury to garden plants. Rather low temperature and moist winds favor the rose mildew. Dry sulphuring, as is done for mildew on grape vines, is the most available remedy. The aphis, both on the rose bushes and the plum trees, should be attacked with kerosene emulsion and a good spray pump. Unless these insects are checked, your trees will be a mass of sticky and smutty leaves and the fruit spoiled by the smut also. These leaf aphids are often finally cleared off by ladybugs, but they often come too late to save the fruit from the ruinous smut. The aphids also weaken the trees by destruction of the leaves.

Fig Figures.

To the Editor:—Can you tell how many figs are produced in the United States and the amount of imported figs?—Reader, Oakland.

The total commercial fig product of the United States is made in California and the output is about 6,000,000 pounds a year. The imports of figs into the United States during the last six years have ranged from 7,000,000 to 11,000,000 pounds annually. The latter figure for the year 1902 is the largest on record.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 10, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Clear, warm weather prevailed most of the week and conditions were very favorable for all crops. Light rain fell in some sections Sunday night. Work progressed rapidly in fields, orchards and vineyards. Grain and grass made good growth and were never in better condition at this season. Heavy crops of wheat, oats and barley are probable. Barley has headed out in some places and looks well. Alfalfa cutting has commenced. Green feed is abundant and stock are in prime condition. There are no reports of serious injury to deciduous fruits by the frosts of the preceding week, though in some localities pears and cherries were slightly damaged; the outlook is good for excellent crops of nearly all varieties. Cherries are maturing rapidly. Strawberry shipments from Florin have commenced.

Coast and Bay Sections.

Generally clear and warm weather prevailed during the week, with frequent fogs in the coast districts. Grain and grass made good growth and are in excellent condition in nearly all sections, with prospects for heavy crops. It is reported that the Hessian fly has attacked wheat fields in Livermore valley, but no serious damage has been done yet. Hay cutting has commenced in the vicinity of San Lorenzo; the crop is heavy and harvesting is two weeks earlier than usual. Hops in Sonoma county are in splendid condition and growing rapidly. Green feed is plentiful and in the southern districts is the best for ten years. Cherries, peaches and prunes were slightly damaged in some sections by frosts in March, but the loss will not be serious, and good crops of most varieties of deciduous fruits are probable.

San Joaquin Valley.

Clear and seasonable weather prevailed during the past week. Grain and grass are making rapid growth and large crops of each are expected. In some sections volunteer hay is being harvested. Plowing and cultivating orchards and vineyards continue. Cut worm is causing damage in some of the vineyards in the Fresno district. Peach blight, which it was feared would seriously injure the crop in Tulare county, has not caused much damage. Deciduous fruits and berries are maturing rapidly and good crops are promised. Citrus trees are in excellent condition. Stock are healthy and in prime condition.

Southern California.

The weather was generally clear and warm during the week and conditions were favorable for all crops. Grain made rapid growth and looks remarkably strong and thrifty; prospects are good for the largest crop for several years. Hay harvest is in progress in San Diego and Riverside counties and the yield is very good. Green feed is plentiful and stock are looking well. Melons and dates are in bloom in the Coachella valley. A small gray beetle has attacked vineyards in San Bernardino county. The frosts of last week caused some damage to young grapevine shoots at Poway. The lemon crop now on the trees is reported much heavier than in any preceding year. Oranges and deciduous fruits are in good condition.

Eureka Summary.—Weather past week favorable. Feed and crops of all kinds are growing finely. Fruit trees are heavily laden with blossoms; prospects excellent for unusually heavy yield of all varieties. Stock are in prime condition.

Los Angeles Summary.—Foggy mornings conserved moisture. Hay and grain are showing good effect. Absence of rain enabled farmers to begin haying. Orange trees are heavily laden with bloom and making an unusual amount of new growth. Some complaint of fly in grain, but no serious damage yet.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 12, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	30 52	58 95	40 38	66	44
Red Bluff	.06	31 14	28 65	23 25	80	42
Sacramento	.00	18.35	15 86	17 68	74	48
San Francisco	.00	20 07	19.03	21 03	72	48
Fresno	.00	10 06	6 71	7 86	86	44
Independence	.00	3 18	2.57	3 43	74	38
San Luis Obispo	T	20.50	13.85	18 80	68	44
Los Angeles	.18	18 38	7 75	15 21	74	50
San Diego	.06	13 72	4.13	7 61	68	52
Yuma	.16	8.69	0 94	2 80	90	56

FORESTRY.

Practicability of Forest Planting in California.

By E. A. Sterling, United States Bureau of Forestry, in Water and Forest for April.

Tree planting in its horticultural and arboricultural sense has been understandingly practiced in this country since the earliest days of settlement. Planting in its relation to the science of forestry is less understood, mainly because forestry is a comparatively new art in America, and one which deals not so much with individual trees as with collections of trees which make up the forest. Tree planting then becomes forest planting in the sense that the technical requirements of the science demand the grouping of planted trees in forest plantations in which true forest conditions will eventually be obtained. Tree planting along roads and in lawns for ornamental purposes is, strictly speaking, not within the province of the forester.

Public interest in forestry matters is in general largely centered in planting operations, probably because the more intricate processes whereby forests are utilized and perpetuated without recourse to planting are less apparent and not easily understood. Forestry regeneration by natural methods is preferable because more economical, but artificial reforestation must often be resorted to, and the public interest in this phase of the subject is very helpful.

To the people of California forest planting appeals strongly because of the vast area of non-forested land, worthless for agricultural purposes, and the recognized value of a forest cover on the mountains in conserving the water which gives life to the orchards and vineyards of the valleys. Living, too, in a region where climate, fertile plains and rugged mountains combine in such wonderful perfection, Californians have learned to love the unexcelled scenic features of their State, and to unite commercial development with esthetic improvement.

From the economic standpoint there are two distinct reasons why extensive reforestation should be carried on in California. The first is that the irrigation interests demand it. The wealth of the existing orchards and ranches, and the expansion of these industries, is largely dependent upon the water supplied them from the forested mountains. Barren or chaparral-covered slopes do not hold well the water which falls upon them in the form of rain, and, being exposed, erode and furnish disintegrated minerals which silt up the streams and irrigation canals. In many districts there is not water enough available to supply the demands of the agriculturists, or it comes in such irregular quantities as to be useless. The amount of irrigable land in California is materially in excess of the water available to irrigate it, hence every acre of barren mountain land reforested, and made productive of water, will extend just so much the development under irrigation of the valleys. Not only will the influence be felt on the surface water used by reservoirs, but it will tend to increase the underground supply reached by wells, for the retaining effect of a forest cover will allow much water to percolate into the ground which would otherwise run into the sea during the winter freshets.

The second reason for reforesting unproductive areas is in order to provide for a future timber supply. This need is not greatly felt at present, because of the abundance of virgin timber, but it will be a vital matter within a few decades. The lumber business now ranks third among the industries of the State, but at the present rate of consumption under the destructive methods followed it must soon decline into a minor industry.

More conservative and far-sighted lumbering, rather than forest planting, must be depended upon to perpetuate the forests now under exploitation by the lumbermen. But on certain areas planting is the only recourse, and every acre planted will add just so much to the future timber supply. Timber in ever-increasing quantities must be had to supply the demands of the growing civilization of the Pacific coast, yet few seem to consider the future source of the supply. The railroads are beginning to feel a scarcity of cross tie timber, and its production will become a question of growing concern. It is not improbable that the near future will see the transportation companies extensively planting rapid-growing trees for ties.

While the planting of trees for timber production and the protection of drainage basins are two distinct problems, they are, at the same time, inseparable, since one forest performs the two functions. A timber forest is a conserver of moisture, while a protective forest, save when the conditions of aridity and soil are very unfavorable, is productive of timber. The utilization of the timber in a protective forest without injury to its main function is a delicate matter, requiring the highest judgment of the forester.

Broadly classified, there are two types of land in California upon which forest planting may be considered advisable. The first is on barren or brush-covered areas which have never supported a forest growth, or at least not within historic times. The second is land which was originally forest covered, but through the agency of lumbering or fire, or, in most cases, of both, is denuded beyond all hope of natural regeneration.

There is still a third intermediate type which is found along the margin of the timber belts, where brush, fire or excessive grazing has prevented reproduction among the scattered trees of the very open forest. In this case a removal of the causes detrimental to natural reproduction would usually give a young growth from the scattered seed-mother trees.

Under intensive forestry planting would also be resorted to in order to change the composition of a forest stand. The old trees would be removed and replaced by planted species of a more desirable nature, as in the conversion of a fir forest into one in which pine predominates. The stage has not yet been reached, however, when such operations can be conducted with profit. With all our advancement there is still much selfishness, and neither the State nor individuals will look into the distant future to anticipate the needs of those who will follow after. Hence it follows that the first two are the only types of land on which forest planting should be seriously considered at present.

The barren and brush-covered areas in California which would support a forest growth are enormous. They comprise the greater part of the mountainous semi-arid belt and, ranging from the Mexican border northward, include the major portion of the Sierra Madres, the coast ranges south of Lake county, and a belt along the foothills of the Sierra. Within this range there are, on the higher elevations and in the more moist situations, considerable bodies of timber, but waste land is the dominant characteristic of the region.

There is absolutely no future for these vast areas of unproductive land, for, valueless for agriculture, of poor quality as grazing ground, conditions are rendered worse each year through constantly recurring brush fires, which injure the forest and impoverish the soil. Fires by many are considered beneficial, since the stock relish the new shoots and tender grasses which follow, but the advantage is only temporary and the ultimate result most disastrous.

Adequate fire protection must be assured as the fundamental step in the establishment of forest plantations on waste mountain land. This in itself is a problem of great magnitude, but under wiser State laws for the protection of forest and brush land, and with the assistance of a more enlightened public sentiment, is possible of solution. In connection with forest planting fire protection should be made a local matter. Carefully prepared plans providing preventive measures, and means for the prompt detection and suppression of fires which start, should be applied in the districts where planting is undertaken. Until there is a reasonable certainty that the fire situation in a region is under control, there is absolutely no prospect of results from extensive planting operations.

To contemplate the redemption by forest planting of the waste land in California is the privilege of the forest enthusiast, but so vast is the undertaking that, even if means could be found, it would be a task requiring many decades of time and millions of dollars.

In the beginning all efforts should be directed toward reforesting the upper drainage basins of the streams whose waters are of the greatest value for irrigation, power and domestic purposes. Great as is this need, we can hardly hope to reclothe the slopes of the coast ranges, where the water question is not vital, while the cities and plains of other regions are crying for moisture which the denuded mountains are unable to supply.

The mountain ranges adjacent to the Los Angeles valley are probably in greater need of a forest cover than any other in the State. The Federal Bureau of Forestry already has a forest nursery in the San Gabriel mountains, where, under the direction of T. P. Lukens, extensive experiments in practical reforestation are being carried on. The results here obtainable will be applicable to the mountain range for some distance east and west.

The prosperity of the whole fertile region in the vicinity of Los Angeles, including the main orange belt of the State, is directly dependent on the adjacent mountains for water, and the future development of the region depends on the water supply, now overtaxed, which these mountains can supply. At present only one acre out of every six and a half acres of irrigable land is supplied with water and under cultivation. More forests mean more water, and hence more land under cultivation. Whether or not an abundance of water would give an overproduction of citrus fruits and other local products, is not a question which progressive Californians consider.

Less in area, although of great importance, is the land which lumbering and fire has made barren. Under present conditions most of this land reverts to a dense growth of chaparral, and therein lies one great menace from fire and improper lumbering. The reclamation of these areas is for the future, the immediate duty being to care for the watersheds, and prevent the increase of chaparral by keeping out fire and introducing more rational lumbering methods. Planting on certain barren areas in the lumber regions is advisable now and always will be, but in general it is not necessary.

The tendency of California forests to reproduce themselves is remarkable, and fire protection alone on areas recently lumbered will, in practically every case, insure young forest growth instead of worthless brush. If, in addition to fire protection, some slight changes looking to a future are made in lumbering methods, the chaparral will be restrained and a valuable State asset acquired in the form of potential forest growth.

There are many ardent advocates of extensive forest planting, and a very general desire for the inauguration of such work in California, but no one ventures to point out the source of funds for such operations. Without funds little can be accomplished, and it is lamentable that such public benefit undertakings are usually delayed until the issue is forced by the pinch of necessity.

The work for the present must be mainly experimental and conducted by existing State and Federal bureau. Nurseries should be established and experimental plantations made in representative regions needing reforestation. The work started in this way can be broadened by soliciting private interest, and by supplying seeds, plants and instruction to those who will contribute individual effort.

The timber lands of California are one of the State's greatest assets, and no effort should be spared to secure better protection and management of the existing forests, and the reforestation of denuded areas.

HORTICULTURE.

Peaches Ought to Be Worth Something.

The trouble with the peach trees this spring is likely to affect the California crop to some extent, and the East is going to be shy of peaches. A St. Louis exchange says: We are of the opinion that the entire peach crop in the Central West was killed by the recent severely cold weather. Advices received by us from authoritative sources state that the peach crop in Missouri and Arkansas has been wiped out, so far as 1905 is concerned, and that in addition many young trees have been seriously, if not permanently, injured.

The situation in Texas and Georgia is somewhat better, yet much damage has been done even in those far south States.

When we read of the mishaps to trees in other States, our troubles seem light. The Secretary of the Missouri Horticultural Society writes: Reports from 300 cards sent out show that the peach crop, as a crop, is killed by the severe cold of February 12–13. Reports show that the thermometer indicated in different parts of the State from 18° to 32° below zero—a temperature which will generally kill peach buds.

In case of peach trees, it would be best to cut back in two or three-year-old wood. Cut back below where the cut was made last year, so as to take off the top growth, and thus induce a new growth, which will be in good shape for bearing the following year. The trees will thus form a new head and renew their vigor. If the wood is badly discolored then cut back more severely, getting back into the two or three or four-year-old wood, as the age and condition of the tree would indicate.

In some instances we find the apple, plum or cherry trees having the bark split on the bodies. If such be the case, cover the split with grafting wax, then wrap the trees tightly with old cloths or gunny sack, so as to keep the air out.

If the bark is loosened entirely around the tree, it will likely die from the effects of the freeze; but in most instances it is only a split of the wood and bark, and the above treatment is the best means of helping the tree to recover.

English Walnuts From Seed Planted in Place.

To the Editor:—The nuts should be large and thin shelled and should be of last year's crop. To ascertain this try a few of the nuts, break them open, and split the kernel open at the germ end, or the point where the root starts. If the meat of the kernel shows a clear white color they are of the last year's crop, but if the flesh shows any discoloration they are old and will not germinate. I have often got hold of a lot that were mixed, old and new together. Never risk a lot of this kind, for failure will follow. Were I going to set out an orchard of English walnuts I would check off my ground 40x40 feet, and plant the nuts three or four at each check. Trees grown on their own roots and never disturbed are more hardy and better in every way. The nuts can be planted at any time. The land can be plowed and cultivated before the nuts are planted.

Preparing the Nuts.—After the nuts have been selected place them in some kind of tin vessel; a five-gallon oil can, with the top removed, is just the thing. Then cover them with hot water at not over 110° F., or just as hot as would be comfortable to wash one's face in. Let them remain in this water for twenty-four hours and plant at once, keeping them in the water all the time. Do not let them become the least bit dry, and be sure the soil is moist, and put every nut in with the sharp point exactly straight down. The root starts from this point and will go straight down, and if not molested will the

first year be about three times the length of the top; that is, if the top grows one foot, the straight tap root will be three feet or more long, and will be from three-fourths to one inch thick where it grew out of the nut, tapering both up and down. On account of this long tap root, transplanting should be avoided if possible. An orchard with nuts planted in permanent place will be larger in three years than the same orchard set with two-year-old trees at the end of the third year. They will be more hardy, and being deep rooted will be later in blooming. Trees grown in this way will be equal to any of those grafted on the California or Eastern black walnut.

Growing in the Nursery.—Where trees are to be grown in the nursery row and afterwards set to orchard form they should not be taken up until they are two years old. In such case the tap root should be gotten rid of. When the little seedlings are about 2 inches high a trench should be dug very close to the row 6 inches or more deep, then with a very sharp spade cut under each plant so as to be sure of cutting the tap root, say 6 inches from surface of the ground. Immediately run water in the trench, and as soon as the water settles fill the trench. This work will cause the young trees to develop side roots, and can be more safely transplanted.

Monticello. J. Luther Bowers.

Mr. Bowers writes very positively on his side of the question and many will agree with him, and yet it is a fact of some moment that of a surplus product of 800 carloads shipped from California in a year, probably not ten carloads are grown on trees started in that way. If we are wrong about that we would like to know it. As for the tap root theory, we look upon it largely as a fad. As for deep roots, you will get them all right if the soil is deep, and you will have three or four, perhaps, instead of one.

Apple Notes From Watsonville.

At the last monthly meeting of the Pajaro Valley Orchardists' Association, as reported by the Pajaronian, President C. H. Rodgers urged the necessity of an incessant warfare against the various fruit pests, and expressed the hope that local orchardists would take up the work more actively this season than ever before. He told of the keener competition that we are called upon to meet each succeeding year and cited the work along the line of pest fighting that is being carried on in other fruit growing districts.

"The larger the apple the readier the sale—the surer the premium," continued Mr. Rodgers. "While spraying is vitally essential, a thinning process is of equal importance. In the greed for the larger crop the quality and size are often sacrificed, a fact that sooner or later the producer will discover to be to his financial disadvantage. Furthermore, we must insist that growers allow the fruit to remain on the trees until fully ripe. The shipping of green apples will ruin our business. And then in the matter of packing, handling, spraying and the general care of fruit there must be an awakening.

Spraying.—W. H. Benteen, manager of the San Monte Fruit Co., spoke at some length on spraying, and expressed the belief that it would be more general in Pajaro valley this season than in former years and confidently believed that good results would follow such work.

In regard to the use of the arsenate of lead, with the least possible danger to foliage, a forthcoming University bulletin will say in part, for the Pajaro valley:

First—Spraying as soon as first blossoms have fallen, about April 15th. Do not wait for all blossoms to fall. Use three pounds of material to fifty gallons of water. Overshot spray.

Second—Spraying about April 30th. Two pounds to fifty gallons of water. Overshot and undershot spray.

Third—Spraying about May 17th. One and a half pounds to fifty gallons of water. Overshot and undershot and thorough inside spray.

Fourth—Spraying about June 12th. One pound to fifty gallons of water. Spray same as third.

Fifth—Spraying about July 10th. One pound to fifty gallons of water. Spray same as third.

Sixth—Spraying about August 1st. One pound to fifty gallons of water. Spray same as third.

Seventh—Spraying about August 21st. Two pounds to fifty gallons of water. Spray same as third.

Eighth—Spraying about September 12th. Two pounds to fifty gallons of water. Spray same as third.

Ninth—Spraying about October 1st. Two pounds to fifty gallons of water. Spray same as third.

Subsequent sprayings every three weeks thereafter.

THE POULTRY YARD.

Hens as Brooders.

Mrs. J. M. Grubbs of Wyandotte gives the Oroville Register the following ideas about hatching eggs with incubators: "For some years," said Mrs. Grubbs, "we have been using incubators and hens to mother the chickens at the same time. I usually hatch out about a hundred chicks with the incubator and then have three or four hens to take care of the chickens and teach them to eat. We set a hen or two or three, as the case may be, but do not let them hatch out the chickens. Sometimes we use glass eggs and sometimes the hen sets only two or three days, when we take the young chicks from the incubator and give them to her. She at once takes kindly to them and takes better care of them than we possibly can. She scratches for them and gets all kinds of foods that we could not secure.

"Just now I have between ninety and a hundred young chickens and one hen is taking care of them all When it comes night we leave her to hover ten or a dozen and then put the others in a place where we can care for them. I think the chickens do better and that we are more successful in this way than where the hen does not care for the young chicks at all."

"The hen," said Mrs. Grubbs, "is not a good calculator of time. She will set one day or three or a week and then if the young chicks are given to her she fancies she has hatched the eggs and is perfectly contented and will take the best of care of the young."

We think the idea is a good one and will be glad to see others try it.

THE VETERINARIAN.

Bovine Tuberculosis.

NUMBER II—CONCLUDED.

The Duration of the Disease.—Tuberculosis is a disease of very slow progress. It often requires years for it to destroy its victim. The tubercle bacilli multiply and penetrate into the organ into which they were first carried and gradually destroy it. It often happens that the tubercle germs pass into the blood or lymph and are carried to other parts of the body, where each germ starts a new tubercle. This is the condition known as generalized tuberculosis, "miliary tuberculosis" or "quick consumption."

When the diseased tissues are restricted to one organ the condition is known as local tuberculosis. When the organs in two of the cavities, such as the lungs, in the pleural cavity, and the liver in the abdominal cavity, are affected the condition is known as generalized tuberculosis. This is very important, as the meat inspection regulations of this and other countries permit the flesh of animals suffering from local tuberculosis to be used for food.

When the disease is local it often requires a very long time for it to invade the organs sufficiently to cause the death of the animal. It may happen that the germs of the disease are lodged in some organ, like a lymphatic gland, that is not absolutely necessary for the life of the animal, and the entire organ may be destroyed without apparent injury to the individual. If the diseased process is arrested before it has advanced too far, even when it is in a vital organ, such as a lung, the liver, or the kidney, the animal will continue to appear to be perfectly sound. Animals thus affected are thought to be perfectly well, as they appear to be, but sooner or later the disease starts up again. When such animals, while they still appear to be perfectly well, are bought in good faith and placed in a healthy herd they bring the disease and not infrequently transmit it to other animals.

It is very likely that some animals, especially cattle, are infected and recover. This is to be expected in some cases where they are kept under favorable hygienic conditions. At present, however, our knowledge of recovery from tuberculosis in cattle is too meager to warrant much encouragement from this source. It appears to be safer and more economical not to trust to a recovery.

How to Detect Tuberculosis in Cattle.—From what has been said about the course of the disease, it is perfectly clear that there may be a large number of animals in a herd that are infected with tuberculosis but which appear to be sound. There may be others in which the disease is far advanced and the animals show that they are affected. There are two ways by which the disease can be detected, namely, by a physical examination and with tuberculin.

The physical examination is of value in advanced cases only, or where the diseased part is in evidence, as for example in the lymphatic glands of the neck. Experience has shown that by this method one is unable to find more than a very small percentage of the animals that are tuberculous and a menace to the healthy cattle. This method, therefore, is a very crude one and cannot be trusted except in the very advanced cases and in those where the early stages of the disease are in evidence externally.

The tuberculin test is far more reliable. There have been many unjust things said about tuberculin and many cattle owners have come to fear that it is a dangerous agent to use. It has been found, however, that tuberculin is as harmless as needs to be to the health of the animal. The dangers that are supposed to come from it are the results of poor tuberculin, unclean instruments, or other causes.

Tuberculin is the liquid, usually glycerinated bouillon, on which the tubercle bacilli have multiplied or grown. It is concentrated after heating and removing the bacteria and a little carbolic acid or thymol is added to preserve it. The active principle of tuberculin is a substance resulting from the multiplication of the tubercle bacilli in the liquid. In its preparation it is necessary that the tubercle bacilli "grow" sufficiently, which usually requires several weeks before the liquid is used. The flasks containing "cultures," as they are called, are, when ready, heated for some time at the boiling point. The liquid is then filtered to remove the bacilli, the fluid is then concentrated over a water bath. It is again filtered through a porcelain filter and stored. It will be noticed that tuberculin is heated at two different times during its preparation sufficiently to kill the tubercle bacilli, and it is also filtered through a substance that would remove the tubercle bacilli, if any escaped the first filtration. When ready for use tuberculin is a clear, amber colored liquid. The intensity of its color varies according to the amount of blood pigment in the meat from which the bouillon was made.

Tuberculin cannot possibly produce tuberculosis, because it does not contain any tubercle bacteria. It does not excite a latent tubercle into activity. It is used the world over, and as yet no authentic report of injury caused by its use has been recorded. All those who have worked with tuberculin are agreed that it is one of the safest and surest tests in detecting the presence of tuberculosis that is known to the medical world. All are agreed, however, that it must be properly used, and that all those physical conditions that would tend to interfere with it must be avoided. If in its use these precautions are taken, tuberculin is as sure as any chemical reaction.

If the animal is sound when tuberculin is injected no reaction is observed. If, however, the animal contains an active tubercle there is a reaction which shows itself in a rise of the temperature beginning from eight to sixteen hours after the injection and continuing for from six to ten hours and possibly longer.

It is stated, however, on good authority, that animals in advanced pregnancy give a rise of temperature when they are not tuberculous. Cows in this condition should not be tested. They can be isolated until a few weeks after delivery when the test may be applied. It is likewise asserted that occasionally animals in a very advanced stage of the disease will not react. The animal in this case, however, is easily recognized to be in a very bad condition. These and other conditions that might modify the reaction must be understood by the one who is using the tuberculin. It often happens that other causes give rise to a temporary elevation of temperature during the testing period. These are readily differentiated from the tuberculin reaction by the character of the temperature curve.

It must be remembered that tuberculosis when naturally contracted may have a long and variable period of incubation. The tuberculin does not give a reaction during this period. It is possible, therefore, that an animal that has been associated with and infected by tuberculous cattle will not react, but will do so in from three to six months thereafter, or as soon as the diseased process has actually begun. While tuberculin is a most reliable diagnostic agent when properly used, it may lead to erroneous conclusions when improperly applied.

How to Eliminate Tuberculosis From a Herd.—A few years ago this could not be accomplished without sacrificing all the animals. With tuberculin, however, it is not difficult to detect all diseased individuals.

The question arises, What can be done with the reacting animals? The examination of a large number of cattle that have been killed after the test shows that a small number in every herd containing reacting animals are very extensively diseased and would undoubtedly have died in a short time. These are of no value and should be destroyed. Usually they are poor, and will not take on flesh. A much larger number of reacting animals are but slightly diseased. These will readily take on flesh and can be fattened and used for beef. They must be carefully examined when killed and if the disease is found to be extensive or in the two large body cavities, the carcass must be condemned. The government meat inspection regulations permit of the use of the meat of slightly tuberculous animals for food. These animals, therefore, have a beef value.

If the reacting cows are valuable, they can be isolated and kept for breeding purposes by removing the calves at once and feeding them on milk from healthy cows. The milk of the reacting cows can be used if it is sterilized first.

How to Prevent Tuberculosis.—As the most common method of introducing tuberculosis is by the purchase of a diseased animal, or feeding the milk of such animals, the most effective way to prevent the disease is not to do those things. Buy all animals on a tuberculin test, and retest after three to six months. Do not feed skimmed milk that comes from tuberculous herds to calves without first sterilizing it. The method is simple. The disease is produced by the tubercle bacilli and if we keep these bacteria away from our cattle they cannot possibly develop tuberculosis.

Agricultural Review.

Butte.

Good Prospect for Average Peach Crop.—Gridley Herald: A visit to the Riviera orchard this week encourages the belief that the peach crop of the vicinity is going to be a good one. Though some varieties have been affected by the peculiar dropping of the leaves, on the whole the situation is encouraging. Mr. Cutts has a splendid prospect for a crop of Orange Cling peaches, the Phillips variety has a good stand of fruit, the Muir peaches are thick enough, and almonds are considerably above an average crop.

Fresno.

Raisins in Demand.—Sanger Herald, April 6: Raisin buyers are scouring the country, offering 2¾@3c per pound for the remainder of last year's crop. Some of the growers incline to the belief that the coming crop of raisins will fall short one-half, owing to the heavy frost of last week.

Frost Damage.—A heavy frost was in evidence here last Friday morning, the mercury registering 28° at 6 A. M. Ice formed on the puddles in the street nearly ⅛ inch thick. Young vines were cut to the ground by the cold snap, so that many will have to be replanted. No doubt the seedless varieties of grapes will fall short this year, but the Muscats will be an average crop unless there are further visitations by Jack Frost. Peaches, plums, apricots and pears were not damaged in the least, nor has the grain or alfalfa been hurt.

Kings.

Fed Alfilaria.—Hanford Sentinel: George Houston was in town to-day and told about his experience in feeding alfilaria to his horses. Mr. Houston stated that the grass had grown rank in his orchard and he had to take his mowing machine in and cut it down before he could run the orchard plows. The day after he did the mowing the sun came out hot, and the grass seemed to cure well. He raked it up and hauled it into the pasture where his horses were turned loose, and the animals partook of the alfilaria heartily. He said he had always been told that alfilaria is good feed for stock, and he thought he had a bonanza in stock feed for a while, but two of his horses that partook very heartily of the hay soon became sick, one in particular, a fine work animal that he values at $250, became very sick, with a stoppage of the kidney action. Mr. Houston rushed to town for a horse doctor and appliances to give the animal relief, and finally succeeded in relieving the horse and effecting a cure. The other animal was not as sick, but Mr. Houston states that henceforth he does not want any alfilaria hay in his stock corral.

Los Angeles.

Force of Rangers to Be Doubled.—Azusa Pomotropic: On account of damage done to wagon roads, telephone lines and trails in the mountains, the force of rangers for the San Gabriel and San Bernardino reserves will be doubled. Supervisor Thomas has just received authority to place ten additional men, six in the San Gabriel and four for San Bernardino. By the first of May it is thought that the summer force of rangers will be brought up to twenty for our reserve. As the combined summer force of thirty-four men has under its charge 1,285,000 acres of mountain country to guard—550,000 in the San Gabriel and 735,000 in the San Bernardino reserve—it is considered important that the telephone line and the trails be given immediate attention in preparation for the dry season.

Merced.

Farmers Much Concerned.—Modesto Herald: The spread and apparent ravages of rust in the grain fields of Stanislaus, Merced and Madera counties threaten the loss to the farmers of the record-breaking crop that has heretofore been promised. In Madera county the rust has in instances actually killed the grain, and a large percentage of the summer fallow is in a very discouraging condition. Reports of apparent loss from this cause also come from Merced, and in Stanislaus county many fine appearing fields of grain are found to be badly affected. The rust is attributed to the long-drawn-out rains and lack of drying winds. It is interesting to note in this connection that rust is also reported in alfalfa. The first crop only, however, will be affected. Some farmers who have found alfalfa affected propose to cut the crop without delay.

Placer.

Novelty in Barley.—Herald: Wm. Ware, of Butcher ranch, has a stock of bald barley raised on his place last year, on which are four heads of well-filled grain. He has several stalks with two heads on.

Rains Have Reduced Crop Prospects.—No frost damage has occurred to the Newcastle orchards and no injury upon the low lying lands is noticeable, and even tomato plants and grape vines have so far been uninjured. During the coming season, however, there will be a shortage of at least 25% from earlier estimates, caused by the recent long continued rains destroying the pollen and blighting the blossoms. The loss will extend to early and midsummer peaches and to cherries, plums and prunes. Certain kinds of pears, grapes, oranges and olives seem to be all right.

Sacramento.

Six Hundred Bluejays Bit the Dust.—Union, April 10: The sportsmen of the county turned out yesterday to shoot the bluejay, which is noted for eating the eggs of quail and other feathered creatures, and when the day was done about 600 bluejays had been bagged. The shoot was under the auspices of the Sacramento County Game Protective Association, and about 100 shooters donned their canvas suits and went out to shoot. Every hunter was allowed to choose his own locality after the battle-ground was reached, and naturally each man selected what he thought would prove the haunt of the most jays, because merchandise prizes had been hung up for the hunters who could show the most bluejay scalps at 2 P. M. Two teams were made up of sportsmen of Sacramento, and the towns of Folsom and Roseville were also in the field. The Folsomites appeared to have a closer acquaintance with the bluejay and his haunts and habits than did the city people and carried off the first prize for team shooting, killing 239 birds. The highest individual kill was made by Mr. Steele of Roseville, who got seventy-two birds, and he carried away the second prize. Stephens of Sacramento was next with forty-three birds, and to him fell the third prize.

San Bernardino.

Pest Threatens Vineyards.—Horticultural Commissioner Pease was summoned to Cucamonga this morning to investigate a new pest which has appeared among the vineyards, threatening complete ruin to thousands of acres of vines. The pest is a minute gray beetle, which by millions has attacked the vines, devouring young sprouts and buds. Pease has been unable to classify the insect and has sent several hundred specimens to Washington, D. C. While walking through a vineyard a laborer dropped part of an orange, which Pease found completely covered with beetles. By experimenting, he found that the insects will leave the vines for oranges. Growers have been buying culls by the carload and all day a large force of employes have been quartering the fruit and distributing it among the vines, thus checking the ruinous work of the insects.

San Joaquin.

Colt Killed by California Lion.—Lodi Sentinel: A few days ago a young colt belonging to Walter Heckman was killed by a California lion at his ranch on the San Joaquin river. One of the colt's hind quarters was partly devoured and a portion of the body evidently carried away. Lion tracks which were discovered about the scene gave evidence as to the cause of the colt's death. The lion is supposed to have come to the San Joaquin river from the Coast range of mountains.

Fruit Prospects Much Injured.—Stockton Mail: Peach prospects are the poorest for many years. Some orchard men only expect half of an average crop. The buds and blossoms of all deciduous fruits promised an abundant crop, but wind and rain had either blown or washed away the fruit germs or the pollen, from either or both of which causes the present prospect was greatly reduced. Ralph Vignolo, a fruit buyer who has abundant opportunities for observing conditions in the fruit regions, confirmed what Mr. Stein said, but said that vine buds had not suffered. He also said cherry prospects were generally poor. The Black Tartarian promised well in the vicinity of Stockton, but the Royal Ann crop would be light, while around Lodi the conditions were reversed.

Big Watermelon Crop.—Lodi special to Sacramento Bee: The watermelon crop in this one-time famous melon country promises to be a large one this year. A number of ranchers have gone into this line and expect to make plenty of money, present indications being so flattering. Edward Powers of this place has rented 200 acres of land in Manteca and set it to watermelons. This is the biggest melon acreage in the country.

Big Price for a Small Vineyard.—Lodi Sentinel: George F. Covell has sold his vineyard of 36½ acres near Woodbridge for $16,790, or $460 per acre. The vines are of the Tokay variety and the place has a border of almond trees. There is a small packing house on the land. The purchaser is the Oppenheim Fruit Company of Lodi, Florin and Woodbridge. For the years 1902, 1903 and 1904, Covell derived aggregate net profits of $657 per acre from this piece of property. Table grapes, particularly Tokays and Emperors, are very much in demand in the Eastern market, and property of this description has been very profitable for some years.

Shasta.

Bad as Maud, the Mule.—Anderson special to Sacramento Bee: John N. Baker and his brother were trying to rope a four-year-old bull. They had roped the animal and were trying to get it close enough to a post in the corral to tie it. The brother had hold of the rope, which was twisted about the post. John Baker seized the bull by the tail to try to draw its body around toward the post. At this juncture the rope broke, and the stubborn bull fell backward on Baker, pinning him to the ground and breaking his leg.

Solano.

First Box of Cherries.—Vacaville Reporter: The first box of cherries left Vacaville yesterday (April 7th). It was a 10-pound box of Purple Guignes, grown by James H. Smith, and was consigned to the Earl Fruit Co., Philadelphia. Mr. Smith was the fortunate gentleman who received $70 for the second box of cherries shipped from Vacaville last year. While this is not the record for early shipments, it beats last year by over three weeks, the first shipment in 1904 being made on April 30th. The year before that the first box went out April 25th. The earliest shipment ever made from Vacaville, and the earliest from the State was in 1899, when a 10-pound box of cherries left here on March 31st.

Alfalfa as a Source of Profit.—Republican: Peter Timm, about 1 mile from Dixon, has twenty acres seeded to alfalfa, under irrigation. Last year Mr. Timm harvested five crops from this tract, the entire yield being 179 tons, the greater portion of which was sold at $7.50 per ton, making a total gross income of $1342. The cost of irrigating the same was $240 and the expense of harvesting was $275, making a total expense of $515, leaving a net profit of $827, or over $40 per acre.

Sonoma.

Codlin Moth Parasites Increasing.—Santa Rosa Press-Democrat: E. K. Karnes of the State Board of Horticultural Commissioners visited Santa Rosa to see the results attained by the introduction of the colonies of parasites to destroy codlin moth in several orchards in Sonoma county. He was much pleased. It was found that the parasites are breeding rapidly, and as a result the number has been materially increased since the first parasites were turned loose in the orchards to feed upon the pest.

Stanislaus.

Wheat Crops Damaged.—Oakdale Leader, April 7: Dr. J. D. Young of Stockton, who owns a grain farm north of the Stanislaus, was at his farm home during last week in company with his family, returning to Stockton Monday. The doctor exhibited samples of his summer fallowed wheat in Oakdale, the blades of which were blighted from some unknown cause. The entire growth, excepting the stalk, being apparently destroyed, it is not believed that the heads will fill and that all grain so affected will not pay the expenses of harvesting. We have heard of other crops of summer-fallowed wheat being in a similar condition, and it is believed that the wheat crop will be cut short by the blight above referred to. Thus far the barley and oat crops appear to be in a healthy condition. The blight is not caused by what is commonly known as rust, but appears to be a premature drying of the blades.

Sutter.

Twin Mule Colts.—Yuba City Farmer: The driving mare of C. J. Speer, of this county, gave birth last week to twin mule colts and, as this is the second occurrence since Mr. Spear has owned the mare, he naturally prizes her highly. The colts are doing fine.

Good Sale of Mules.—The Carstenbrook Bros. recently sold thirty-nine head of work mules to parties in the San Joaquin valley, at an average price of $265 per span. Mules are getting higher and becoming scarce in this State.

Tehama.

Shearing 28,000 Sheep.—Vina special to Sacramento Bee, April 5: Sheep shearing commenced on the Stanford ranch yesterday. Forty men are at work cutting the wool from the 28,000 sheep belonging to the large ranch. The percentage of lambs here has not been as good this season as in bands at other places, owing to the depredations from eagles and coyotes. In addition to the county bounty, the Stanford ranch gives a bounty of $1 on eagles and $2.50 on coyotes.

Yuba.

Wool Commands Good Prices.—Marysville special to Sacramento Bee: The sheep raisers and wool producers in Yuba and Sutter counties have no fault to find with the prices being offered for their spring clip, and many are selling in the face of the prediction that better figures will be made on the occasion of the official sale to take place under the auspices of the Yuba and Sutter Counties Wool Growers' Association shortly. The prices paid thus far average from 17 to 70 cents. Large producers like Mrs. E. Wilbur of District 70, Vincenzo Gianelli of Honcut, J. B. Tisdale, M. Girdner and Brown Bros. of Sutter county and Andy Robinson of Yuba county have sold the greater portions of their clips. A number of the farmers have yet to shear their flocks. One lot of sixty-six bales brought 19 cents and another lot of fifty bales brought 20½ cents.

Neighbors Sow Crop of Stricken Farmer.—Marysville special to Sacramento Bee: Last week Lon Graffis was taken unexpectedly ill and his ailment developed into pneumonia, and caused the postponement of the putting in of his crop. The neighbors are now to the rescue. Two have taken up the task of plowing, two others are following up with the harrows, and a third set are busying themselves with the sowing of seed. The result will be that Graffis will share in the bounteous harvest that is promised to this section, and he lives in the consciousness that there is in the makeup of his fellow man something higher than greed and covetousness.



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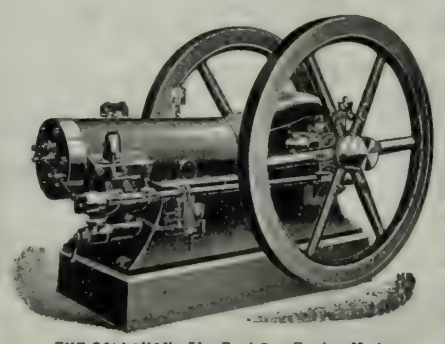
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SHEEP AND WOOL.

Mohair Shearing and Handling.

C. P. Bailey & Sons of San Jose furnish the following timely suggestions: The price of mohair this past year has not been very good, but prospects are flattering for the coming season, and as shearing time is near at hand it may be well to consider some of the methods of securing the clip and packing it so that it will bring the most money. Some of the mohair will have to be shipped a long way and some a comparatively short distance.

Hand Shearing. — Hand shearing with the usual spring sheep shears was the only method formerly employed to clip the goats; but now that the machine shear has been perfected, a good many breeders prefer the machine. In the Western country organized crews of hand shearers travel from place to place and shear both goats and sheep at a specified price per head. These crews have their leaders and all contracts are made with the leader, he securing the members of his crew. Most of these men are professional shearers and they will average from 100 to 150 animals a day. Sometimes they do excellent work and sometimes the shorn stock carry away about one-quarter of the clip in irregular patches on their bodies. Only occasionally is an animal cut badly.

Regular shearing corrals are erected and thousands of animals are shorn in these corrals during a season. These professional shearers never tie the feet of an animal, as it takes too much time and is unnecessary. They sit the animal on his haunches, hold his neck over the thigh with the arm and off comes the wool or mohair. If the animal is a goat the shearer gets some exercise, as a goat will jump and squirm if cut, but a sheep will sit perfectly quiet. Shearers who are not used to goats find it difficult to work with goats for a few days because of the activity of the Angora, but mohair shears more easily than wool and the shearer soon finds that he can handle more goats in a day than he can sheep. Some breeders who own small flocks find a shearing table a great convenience, as they do not have to lean over and the goat is securely held at all times. One should select short shears (blades not over 5 inches long) for goats, as double cut mohair is partly ruined and the point of a long shear will always cut some mohair which was not intended to be clipped with that particular stroke of the shears.

Machine Shearing. — The new machine shear is certainly doing fine work. They shear the animal slick and clean and there are practically no "double cuts" or cut goats. The only difficulty seems to be in sharpening the knives and in keeping the machinery in order. There are several hand power and power plants now working successfully and the owners wouldn't use anything else. They claim more mohair to the goat (from ½ to ¾ of a pound) and also that they can shear more animals in a day. At the great shearing contest at the Universal exposition at St. Louis last fall marvelous work was done and those who saw the machine shears at work will agree that the machine shear is the only thing, when they work.

Packing Mohair. — Don't tie Angora goat fleeces, the mills say, as the small pieces of twine which stick to the mohair won't take dye, and they can be seen in the manufactured goods. The fleeces, however, should be kept separate, and to do this the fleeces should be wrapped as fast as they are shorn and put into sacks or bales. If one has a considerable quantity of mohair, and if the freight rates are less on baled material, one should certainly buy or make a baling press. It costs less to bale mohair than to sack it and it carries much better for long shipments.

Mohair should be graded to some extent as it is shorn. Tag locks, discolored or very kempy mohair should not be put in with fine material. The mohair should be kept clean and burry stuff should be packed separately.

THE DAIRY.

Testing Alfalfa Seed.

The vast increase of the California acreage of the alfalfa plant which is largely involved in dairy expansion increases interest in the purity and viability of the seed. In the Pacific Rural Press of December 24 we gave some interesting hints on this matter prepared by O. M. Ball, botanist of the Texas Experiment Station, and we have now other important details from the same source.

Weed Seeds.—The seeds of these pests are not intentionally placed in the alfalfa by the growers or handlers, but accidentally find their way into the seed since much of the alfalfa seed sold on these markets is from parts in which the foreign weeds are prevalent. Many of these seeds are of about the same size and weight as those of alfalfa and hence are not screened out during the cleaning. So far as the work of this department has extended, we have not found that willful adulteration of alfalfa seed with other similar, but less valuable seeds, is anywhere practiced.

Many planters will not buy the highest grade of seeds, but prefer to sow a cheaper grade. It is of course advisable to buy economically, but such buying is not economical. The cheaper grades of seeds are almost always those which have a large proportion of impurities, or else are old seeds which have lost their vitality to great extent. Hence such a buyer in the end pays a higher price for his seed than he who insists upon having the best grade.

Foreign Weeds in the Seed.—We have recently received a sample of alfalfa seed which showed an average of 180 foreign seed to the ounce, of which twenty were of the Russian thistle. The amount usually sown to the acre is twenty pounds. At this rate, the farmer would find about 57,500 foreign weeds upon each acre which he sowed, supposing that most of the seeds germinated, of which 400 would be of Russian thistle. One need not be surprised that the whole crop had to be destroyed in order to get rid of these intruders. Of the weed seeds above mentioned, the greater part were of rib-grass, or plantain, which, in itself, is not a pest, but certainly would be in an alfalfa field.

Examination of the Sample.—Every one contemplating the purchase of seeds should be able to examine the sample for himself. The methods of doing this are very simple. Before purchasing the seed, secure a small sample, say one ounce. This should represent the seed fairly and should be obtained from several parts of the whole pile and should be thoroughly mixed. Spread about a tenth of the sample, after thoroughly mixing, out on a sheet of white paper, and with a case knife, separate the alfalfa seeds from the

(Continued on Page 236.)

THE TRIUMPHANT EMPIRE

"It Makes the Most Dollars for You"



Thirty times as many Empire Cream Separators were sold in the United States last year as were sold four years ago.

Thirty times as many dairy farmers decided last year that the Empire was the best cream separator.

Thirty times as many Empire Cream Separators are now being built at the Empire factory as four years ago.

Thirty to one represents the increase in the sales of the Empire in four years' time.

Wherever the Empire has been introduced it has become the most popular cream separator. Never in the history of the dairy industry has any machine of any kind made such rapid strides in sales and popularity.

The number of Empire Separators sold in 1903 was so great that we called it "our Banner year," but the increase in 1904 made that a double-headed Banner year, and the prospects for 1905 indicate that this is going to be a **triple-headed** Banner year!

Why Is This So?
There Must Be Some Good Reason.

Does it not suggest to you that the EMPIRE is a pretty good sort of a separator?

Could any machine make such rapid progress unless it has exceptional merit and gives universal satisfaction?

No amount of advertising and no sales organization, no matter how perfect, could have accomplished such results unless the machine they sold did all that was claimed for it.

Many users tell us the EMPIRE does **much more** than we claim for it.

Such rapid strides, increased sales and greater popularity speak most emphatically of merit. If EMPIRE purchasers were dissatisfied, could such increased sales possibly have resulted?

Purchasers of the EMPIRE machines must have told their neighbors that the EMPIRE was all right, or so many neighbors would not have wanted to buy the EMPIRE.

We don't claim that the EMPIRE is the "original" or "the only "separator made, but we **do** claim, and the **records bear proof**, that an investigation of its merits almost invariably leads to its purchase.

That is all we ask—an investigation.

You will find the explanation in the extreme simplicity of the construction of the EMPIRE. All needless, troublesome parts are eliminated.

This means fewer parts—less friction—easy running—easy cleaning—less oil—fewer repairs—less fuss and bother—longer life—better service—more satisfaction—bigger profits—

"The Most Dollars For You"

We don't urge you to buy an EMPIRE, however, on the judgment of others. We don't ask you to buy an EMPIRE on our say-so; all that we ask of you is that you investigate its merits and then decide for yourself. If the machine itself does not convince you that the EMPIRE is the cream separator for you to purchase, we have nothing more to say.

The EMPIRE machine itself is the best advertiser and the best salesman on our force. Our advertising and sales organizations both bow to the EMPIRE and its merits as the one great essential feature in bringing it into such universal favor.

Send us your name, tell us how many cows you milk and we will see that the EMPIRE does the rest. We have several books on dairying for you. They are free.

GOOD MEN WANTED. So many dairy farmers are asking about the EMPIRE that it becomes necessary for us to constantly increase our sales organization. We are always on the lookout for men of merit and integrity to accompany the EMPIRE to these numerous inquirers. We want only men, however, who will make this their life work and take it up with the idea well fixed in mind. If you are only looking for a job for three or four months to fill in, don't bother us with your application, but if you want, or know of any good man who wants, a permanent, twelve months in the year situation, write us.

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The Home Circle.

The Blues.

I do not fret because it's wet,
  I do not sigh because
Through foolish waste or reckless haste
  I'm poorer than I was;
But, oh, I'm very, very blue;
I can't tell why—I wish I knew.

Life seems a hollow mockery,
  A useless thing, at best;
There does not chance, just now, to be
  A knife-thrust in my breast;
I've lost no friend nor made a foe,
And why I'm sad I do not know.

I do not mourn because I've worn
  My clothes to shabbiness;
I'm big and strong and nothing's wrong,
  I'll candidly con'ess—
But I am weary in my soul;
The world is such a dismal hole!

The sun is shining in the sky,
  The robin's on the wing,
But, oh, to just lie down and die
  And not know anything!
My heart is heavy, I am sad—
It seems so foolish to be glad.

The south wind blows through scented rows
  Of apple trees in bloom,
But every man I turn to scan
  Is going to his tomb;
I whistled yesterday—alack
Fair yesterday will ne'er come back!

The things that charmed me once appear
  Unworthy, or are gone;
My goal has fallen, and I hear
  No voice cry, "Up and on!"
You call me foolish—so are you,
Confound it, when you're feeling blue!

—S. E. Kiser, in the Chicago Record-Herald.

The Mirror's Philosophy.

A mirror met, by chance, a window pane,
"Good friend," the latter begged, "can you explain
Why our good mistress lavishes on you
Such loving care and such devotion true,
While I, though ever eager for a chance
To serve, am seldom favored with a glance?"
"The reason, gossip, is not far to seek,"
Replied the mirror as he rose to speak:
"Through you each day her neighbor's charms are shown;
I, wiser, tell her nothing but her own."

—J. Forsyth Smith.

Good and Bad Luck.

Good luck is the gayest of all gay girls;
  Long in one place she will not stay;
Back from your brow she strokes the curls,
  Kisses you quick and flies away.

But Madame Bad Luck soberly comes
  And stays—no fancy has she for flitting;
Snatches of true-love songs she hums,
  And she sits by your bed, and brings her knitting.

—John Hay.

A Cowardly Traitor.

"And how many do you say you are?"

"Twenty-two, Excellency, including myself."

The chief of the secret police took the paper handed to him and silently compared it with one in his desk.

"Bardin, Loubanoff, Sobotin—I was not aware of these last. You have done well, Radowitch, and you will find that the Czar's government is not ungrateful to those who serve it well. Your recent action will atone for your past errors and merit reward besides."

"My life will not be worth the price of a glass of vodka if it is known that it is I who have furnished you this information."

"You should have thought of that before joining the society. I see you have something to suggest. What is it?"

"That when the raid takes place no distinction will be made between me and the others."

"Of course you will be arrested with them."

"And tried?"

"Yes, if you wish it, and condemned, too, for that matter. Anything further?"

"And pardoned along with the less guilty of the others, so as to avoid all suspicion."

"I quite understand you. Rest assured you will have no reason for fear in that respect.

The chief of police smiled to himself as the spy took his departure.

That very evening the raid took place. Taken as they were by surprise and unconscious of any treachery on the part of one of their number, the little coterie of students, artists and young doctors and lawyers found themselves bagged without a single exception. They indignantly denied the charge of conspiracy against the Czar. But General Trepoff's myrmidons merely shrugged their shoulders deprecatingly, perhaps incredulously.

In a few days the trial took place. Radowitch was not called to give evidence, but took his place among the accused.

At length all twenty-two were found guilty. Twelve were sentenced to Siberia, but not to the mines, thanks to the clemency of the Czar. It was with a thrill akin to horror that Radowitch heard himself sentenced to death along with the other nine, though conscious that it only formed part of the arrangement that he himself had suggested.

"Sentenced to Siberia would have served the purpose equally well," he muttered to himself, and, turning to look at his companions, he found himself wondering if his own face was as deadly pale as each of theirs.

"To be shot at the glacis of the fortress at sunrise tomorrow morning," he kept repeating to himself, though assuring himself that the words could have no reference to him, for the Czar must keep troth even with traitors, or none would be found to serve him in the future.

Dostoieffsky and the others calmly accepted their fate, and after a hurried farewell to their more fortunate fellows were conducted to their cells for the last time.

The long night passed all too quickly for him for whom the messenger he expected was so unaccountably delayed. He had seen General Trepoff in court from day to day, and once a glance of intelligence, he persuaded himself, had passed between them.

At last a faint gray light began to manifest itself through the grated window of his cell. Radowitch began to explain in husky tones that his conviction was all a blunder. The two wardens looked intelligently at each other and pityingly upon the wretched prisoner, but said not a word.

In a few minutes all the ten were assembled in the courtyard of the prison, nine of them calm and collected, for the bitterness of death was already past, one a prey to fear and sickening terror, and evidencing it all too plainly in his trembling limbs and livid countenance. In the hurried goodbys they exchanged with each other Radowitch came in for more than his share of attention.

"It is all a mistake," mumbled the wretched man. "Where is General Trepoff?"

"He is never present at executions," replied the officer in charge. "He issued his final orders last night."

And then a melancholy procession began to move toward the glacis of the fortress prison. A priest led the way, holding aloft a large cross before the eyes of the doomed men, who followed in single file, their ordinary dress covered with a long robe of white linen, at once a covering for the living and a shroud for the dead.

At last they reached the place. Five stakes had been driven into the ground near the summit of the long, even slope of the rampart. To these they were bound in couples, facing the east, now kindling with the flush of the rising sun, whose coming was to be the signal of their death. Ranged in front of them at a distance of 15 yards was a company of soliders with loaded rifles, whose captain, standing a little way apart, held in his hand a white handkerchief, at whose fall sixty tongues of fire would leap forth and sixty bullets seek the hearts of the unhappy men.

There was still time for the last scene but one in the tragedy before the sun should rise. The cross was held before the lips of each man for a final kiss in turn. Then a dagger was broken over their heads by a soldier detailed from the thousands drawn up to witness the vengeance of the Czar. At that moment the sun seemed to bound into space, and every heart seemed to cease beating.

But the officer has not let the fatal handkerchief drop. Instead the retreat is sounded on a score of bugles and the troops march off the grounds. The kneeling men are informed that the Czar has been graciously pleased to save their lives. They are unbound and as if in a dream try to realize all that has happened and to congratulate each other ere the lost couple had been reached. One of these had fallen forward on his face as far as the ropes permitted. It was Radowitch

"He has fainted," said the captain.

The surgeon hurried to his side and bent over the prostrate figure. "No need to trouble," he said quietly, "the man is dead. The fright has killed him."

It was true. The chief of the secret police had carried out his promise too literally. The spy had no longer reason to fear his betrayed comrades' revenge. — Andrew Warner.

The Abolition of Middle Age.

Half a century ago a man of forty-five was regarded almost elderly, and a woman of the same age was expected to have long since cut herself adrift from all ties binding her to her youth and to assume the appearance and deportment of a staid, exemplary matron. All this has changed in a particularly interesting way, of which the prominent feature is a seeming contradiction. If the three-year-old child of today is as knowing as was the six-year-old of half a century ago, and the ten-year-old boy of today is in many respects quite as much a man as was his grandfather at eighteen, one might naturally expect that in due gradation the modern middle-aged man should be old beyond his years. But such is not the case.

Middle age, so far from hurrying on into senility, so far even from standing still, would seem actually to have stepped backward and marched alongside of youth. There is a jauntiness, a buoyancy, an elasticity about the middle age of today at which our fathers would have shaken their heads as unseemly. The gulf which once separated the middle-aged parent from his children has been filled up. The curtain which shrouded the middle-aged man generally from the eyes of youth, and which caused him to be regarded with respect, if not with awe, has been lifted, and in obedience to the same influences which have made the schoolmaster the friend of the schoolboy and the regimental officer almost the comrade of his men, the middle-aged man of today is never so happy as when working or playing upon an equality with, and actually in competition with, youth.

As with men, so it is with women. Social statisticians tell us that the age at which women are considered most eligible for marriage has been very notably advanced of late years, and we know that the lament of many a match-making mamma is that the most dreaded rivals of her darling are not to be found so much among the girls of her own age as among women who not many years ago would have been relegated to the ranks of hopeless old maidenhood. The fact that the middle-aged woman of today is much younger in manner and tastes is, of course, not the only reason for this, but it is among the most potent. — The Spectator.

Colds and Their Causes.

The really important question is, in what does predisposition consist? We talk of a man "catching a cold." But it would be more correct and equally graphic to say the cold has "caught" the man. For it does catch him unawares, and often when he least anticipates it. But no cold ever caught any man unless he had first prepared the ground for it by a careful process of fertilization.

No amount of mere exposure to a low temperature alone will cause a "cold" in a perfectly healthy man, in whom the product of wear and tear of nerve and muscle, with an adequate excretion of waste products, on the one side, is evenly balanced by food supply and exercise on the other. Where the equilibrium does not exist such exposure then operates as a "chill."

Now, who are the people who are liable to catch cold? Not those whose dietary is so carefully adjusted to the work they have to do that there is no opportunity for the accumulation of unused foodstuffs in their tissues, but those who, in the better-fed ranks of society, eat and drink more than they need to meet the daily requirements of their bodily activity, and are thus continually storing up in their tissues and excreting organs material which, if appropriately used, would form valuable ammunition for the development of energy, either of body or mind, but which, when stored beyond a certain point, has to be blown off in a "cold" or a "bilious attack," or in a pronounced fit of gout.—Chicago Chronicle.

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Hints to Housekeepers.

When peeling onions begin at the root end and peel upwards, and the onion will scarcely affect your eyes at all.

To make meat tender put a tablespoonful of vinegar in the tin with the meat, or over it if hung, and it will make the toughest piece of meat tender.

A sponge or face flannel which has become slimy through constant use of soap should be well rubbed with salt and then rinsed in cold water. By this process it becomes practically new.

For perspiring feet dissolve an ounce of sulphate of soda in a pint of hot water and rub the feet over with this every night and morning. Dust a little boracic acid into the stocking.

In addition to the weekly scrubbing of the refrigerator, it is a good plan to occasionally take out the shelves and boil them with a handful of washing soda. The wash boiler may be used for this purpose.

Rust on steel may be removed thus: Cover the steel with sweet oil, rub it in well, and let it stand for forty-eight hours; then rub the steel with unslaked lime, finely powdered, till all the marks have disappeared.

A diet of young carrots is said to be excellent for the skin and all its appendages of hair and nails. This is attributed to its anti-scorbutic salts, its oily matter and the iron which exists in all red-colored vegetables and fruits.

Orange frosting for cake is made by grating the rind of an orange and squeezing the juice and a tablespoonful of lemon juice over it. Gradually beat into the mixture confectioners' sugar until the proper consistency is reached.

To clean white furs, take two or three handfuls of flour and put it in the oven to bake for a few minutes. Place the fur on the table and rub the flour into it well with a piece of wadding. Leave it for half an hour, then shake all the flour out well from the fur and it will look like new.

The things for a woman to eat whose complexion is not above reproach are cooked vegetables, raw and cooked salads and stewed fruits. The cooked salads are those that are made of vegetables and the Russian salads, which are composed of shredded beets, cold potatoes, string beans and peas, all beautifully dressed with mayonnaise.

The florists are showin g dwarf lilac trees in full bloom, and any number of Japanese plum and apple trees. These make lovely decorations, costing no more than cut flowers, and lasting much longer. They are charming for corners, for piano decorations, or to fill any space where a tall jar of flowers is appropriate.

Hard-boiled eggs, with cheese sauce, is a favorite luncheon dish in a certain nursery. The eggs are served hot, broken in two with a fork, the hot cheese sauce poured over them. The sauce is made with butter, flour and milk, cooked into a white sauce, and having a generous quantity of grated cheese stirred into it just before it is done.

The Lead Pencil Evil.

One practical lesson that should be taught in every school is that a lead pencil must never be put in the mouth.

More important than the study of algebra, the study of Greek or Latin, the study of rhetoric or the study of literature, is the lesson that a lead pencil should never be stuck in the mouth. Nearly every scholar has this habit, and a very pernicious habit it is.

If the school teacher would insist upon this as a rule, and correct every child that has this filthy habit, it could be broken up. People who have passed through school and have formed the habit of putting the pencil to the lips every time it is used are beyond hope. But with the children something could be done.

The pencil does not write so well after it has been wet as before, but there seems to be a notion that in order to make the pencil write, it must be moistened with the lips. This is not true. Probably everybody knows it is not true. In public places, people who are very squeamish, ordinarily, will pick up a pencil that has been used by hundreds of other people, and the first thing they do is to put it in the mouth.

It is a habit that ought to be broken up. Every school teacher should take up the crusade. Pupils should be told frequently never to put the pencil in their mouths. When caught doing it, some sort of punishment should be inflicted upon them until they get it into their heads that the practice is ridiculous and dangerous to health. While the graphite that composes the so-called lead of the pencil is not of itself a very harmful substance to be taken into the mouth, yet the point of the pencil is necessarily dirty.—Health.

When People Lose Their Taste.

"When people lose their taste," said a physician, "they retain their old likes and dislikes just the same. Miss Smith, for instance, can't tell a slice of roast beef from a fried onion, but she disliked onions before her taste went, and therefore she won't eat them now.

"People lose their taste through severe illnesses, and with the loss of taste the loss of smell nearly always goes. Hence queer, cruel practical jokes. I know a woman without smell to whom a pint of onion juice was sent in a cologne bottle. She deluged herself with this onion juice and appeared in a crowded, heated ballroom.

"To a man without taste or smell all cheeses must be alike, yet old Brownlow won't touch limburger. He says it would make him ill, and probably it would. It is very odd to hear these deficient people praising and condemning food and drink. They do it, though. They do it as heartily as you or I.

"I have seen old Brownlow send away in disgust a glass of white wine, claiming it was corked, while at the same time he ate calmly an addled egg."—Baltimore Herald.

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Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
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Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.
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The Markets.

San Francisco Produce Report.

San Francisco, April 12, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 14 @1 17⅜	87⅛@ 88⅞
Thursday	1 18⅜@1 17¼	86¾@ 87⅞
Friday	1 16 @1 17¼	87⅛@ 88⅛
Saturday	1 17 @1 15½	88¼@ 87⅛
Monday	1 16 @1 14	87⅛@ 86⅝
Tuesday	1 13½@1 14⅝	86½@ 87⅜

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	47¼@48⅛	47¼@48¼
Thursday	48 @48⅛	48⅜@47⅞
Friday	47¼@48⅛	47⅜@48
Saturday	48¼@47¾	47⅞@47½
Monday	47¾@48⅜	48 @47⅝
Tuesday	48 @48½	47⅝@48¼

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$ —@—	$1 28⅜@1 29
Friday	1 44½@—	—@—
Saturday	1 45 @1 44⅞	1 29¼@1 29
Monday	—@—	1 28⅝@1 29
Tuesday	—@—	1 29⅛@1 29¼
Wednesday	1 44½@—	1 29⅛@1 28⅞

Wheat.

The local market has shown little life, offerings being too small to permit of activity, and this will continue to be the case until the crop now maturing begins to come upon the market. The acreage to wheat in this State is believed to be materially larger than last year, and the prospects at this date are favorable for a good yield, but the most critical period is still ahead, and the harvest may prove only fair or decidedly poor. While there have been liberal rains, in the central and northern counties the amount of moisture up to date is not much ahead of that for corresponding time last season, when the crop turned out light owing to dry weather in the spring months. In some parts of the State serious damage from rust is reported on account of excessive moisture. Through speculative manipulation and the squeezing of shorts, May wheat was crowded up in Chicago to $1.18¾ per bushel, but it did not long remain at this point, and has since sold down to $1.13½. In the local market there was no great fluctuation in options and no special changes in prices of spot wheat, but a generally firmer tone than previous week. Liverpool inclined upward, largely due to a decrease in shipments from Australia.

California Milling	$1 55	@1 62½
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 wheat	1 40	@1 45
Oregon Club	1 40	@1 50

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.45@1.44¼.
December, 1905, delivery, $1 28⅝@1.29¼.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.44½; December, 1905, $1.29⅛@1.28⅞.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903–04.	1904–05.
Liv. quotations	7s0½d@7s0½d	6 9½d@—s–d
Freight rates	16@—s	17½@—s
Local market	$1 35@1 37½	$1 40 @1 45

Flour.

Stocks in this center are of only moderate volume and are largely the product of mills outside the State. No increase in supplies or offerings is looked for until new wheat becomes available for millers. Values are without quotable change, but for favorite makes are being well maintained at the current range.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Considering the somewhat limited offerings of this cereal, business has been of fair volume. Trading has been mostly in feed descriptions, and the market for desirable qualities tolerably steady, the quotable range of values remaining close to the figures previously quoted. Moderate quantities of barley, mostly crushed, are being forwarded to the Hawaiian Islands, but with this exception there is little outward movement at present, and stocks are too light to spare much for shipment. There is every probability there will be a good European demand for California barley of new crop when it comes upon the market. Trading in the speculative market has not been active, nor was there much fluctuation in the price of options. May barley was more favorable to buyers, but December option ruled firmer.

Feed, No. 1 to choice	$1 20	@1 22½
Feed, fair to good	1 17½	@1 20
Brewing, No. 1 to choice	1 22½	@1 27½
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 22½

Oats.

Very little arriving from any quarter, but common feed qualities are in more than ample supply for the immediate demand. While not quotably lower, the market for ordinary feed oats lacks firmness. Choice to select oats are commanding fully as stiff figures as for some time past and are not obtainable in great quantity at any price.

White oats, fancy feed	$1 55	@1 60
White, good to choice	1 47½	@1 52½
White, poor to fair	1 40	@1 45
Milling	1 45	@1 60
Black oats	1 35	@1 70
Red, fair to choice	1 35	@1 60

Corn.

Eastern product is now in fairly liberal supply in this center and in some instances is being crowded to sale at figures hardly covering cost of importing. Considerable California corn is offering and market is easier, more especially for Yellow. Choice Large White is not in heavy stock. The steamer San Juan, sailing Saturday, took 6,187 centals for Central America.

Large White, good to choice Cal	$1 40	@1 45
Large Yellow	1 35	@1 40
Small Yellow	1 60	@1 75
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 30	@1 37½

Rye.

Offerings are light and include little which can be termed No. 1 or better.

Good to choice	$1 60	@1 65

Buckwheat.

Not enough on market to admit of other than a small peddling trade.

Good to choice	$2 00	@2 25

Beans.

Values for good to choice beans of most varieties are being well maintained at the quoted range. Limas have shown a little weakness, as prices for same had been crowded to a point which caused outside buyers to temporarily abandon the market. Stocks of Red beans are extremely light.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 60	@2 90
Pinks	3 25	@3 75
Bayos, good to choice	3 00	@3 25
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	4 75	@5 00
Black-eye Beans	2 60	@2 90

Dried Peas.

There are few domestic peas of any sort now on the market and virtually none which can be termed strictly choice. Some Eastern peas are being landed here by millers.

Green Peas, California	1 50	@2 00
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

Not many hops now offering in this center, neither is there evidence of any active demand. Holders are generally firm in their views and in not a few instances are expecting to realize better prices before the season closes than are at present warranted as regular quotations. The last steamer for Australia took 11,880 lbs., about 65 bales. Late Eastern advices report the sale of 700 to 800 bales of New York hops, strictly choice, at 27c. for export. Eastern brewers are reported being offered 1905 Pacifics at 19@20c. under contract. Pacific Coast hops of 1904 are quoted in the East at 23@28c. for medium to choice.

California, good to choice, 1904 crop	24	@26

Wool.

The market continues to present a strong tone. Local dealers are giving out very little information, saying there is nothing doing here. They are operating in the country and do not want producers to be posted on the actual condition of the market. Quotations below are based on recent prices paid here and in the interior. The following is from the American Cultivator of Boston: At a recent meeting of wool growers, S. D. Joslin said: "I think the prospects were never so promising. In Maine," he continued, "we notice the greatest increase in price of wool. Last June the buyers began by paying 17c. and claimed that was all they were to pay or could afford to pay, but before the season was over the local mills paid 25c., and those now holding wool hold it at 30c. This is partially accounted for by the fact that the local mills need at least one-half of the entire clip, as the sum total is but 1,500,000 pounds. They are principally one-quarter and three-quarter bloods. The sales of wool in Boston markets for 1903 were 212,071,000 pounds, against 278,407,000 pounds for 1904—an increase in sales of 65,336,000 pounds for 1904, which has reduced the stocks to a much lower level than at any time since a record has been kept."

SPRING.

Northern, free	24	@26
Northern, defective	20	@23
Middle County, free	21	@24
Middle County, defective	17	@20
San Joaquin and Southern, free	17	@21
San Joaquin and Southern, defective	13	@16
Oregon, good to choice	20	@24
Nevada	16	@23

Hay and Straw.

Absence of firmness continues to prevail in the hay market for the general run of offerings. Strictly choice Wheat and Tame Oat is not offering freely and meets with tolerably prompt sale at current rates. Common to medium qualities of stable hay drag badly at irregular and low prices. Not much Alfalfa or Straw arriving and scarcely any inquiry for either.

Wheat, good to choice	$11 00	@13 00
Wheat and Oat	9 00	@11 50
Tame Oat, fair to choice	8 00	@10 50
Wild Oat	7 00	@9 00
Barley	8 00	@10 00
Alfalfa	7 00	@10 00
Clover	6 00	@9 00
Stock hay	6 00	@7 50
Compressed	11 00	@13 00
Straw, ₱ bale	25	@50

Millstuffs.

Bran is being rather firmly held, with stocks limited. Middlings are in good supply as compared with immediate demand. Values for Rolled Barley are steady. Market for Milled Corn has been inclining in favor of buyers.

Alfalfa Meal, ₱ ton	$21 00	@22 50
Bran, ₱ ton	21 00	@22 00
Middlings	25 00	@28 00
Shorts, Oregon	21 00	@22 50
Barley, Rolled	26 00	@26 50
Cornmeal	28 50	@29 50
Cracked Corn	29 00	@30 00
Oilcake Meal	32 50	@34 00

Seeds.

Alfalfa is receiving scarcely any attention, the season for seeding being practically ended. Yellow Mustard is in light supply and is being steadily held. Brown Mustard is virtually out of stock here. Business in Bird Seed is of a light jobbing character and at generally unchanged prices.

Flax	$1 75	@2 25
Mustard, Yellow	3 50	@4 00
Mustard, Trieste	4 50	@5 00
	Per lb.	
Alfalfa	8	@12½
Canary	6¼	@6¾
Rape	1¾	@2¼
Hemp	3½	@—
Timothy	5	@5½

Honey.

Stocks on the local market are not heavy and are mostly common Amber grades. The demand is slow. The new season being near, handlers are awaiting arrivals of new crop, which are expected to put in an appearance early in May.

Extracted, White Liquid	5½	@6
Extracted, Light Amber	4	@5
Extracted, Amber	3	@3½
Extracted, Dark Amber	2½	@3
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

Values are steady. The steamer San Juan, sailing Saturday, carried 3,115 lbs. beeswax for Belgium and 622 lbs. for New York.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Beef is in good supply and market easy in tone, although not materially lower. Large Veal is in ample receipt for the demand. Small Veal is not arriving in great quantity. Mutton and Lamb are coming forward in sufficient amount for current needs and values are barely steady. Hogs are arriving more freely than for some time past and market is easier.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½	@6
Beef, 2nd quality	5	@—
Beef, 3rd quality	4	@4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@—
Hogs, large, hard, over 200 pounds	5½	@5¾
Hogs, small, fat	5¾	@5¾
Veal, large, ₱ lb	4	@6
Veal, small, ₱ lb	5	@8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	10	@10½

Hides, Skins and Tallow.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11	— @10
Medium Steers, 48 to 56 lbs	— @10½	— @9½
Light Steers, under 48 lbs	— @9½	— @9
Heavy Cow Hides, over 50 lbs	— @10	— @9
Light Cow Hides, under 50 lbs	— @9½	— @8½
Stags	7 @7½	6 @6½
Wet Salted Kip	— @11	— @10
Wet Salted Veal	— @11½	— @10½
Wet Salted Calf	— @12½	— @11½
Dry Hides	— @18	— @17
Dry Kip and Veal, 11 to 16 lbs	— @15	— @13
Dry Calf, under 4 lbs	— @20	— @18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

There is little doing in this department. Quotations are based on asking prices and remain as last noted.

Bean Bags	$ 4¾	@5
Fruit Sacks, cotton	6½	@7½
Fruit Sacks, jute, as to quality	5¾	@7
Grain Bags, Calcutta, 22x36, spot	6	@6½
Grain Bags, Calcutta, buyer June–July	6½	@6¼
Wool Sacks, 4-lb	32	@—
Wool Sacks, 3¼ lb	30	@—

Poultry.

Demand was good for most kinds of poultry in fine condition, and market ruled firm for large and fat young stock, such receiving the preference. Retailers were buying ahead for the Jewish holiday of the coming week and also for the Easter trade. Small Broilers and Young Pigeons were in rather heavy supply as compared with the demand and prices for both averaged lower than previous week.

Turkeys, Dressed, choice, ₱ lb	$ 21	@23
Turkeys, live gobblers, ₱ lb	18	@20
Turkeys, live hens ₱ lb	18	@20
Hens, California, ₱ dozen	5 50	@6 50
Hens, large	6 50	@7 50
Roosters, old	4 00	@4 50
Roosters, young (full-grown)	7 00	@7 50
Fryers	6 00	@6 50
Broilers, large	3 50	@4 00
Broilers, small to medium	2 50	@3 00
Ducks, old, ₱ dozen	6 00	@7 00
Ducks, large young, ₱ dozen	7 00	@8 00
Geese, ₱ pair	2 25	@2 50
Goslings, ₱ pair	3 00	@3 50
Pigeons, old, ₱ dozen	1 25	@1 50
Pigeons, young	1 75	@2 25

Butter.

With demand almost wholly local, and receipts heavy of creamery and dairy butter, the market favored buyers. Prices are now at a point where many retailers and large consumers feel justified in contracting against future needs. Pastry butter is not in large stock and is commanding relatively better figures than higher grades.

Creamery, extras, ₱ lb	18	@19
Creamery, firsts	17½	@18½
Creamery, seconds	17	@—
Dairy, select	18	@—
Dairy, firsts	17½	@—
Dairy, seconds	17	@—
Mixed Store	15	@16

Cheese.

Current values for choice to select flats and Young Americas are being well maintained. Regular flats of high grade are most in request. Some cheese is coming forward which is not sufficiently cured and such is difficult to place at less than quotations.

California, fancy flat, new	12½	@13
California, good to choice	12	@12½
California, fair to good	11	@12
California, "Young Americas"	11½	@13½
Eastern	17	@17¼

Eggs.

Demand is brisk and market is firm at prevailing values, particularly for eggs running uniformly large and white. Some favorite marks are going to special custom at a slight advance on quotations. Some Eastern arrived and were placed in cold storage, costing too much to be profitably disposed of on the present market.

California, select, large, white and fresh	19	@20
California, select, irregular color & size	18	@19
California, good to choice store	16½	@17½
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Asparagus was in heavy receipt and had to depend largely on canners for custom. Choice Green Peas were not in excessive supply. String Beans were lower. Tomatoes were scarce and higher. Rhubarb was in liberal stock. Onions were firmly held.

Asparagus, No. 1 to choice, ₱ lb	5	@6½
Asparagus, No. 2, ₱ lb	4	@4½
Beans, Lima, ₱ lb	—	@—
Beans, String, ₱ lb	8	@10
Beans, Wax, ₱ lb	—	@—
Cabbage, choice garden, ₱ 100 lbs	50	@—
Egg Plant, ₱ lb	15	@—
Garlic, ₱ lb	8	@10
Mushrooms, ₱ lb	—	@—
Onions, Yellow Danver, ₱ ctl	4 75	@5 00
Peas, Green, ₱ lb	3	@5½
Peppers, Bell, ₱ lb	—	@—
Peppers, Green, ₱ lb	20	@25
Rhubarb, ₱ box	40	@85
Summer Squash, small box	1 75	@2 00
Tomatoes, Los Angeles, ₱ box	1 75	@2 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Old Potatoes of good to choice quality brought improved figures, stocks being of quite moderate volume. It will be a month or more before new potatoes will be on market in very great quantity or will be sought after by all consumers, and in the meantime desirable old are likely to meet with a firm market.

Cal. Early Rose, ₱ cental	—	@—
Salinas Burbanks, ₱ cental	—	@—
River Burbanks, ₱ cental	70	@1 10
River Reds, ₱ cental	65	@90
Oregon Burbanks, ₱ cental	1 00	@1 70
New Potatoes, ₱ cental	1 75	@2 50
Sweet Potatoes, ₱ cental	75	@90

Fresh Fruits.

The first Cherries of the season were forwarded East from the Vacaville sec-

tion on Saturday last. They were of the Purple Guigne variety. Cherries are expected to arrive here in quotable quantity the coming week; early shipments of ripe cherries will undoubtedly meet with a firm market. Strawberries are showing increased receipt and improved quality; comparatively good prices are being realized for best offerings. Apples are still in evidence, mostly out of cold storage; they are being held about as last quoted, with demand slow.

Apples, fancy, ℔ 50-box	2 00	@	2 25
Apples, good to choice, 50-lb. bx	1 50	@	2 00
Apples, fair to good, ℔ box	1 00	@	1 50
Strawberries, Longworth, ℔ chest	8 00	@	15 00
Strawberries, large var., ℔ chest	3 00	@	7 00

Dried Fruits.

Stocks of most kinds are now of small proportions. Handlers are already talking prices on new crop Apricots and a sale is quoted of prime Northern in 50-lb. boxes at 7½c, July delivery. The Prune market is firm for the large sizes, and steady for the small sizes, but on the medium sizes buyers are obtaining concessions. As to the coming crop of any kind of fruit, it is too early to know much. Cling Peaches promise to be light in a large portion of the State. Those interested in buying are taking an optimistic view of the outlook, regarding the situation as a whole; they are almost invariably talking big crops about this time of year. The steamer Senator, sailing the past week for British Columbia, carried 70,875 lbs. dried fruit, including 50,000 lbs. Prunes. Steamer City of Puebla, for same destination, took 53,947 lbs. dried fruit, including 30,200 lbs. Prunes. The steamer Sonoma, bound for Australia, carried 50,525 lbs. dried fruit, exclusive of raisins. The shipments per steamer Sonoma included 36,555 lbs. Prunes, 21,100 lbs. of same being for New Zealand. For the latter country there were also 5,400 lbs. Apples, 3,775 lbs. Apricots and 3,550 lbs. Peaches. Shipments to Australia included 1,250 lbs. Pears. The steamer Curacao took 9,092 lbs. dried fruit for Mexico.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	5½
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	10	@	12
Apricots, Royal, good to choice, ℔ lb	8½	@	9½
Apricots, Royal, fancy	10	@	11
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	8	@	8½
Peaches, unpeeled, fancy to extra fancy	9	@	10½
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	10½
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes, 1¼@1¼c; 40-50s, 4¼@4½c; 50-60s, 2¼@2½c; 60-70s, 1¾@2c; 70-80s, 1½@1¾c; 80-90s, 1¼@1½c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½	@	4½
Apples, quartered	3½	@	4½
Figs, White, in bulk	2	@	2½
Figs, Black	2½	@	4

Raisins.

There is a moderate movement, values remaining quotably as previously noted. The steamer Sonoma, sailing the past week, carried 23,467 lbs. raisins, mainly for New Zealand. A British Columbia steamer took 5000 lbs.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4 crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3¼	@	3¼c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded	6	@	c
Choice, 16-oz. Seeded	5	@	c
Fancy, 12-oz. Seeded	4⅞	@	c
Choice, 12-oz. Seeded	4½	@	c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Weather has been favorable for oranges, and the market has ruled firm for sound fruit. The smaller sizes of Navels commanded the best figures, although there was an active movement in large oranges at better average prices than had been ruling. Lemons were in fair request, but supplies proved ample for the requirements and prices were without quotable improvement. Limes were abundant and market was weak.

Oranges, Navels, choice to fancy, ℔ bx	1 50	@	2 00
Oranges, Navels, fair to good, ℔ box	1 00	@	1 25
Oranges, Seedlings, ℔ box	1 00	@	1 25
Oranges, Cal. Tangerines, half box	1 25	@	2 00
Oranges, Blood, ℔ box	—	@	—
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ℔ box	1 50	@	2 50
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

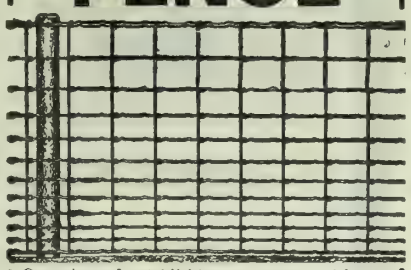
Not many Almonds offering, but inquiry is light and trade mostly of a small jobbing character. The Walnut market is quiet, but stocks of desirable quality are quite limited and they are being steadily held.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5¼

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Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	10	@11
Cal. Walnuts, No. 1 hard shell	11	@12
Cal. Walnuts, No. 2 hard shell	9	@10

Wine.

The market in this center continues quiet. Dry wines of last vintage remain quotable at 14@17c. per gallon wholesale for good to choice, San Francisco delivery. Sweet wines of 1904 are quoted at 25c. per gallon delivered at winery, 27½c. San Francisco. Some bogus and adulterated wines, discovered in this city by the Board of Health, have been destroyed, and it is to be hoped that all stock of this sort will meet with a like fate. The steamer San Juan, sailing April 8, carried 38,326 gallons and 2 cases, including 31,238 gallons for New York. Receipts of wine at San Francisco last week were 230,770 gallons, and for preceding week were 360,700 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	74,090	3,621,765	4,457,403
Wheat, ctls	27,680	2,417,295	2,004,338
Barley, ctls	30,377	3,097,351	4,971,156
Oats, ctls	1,398	802,519	801,554
Corn, ctls	23,596	196,930	131,264
Rye, ctls	750	46,585	48,344
Beans, sks	4,182	584,547	663,757
Potatoes, sks	22,821	1,094,468	1,100,637
Onions, sks	1,457	117,319	139,074
Hay, tons	3,208	150,366	143,979
Wool, bales	3,263	47,197	40,198
Hops, bales	657	38,736	29,266

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	29,892	2,391,184	2,870,056
Wheat, ctls	560	803,157	902,835
Barley, ctls	8,201	1,824,699	3,985,461
Oats, ctls	327	76,023	20,312
Corn, ctls	4,557	87,253	16,124
Beans, sks	704	46,229	35,300
Hay, bales	5,150	208,497	202,012
Wool, lbs	....	830,690	1,848,923
Hops, lbs	12,140	360,561	578,150
Honey, cases	20	2,129	4,327
Potatoes, pkgs	1,344	96,741	95,561

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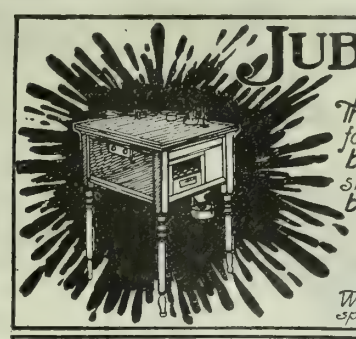
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Testing Alfalfa Seed.

(Continued From Page 231.)

suspicious foreign seeds. A count of the latter, multiplied by ten, will give the approximate number per ounce. The only source of error will be that deformed or immature alfalfa seed may be mistaken for weed seed, but proper care will eliminate this error. A small magnifying glass will materially aid the work, but is not essential, if the eyes are reasonably sharp, except where the sample is suspected to contain seeds of dodder, which are very minute and thus likely to be overlooked. The work is very light and pleasant and, if young ladies are present in the household, they will find it interesting and attractive.

The amount of inert matter (chaff, dirt, etc.) should be estimated in the same manner, since a high proportion of these means a direct loss of money.

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Method of Testing.—After having extracted the weed, seeds, chaff, dirt, etc., from the sample, the remainder should be again mixed and 100 seeds counted out at random from the pile, in order to test the germinating power. Place these upon a small piece of clean cotton, canton flannel, or clean blotting paper, and lay in the bottom of a common dinner plate. Wet the whole thoroughly with luke-warm water and cover with another plate, placing in a warm corner of the sitting room or kitchen. After three days count the number of seeds sprouted, removing each as counted. Cover again and repeat the process on the sixth day. The sum of the two counts will give the percentage of germinating seeds. Thus, if at the first count, the number found sprouting be thirty-six, and at the second, fifty-eight, the sum, ninety-four, indicates that that per cent of the seed have germinated. For the sake of accuracy, two plates, each containing 100 seeds, should be prepared.

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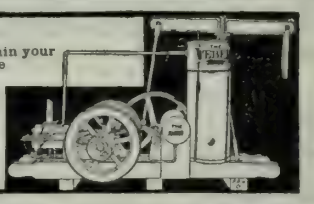


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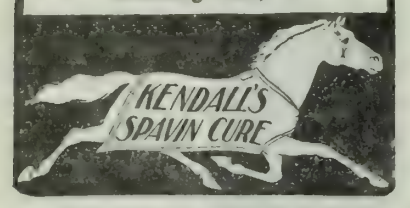
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HORTICULTURE.

The Struggle With the Pear Blight.

An address by Prof. R. E. Smith of the University of California at a meeting of fruit growers at Courtland, Sacramento county, and reported in the Union.

Most diseases of fruit trees affect only one or more crops, causing no serious or permanent injury to the tree. Pear blight destroys the trees. Pear blight attacks only trees belonging to the pear, apple and quince family. Among wild trees the hawthorne is affected.

It has been reported on plum and apricot, but is not likely to prove dangerous to these. In California the Bartlett pear is the tree most seriously attacked; serious because of the marketable value of the fruit. The Idaho pear, however, is more susceptible, and the Kiefer least so. The latter, however, have no commercial value in California, as the market demands the Bartlett.

No Resistant Stock.—The outlook for a resistant Bartlett is not good, and as no other variety will take the place of the Bartlett — commercially — the future does not appear very bright from the standpoint of the fruit grower.

While the apple is somewhat less susceptible, yet some early varieties are very prone to the disease, among them being the Alexander and Astrachan, a fact of great importance, as from these early varieties may be spread the disease to the later blossoms of the pear.

A Gridley orchard of Alexanders, twenty years old, became seriously infected and recently was cut out. Winter apples are less susceptible. On the apple the disease kills the blossom and fruit spur, but is not as likely to cause damage to the wood as in the pear, yet may produce what Professor Waite calls "hold-over blight"—of great importance in spreading infection the following season.

Blossom Turns Black.—In 99% of cases pear blight starts from the blossom, which turns black, as do the nearby leaves, as well as the young pears. The fruit spur also becomes black, and from this the disease passes down to larger and larger limbs, finally reaching even the trunk.

The distance traveled varies, as it is not uniformly progressive, but may, without any apparent cause, stop and dry out.

The disease is so very characteristic that there is very little likelihood of mistaking it for die-back and other similar conditions.

The dead blossoms are very characteristic, in that they hang on, and may be found on trees even in the fall.

Easy to Recognize.—In fact, the characteristics of the disease are such as to make it easy to become familiar with it. Unlike scab, codlin moth and similar diseases, the crop of any given year is not seriously affected, but uncontrolled it will surely eventually destroy the industry wherever it gets a foothold.

When the blight-affected limb dies and dries out in the fall a sharp line of demarcation between sound and diseased wood may often be readily observed. These cases are not so likely to propagate the disease as what Professor Waite calls the hold-overs. If the limb is dry the blight is dead. If it is juicy, soft and sappy, it is hold-over, and can reproduce the disease the following season. For this reason it is not best to take chances in cutting, but cut freely enough to insure removing all blight-affected wood.

Fortunately, the hold-over is comparatively rare, although, as it lives through the winter, it is the dangerous kind, furnishing the material from which fresh inoculations may be made.

A Bacterial Disease.—Pear blight is a definite bacterial disease, influenced more or less by climatic, seasonal and weather conditions. It is not a fungus. Pear scab is a fungus, but blight is due to a very small germ, resembling the typhoid bacillus, and grows in the tissues of the tree, and propagates especially in the soft inner bark, but very little in the wood. It has been determined that thorough cultivation and irrigation, favoring a rapid growth, with unusual softness of bark, predisposes to the disease, or at least increases susceptibility.

Spread by Insects.—On foggy mornings the soft, sweet, sticky gum containing large quantities of the specific germs may be seen exuding from the hold-overs, and it is this gum which is so largely responsible for the distribution of the disease in the spring.

Bees, yellow jackets, flies and other insects, as well as birds, alight on the limbs, and either get it smeared on their feet, or, as in the case of bees, sip the sweet, sticky gum, and passing to an uninfected limb or blossom infect it.

The excursions of bees and other insects may be traced through infected orchards in the spring by the progress of the blight. A striking instance of this fact, as well as the relation of the more susceptible apple to the spread of the disease, is shown by the experience in one down-river orchard, where the chief focus of infection proved to be some old apple trees, from which the disease was carried to neighboring Madeline pears, and from these to the nearest Bartletts, the sides of the Bartlett trees nearest to the apples and Madeline pears being most affected.

New in California.—While comparatively new in the Sacramento valley, it has been known in the United States upwards of 100 years, especially in New York State, whence it spread to other parts of the United States. It is comparatively rare in colder portions of the United States, never having been reported in Maine. It first became prominent in the upper San Joaquin five or six years ago, and since then has wiped out the pear in Fresno, Tulare and Kings counties.

Treatment.—It is a serious menace to this valley. As to treatment, many remedies have been tried, which in itself suggests difficulty in finding a good one. Sprays are of no value. In fact, the only treatment of proven value so far is based on Prof. Waite's "hold-over blight" as the cause of its propagation year after year, and this treatment is: Cut out not only the freshly infected limbs during spring and summer, but also so much of the limbs as do not die, but blackened by the disease still contain sap and are soft and juicy, and exude the soft, sweet, sticky gum, which the bees and other insects as well as birds can distribute to the fresh blossoms, and so start a fresh focus of infection.

The important conclusion to be drawn from Prof. Waite's discovery, then, is: Cut out, not only in spring and summer, but especially cut out "hold-over blight" in fall and winter before blossoming time. Examine the trees carefully from November until blossoming time, going over the orchard thoroughly a number of times during the fall and winter, making sure there is not a single limb of "hold-over blight" in the pear orchard.

What Can Be Done.—An instance of what can be done is shown by the results of an inspector working in Shasta county under the direction of the State University. In orchards claimed to be free from blight he inspected 24,000 trees and found 60 cases of blight, which might have become 600 or more by next season.

Method of Cutting.—Cut below the blight. In winter time the dividing line between sound and diseased wood is easily observed, and it is not so necessary to sacrifice sound wood as in spring and summer. While desirable to cut freely, yet it is not always necessary to cut the tree all to pieces. In spring and summer cut at least a foot of sound wood below the lowest infected spot. If cutting off a limb will not hurt a tree, cut it off.

The importance of disinfecting tools is not to be laughed at. Disease may be spread by the cutting tools employed, first cutting into the blight, and then into sound tissues. Crude petroleum as a disinfectant is objectionable because of the discoloration produced. A solution of corrosive sublimate (one part to 1000 parts of water) is one of the best and most convenient.

Secondary Treatment.—Secondary treatment is of some value. Lessening of cultivation is of value, especially in the rich soils of the Sacramento valley, where rapid growth of soft, susceptible material may be readily induced by stimulation. Slow-growing trees are least affected. Lessen the growth of the tree to the minimum compatible with normal requirements.

Pruning may be done so as to influence results. Keep blossom clusters off from the main body of the tree to prevent possible necessity of cutting off later on, in case of infection, a large limb. Encourage throwing out of laterals, as cutting these out for blight will not be so likely to injure the tree.

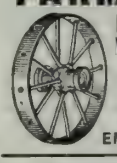
Co-operation Advised.—Blight demands thorough co-operation to secure the best results. A single orchard improperly handled will prove a menace to a large territory. At Yuba City one orchard thoroughly cut out before blossoming time is now being watched for results. The same is observed at Red Bluff and in Shasta county. The State has two specialists in the field supervising this work.

It is hoped to put eight or ten inspectors in the field in California during the coming fall and winter and cover the territory from Shasta to Kern. In conclusion, let it be borne in mind that while cutting should be carried on vigorously so long as any blight is to be found from now on, yet the important work from the standpoint of the future is that which should commence next November—the cutting out of "hold-over blight."

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Patrons of Husbandry.

Juvenile Granges.

To the Editor:—Lincoln Juvenile Grange was organized March 17th at Cupertino with a charter list of thirty-three members. This is the first organization of the kind on the Pacific coast and is unique in its character. Boys and girls from eight to fourteen years of age are eligible to membership and are under the care and instruction of a matron (appointed by the mother Grange), whose duty it is to see that their sessions are properly conducted according to parliamentary rules and also to attend to their decorum. Parents and others interested in the children may become honorary members by paying a very nominal membership fee.

The impress of this organization and its work on the minds of juveniles have a great influence for good, as it comes at a time of life when the mind is plastic and when impressions are easily made or removed. The instruction gives them self-confidence, stimulates ambition, cultivates leadership, develops self-government and inculcates morality. What work could be more ennobling than the placing of this educating and refining influence around our children during the formative period included in the seven years in which they are eligible to membership? Who can estimate the advantages of such training of the youth of our State? Aside from the value of such an organization by children, it fills a much-needed reform, as it brings parents and teachers into closer relationship, permitting child study and taking the place of a mothers' club.

There is no limit to the scope of instruction which may be given in such a Grange, and very much depends upon the originality and ability of its matron. Nature study, field and garden work, instruction in agriculture and manual training are all factors within the category of possibilities, wherewith to instill into these young minds a knowledge and love of, and a loyalty to, country life. Our rural schools should take advantage of such an organization—the teachers to be matrons in charge. A half day at the end of each week could be most profitably spent thus, as the work will prove both entertaining and restful to teachers and pupils alike after the daily routine of school life.

Officers are elected semi-annually. Mrs. W. E. Stevens will serve for the first six months as Matron of Lincoln Juvenile Grange. Mrs. L. S. W. Brash, Secretary of the State Grange, will also be a Matron, having organized simultaneously one of this nature at her home near Santa Clara, and two more are in contemplation in other sections. Those who desire further information regarding this work can obtain it by communicating with the Lecturer of the State Grange, Herbert F. Tuck, Cupertino.

Granges North of the Bay.

To the Editor:—Windsor Grange, No. 338, has the following officers: Master, H. N. N. Latimer; Lecturer, A. B. Nawlin; Secretary, Miss Edna M. Brown. The Grange meets on the first and third Friday evenings of each month.

Hopland Grange was organized

March 25 by Deputy Master D. M. Winans of Petaluma, with the following officers: Master, J. C. Blodsoe; Lecturer, T. B. Crawford; Secretary, Mrs. Eleanor Purrington. The Grange meets on the first and third Saturdays of each month.

Petaluma Grange had on April 8 an all-day meeting and conferred the third and fourth degrees on a large class. This class finishes up all of the new members that Deputy Winans presented them. Over eighty members have been added to Petaluma Grange this year. All subordinate Granges in Sonoma county are in good working order. D. M. WINANS.

Petaluma.

Tulare Grange Picnic.

TO THE EDITOR:—A meeting of Tulare Grange was held at the University Culture Station, 3 miles from Tulare City. The weather was beautiful by noon and there was a large gathering of members and their friends. Through the influence of this Grange, grounds were secured for an experimental station. Brother Julius Forrer was appointed foreman and has proved to be most competent and industrious. The grounds contain several kinds of soils; part is heavy alkali, and in this we find several kinds of grain and alfalfa growing. The Turkestan alfalfa has the appearance of becoming the leading variety. Its yield is greater and the plant is not as woody as some other kinds when left to grow too old before cutting. There appear to be several kinds of Turkestan alfalfa offered by different seedsmen; some of these are worthless—therefore, the farmer must select the seed carefully.

When the noon hour arrived the members and their friends unloaded their baskets and boxes on large canvases on the beautiful lawn surrounding the house, beneath the overhanging orange and other trees. There was a large, pleasant and intelligent gathering. When the feast was over, Worthy Master Emmett Barber called the meeting to order and addressed the audience upon the importance of having the experimental station here—that the Grange and it went hand in hand to educate the farmer. It was a practical school, in which was taught the importance of agriculture instructions, how and when to plant, what kinds of seeds were adapted to certain kinds of soils, etc. Then he introduced Brother Shoemaker, who, in part, said: "The world moves. The progress of science in all things is marvelous—second to none is the onward march in agriculture. Years ago it was realized by men who lived before their time that scientific knowledge could be made to benefit the farmer. During the last few years many agriculturists and orchardists have appreciated agricultural research work. Great changes have been wrought in the past ten years, and one of the most recent and important of these is the substantial recognition given the agricultural college and experiment station work." He then presented Brother Forrer with a Past Treasurer's jewel.

Brother Forrer, having filled this office many years so faithfully, was taken by surprise.

After these pleasant events, all who wished were led by Brother Forrer over the grounds, he explaining the various plants. The vineyard which produced the finest grapes in the State has not been irrigated during the past fourteen years. Of the several varieties of alfalfa, the Algerian requires but little irrigating and will produce several crops each year. Horse beans grow well on alkali soil. Straw is better than manure or gypsum to make alkali land fertile. Inoculation is not a success in all plants. A No. 4 triple-action Krogh pump is used for irrigating.

The grounds are in a neat and tidy condition, which adds to Brother Forrer's honor. Many remained on the lawn and were entertained by songs and other amusements. The day was well spent and will long be remembered. E. C. S.

Tulare.

Sonoma County Granges.

At a recent meeting of Santa Rosa Grange a resolution was adopted that the Grange should formulate some plan to secure the location of the University farm in Sonoma county. The Legislature has provided an appropriation of $150,000 for the purchase of a farm, which is to be deeded to the University of California. E. D. Sweetser, Harvey Gregory and M. B. Mac have been appointed a committee to further the promotion scheme to secure this farm for Sonoma county. Progressive Grange of Healdsburg, as well as other county Granges, will be asked to help secure the farm for Sonoma county.

At the last meeting of Progressive Grange of Healdsburg a large number of members were in attendance and an enjoyable afternoon was spent. Some special music was greatly enjoyed. On April 8 the meeting began at 1:30 o'clock and a few candidates were given the last two degrees.

Will Preach to Grangers.

The Rev. Mr. Farnsworth, pastor of the Congregational church at Sebastopol, is also Chaplain of Sebastopol Grange, Patrons of Husbandry. On the second Sunday in April, Mr. Farnsworth preached at the church in Sebastopol a special sermon to Grangers. Members of Sebastopol Grange attended in a body, and an invitation was extended to members of Santa Rosa Grange to attend the services and hear the sermon.

California Rhubarb at the East.

M. Lane & Son have introduced California rhubarb into the New York market, and received their first shipment last Saturday, says the Fruit Trade Journal of April 1. This article has been in Boston and Chicago for some seasons, but heretofore has not been successfully brought into New York, although it has been tried. M. Lane & Son, however, expect to make a success of it.

The stock comes in boxes of forty pounds net; is nicely trimmed, and is considered ahead of the local crop. The firm's plan is to introduce it to the hotels and the bakers; and already has had some success with the Waldorf, the Astor and the Breslin. It was a hard job to get it introduced into the Boston market, but now that city takes about thirty cars in a season. Of course, the stock is in competition with the local crop, which will soon be coming on, but the firm expects its superior merits to sell it.

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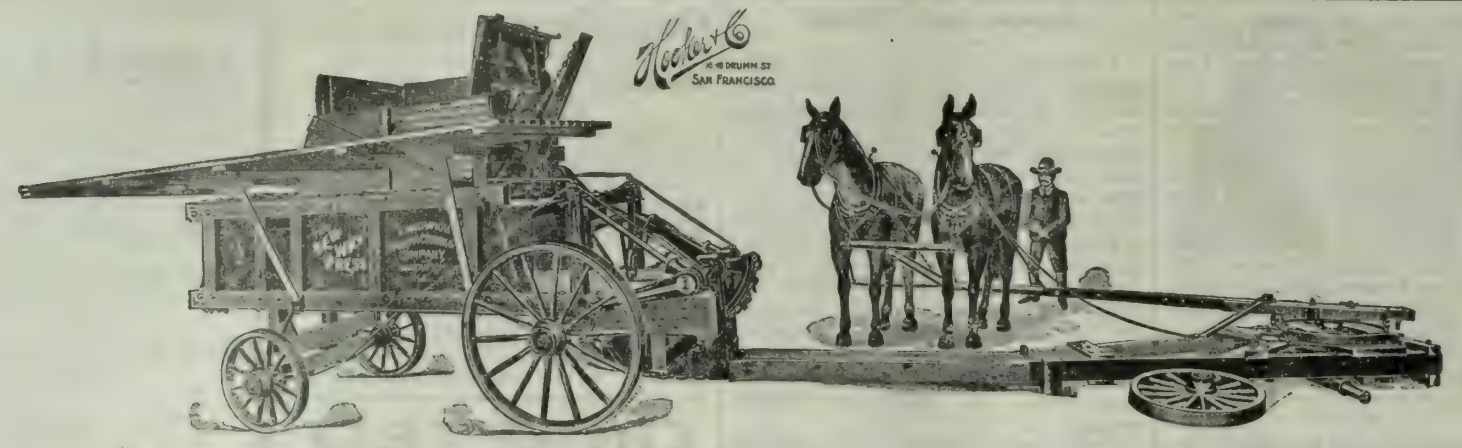
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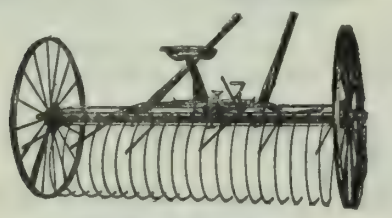
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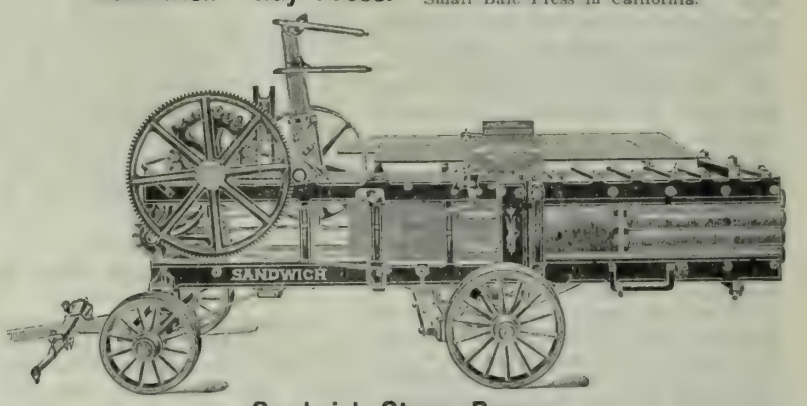
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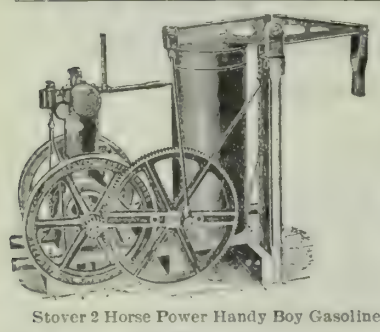


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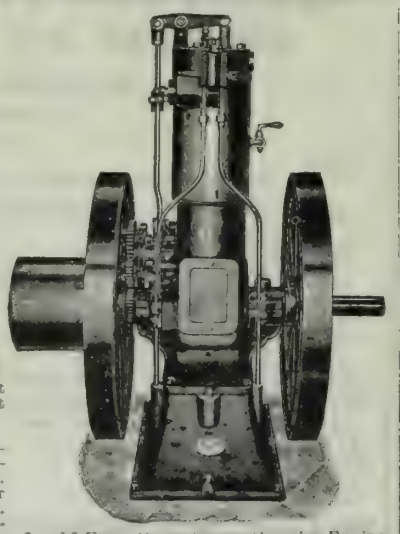
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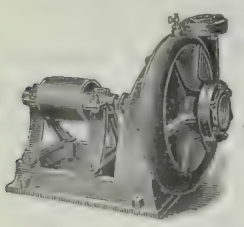


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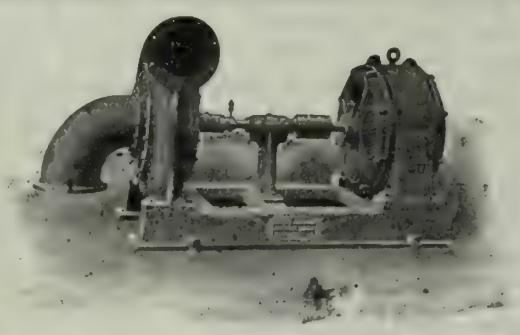
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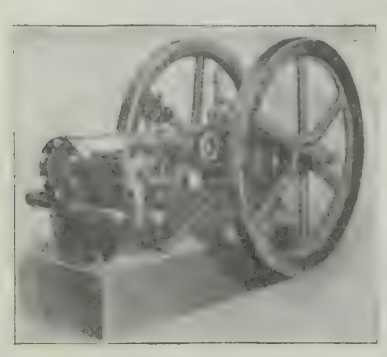
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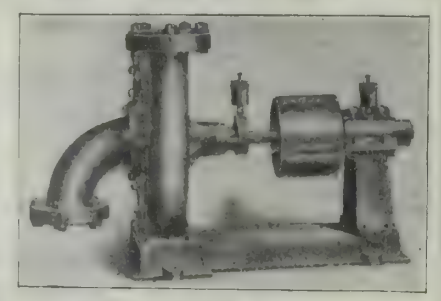
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 16. SAN FRANCISCO, SATURDAY, APRIL 22, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Hints on Avenue Planting.

A friend in southern California sends us three photographs which we have secured for the engravings on this page. They remind us of several things. First, they show that Riverside is growing old, for the pictures were taken on an avenue in that delightful rural town. And yet age as measured by tree growth in California need not be great. Stately as these trees appear, they are only about twenty-five years of age. The scenes emphasize the fact that in California a man well along in years can plant trees and still live long enough to see them grow to greatness.

But a more important suggestion perhaps is conveyed by the contrast embodied in these pictures. The impression produced by the avenue of palms is certainly one of formality and stateliness. Though a single one of these palms in an isolated position might carry suggestions of grace, the quality is depressed in an avenue of them and gives way to the impression previously mentioned because of the conception of uniformity and extension. Is it not much the same with a row of columns of classic proportions—one may be full of grace, but a multiplication of columns properly placed suggests grandeur. In the row of grevillias, on the other hand, we have a line of trees which is full of grace because of the more varied outlines of the trees and the softer foliage. In both these lines of single trees multiplied, however, we get a distinct impression, and that impression is not due to any one of the trees, but to their continuity. Each reader may choose for himself which he prefers—the stateliness of the palms or the grace of the grevillias—and be sure of having something actual and effective. But now look at the third picture, where the palm and another tree of very different growth habit are alternated! Surely any one can see that this row of trees produces no distinct impression whatever, except perhaps the suggestion of incongruity and conflict. Stateliness and grace are both utterly gone.

We trust these pictures will help many readers to appreciate the truth to taste and effectiveness of the injunction approved by all who have given the subject attention, so far as we have read or heard, and that is against alternating or greater diversity of trees in avenue planting.



Fan Palms at Riverside.



Grevillia Robusta.



An Unfortunate Mixture of Trees on a Riverside Avenue.

One can indulge in mixing trees in other plantings if it is artistically done, but for avenue effects have a single kind of tree for an indefinite distance if you wish the visitor to exclaim about them and to remember what fine avenues you have.

This seems to us one of the plainest propositions in landscape architecture, and yet it is not as widely recognized as it should be. Only during the last winter a public planting which extended for miles, and is counted upon for future notability, was made with alternated kinds of trees. It may not be as great a mistake as the one shown in our picture, because the greater the diversity in the trees the more grievous the incongruity. Nothing could be more incongruous than a columnar palm and a branching tree, and therefore the long avenue planting to which we just alluded may not be so offensive to the sight as that in the picture; but still it will at least lose much of the effect which uniform planting produces if the tree is of good form for its situation on a highway and is well grown.

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SAN FRANCISCO, APRIL 22, 1905.

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The Week.

California has the light end of the weather burden this week, as usual, for, though the temperature has been rather cool, and though rains have fallen with more than the usual April weight and frequency, these things are easy as compared with the heavy freezing which is reported from nearly the whole country east of the Rockies. Frost and snow have not only covered the Central West, but have entered far and wide into the sunny South. The result is considerable losses, not only of field vegetables, but of fruits, and it now looks as though our surplus would find open markets in all Eastern cities to an extent not recently experienced. The evil of winter killing of fruit buds has been followed by spring killing of young fruit trees in the warmer districts, and it really looks now that the northern tier of States, where the growth is less advanced, would have more fruit than the middle and southern tiers, where most fruit is grown for Northern and Eastern shipments. Under such conditions California must fill the field, and it looks as though we should have no good fruit to spare. Under the circumstances the prophets of evil may be expected to keep quiet for awhile about ruinous overplanting in this State.

And, then, aside from fruit, which is, perhaps, a little uncertain still, the totals of field crops will be splendid. The spring rains make these crops, and April is doing its best to make them large. Grain and pasturage, abundant moisture for field plantings of tender things still to be made, and other things entering into the outlook for the season's aggregate, are all on the favorable side of the page.

Wheat has been dull all the week and closes rather weak and a little lower for milling. Shipping wheat is unchanged, but prices are nominal only in absence of transactions. The Eastern markets have not been performing well. There has been a bunch of about a dozen ships chartered for the new crop; 22s for wheat and 22s 3d to 22s 9d for barley. Barley, too, is a little weak in the prospect of the coming crop. Some rye has come in from Utah. Beans have not changed much—all being held steadily except Limas, which are rather weak. Some cars of mixed beans are going to the Southwest. Bran and middlings are inactive, but strongly held with stocks light. Hay is as before with offerings chiefly of a low grade. Beef has an easy tone and hogs are lower—other meats being unchanged. Butter is firm at current rates with an active shipping demand and a disposition to storage when supplies can be found. Well cured cheese is steady. Eggs are firm at current rates and the storage interest active. Poultry is firm for all but very small stock. Old potatoes are unchanged, but a little easier perhaps, while new, in fair quantity but rather small, are going into the local trade. Onions are stiff, being chiefly from Australasia, more arriving this week and going as high as 5@5½ cents. Cherries are arriving rather more freely and sell well if ripe, though many are short in that quality. Strawberries are more abundant here and are going out of the State from the Florin region very freely. Asparagus, too, is in larger supply, but canners take it freely. Dried fruits are in light stock, except common raisins and medium prunes. Advance contracts for dried fruits are still being pushed, buyers claiming easier rates for dried apricots. Nuts are quiet and honey slow. Hops are doing little, but local holders are firm, in spite of slow markets reported from the East and abroad. Wool is strong as ever. Other pages of this issue mention many country sales.

We notice that some interior journals are figuring grandly on the fact that $100 was paid for the first ten-pound box of California cherries in Philadelphia. The price was a record breaker. In 1904 the first box of California cherries sold in Philadelphia brought $70, which was then the best price ever paid for ten pounds of cherries. Probably the limit has now been reached. It all depends upon whether it will please two rich Philadelphia fruit dealers to bid against each other to get the first box of cherries for use in a show window. Perhaps they will give it up now and may be fighting about something else next year. At any rate it is a pretty weak foundation to build anticipations of future profits to the fruit industry and to hope that thousands of pounds can be sold for this or that extortionate price. It is a good deal better to simply recognize the fact that any such a sale is only a flier and is not of any such account as straw to show which way the wind blows, for a flier goes as often against the wind as with it.

There is another thing which makes us weary of our entertaining contemporaries and that is the tendency which seems to be growing to puff large oranges and lemons—as though such monstrosities were not puffy enough of themselves. There is nothing in a big lemon. It is not even as good as a big squash, for with a squash the amount of pie timber is directly proportional to its size, while with a lemon its value is inversely proportional to its size, and if our central and northern California editors keep on talking about big lemons no wonder the southern critics laugh at their citrus aspirations. The fact is that in this part of the State we have too many big oranges and big lemons and the effort should be not to glorify them, but to have less of them, for nothing but a big head can see anything big in a big lemon.

And Los Angeles is to have a World's Fair if they can get it by mail. The City Council the other day adopted a resolution indorsing the proposition to hold a World's Fair in Los Angeles during the winter of 1909–10 to commemorate the inauguration of a mail service between the East and West in 1859. It is hard for people to-day to realize how great and important the event was, and really, judged by the things which other World's Fairs have commemorated, the occasion does seem a little small. But, then, it is young, only half a century old, and affected directly a very few people, though it was certainly a very interesting historical event, even if it was so soon followed by even greater things in mail transportation. However, if Los Angeles wants a World's Fair, and will put up money enough for it, it will certainly be a very good thing for the whole State in its attractiveness to the outside world.

The commission to select a farm for the College of Agriculture to develop lines of practical instruction upon has held its first meeting. After a general discussion it was decided that Mr. Victor Henderson, the secretary of the commission and of the Regents of the University also, should call for propositions of those who have land to sell. Those who wish to enter this competition are directed to send to the secretary at Berkeley a description of the property they have for sale, together with the price. The commission will hold its next meeting on April 27th.

QUERIES AND REPLIES.

Irrigating Alfalfa.

To the Editor:—Will you please tell me in your columns the best way to prepare ground in which to put alfalfa. I have a narrow valley of a very gentle slope, say 1 foot in 30. It is watered by a never failing stream. It is an easy thing to divert the stream from its bed and water an alfalfa field in parallel lines, down the gentle slope. But I understand the proper way is to terrace the land, in large parallelograms, on which the water rests and soaks into the ground. Each terrace top becomes an immense saucepan, and when one is soaked you run your water to the next terrace, and so on, until all the succeeding steps are watered. Of course, terracing land in successive steps is a costly proposition. Running the water in parallel lines down the alfalfa fields is the cheapest way, but cuts up the ground and does not soak it as well. — Rancher, Marin county.

The terracing is the most expensive and least desirable way from an economic point of view. Water does not extend sidewise from an up and down hill ditch because gravity holds the water to the downward course. Make use of this last fact and carry your water in a ditch running back and forth along the face of the slope and not at right angles with it. In other words run your water horizontally and not vertically. Divert the water from the stream to the highest point of the land and there begin your zigzag ditch, being careful to give it very little slope, say 3 inches or less in 100 feet. You can carry it around the corner by using some tough hay or sacks to prevent washing on the turn, or you can make a board box and thus drop the water to the next ditch across the face of the slope. You can make these ditches with an average distance of 20 feet apart, shallow and with such sloping sides that the alfalfa will grow over nearly all the ground and the ditch banks will not interfere with the use of the mower. Run the ditch full and allow it to spill over the lower side, using a cloth dam to raise the water at one place and then at another, or if the soil takes water well you may be able to irrigate sufficiently with the seepage from the ditch as the water works slowly back and forth across the slope from the point of entrance to its discharge at the bottom. You should use a surveyor's level to get your ditches with very little fall—and you should shift some land to fill depressions where the water would be apt to collect before you put in the seed.

Millipedes and Egyptian Corn.

To the Editor:—I have just finished planting fifty acres of Egyptian corn. To-day I was examining it to see if it had sprouted, and I noticed worms working on the seed. On further examination I found that nearly every hill had the same kind of worms. In some cases only the husks were left. Some of the worms were very small, as if young. I failed to find any of the worms except in the rows where the corn was planted. I thought they might have come in the seed. If they came in the seed, would it be worth while to plant the field over with a new lot of seed? Will this worm do damage to any seed that may sprout—I mean after it has sprouted and taken root? The ground is hardly moist enough to sprout all the seed. Will this worm work on all the unsprouted seed in the field? The ground in which this corn is planted is a heavy, black adobe. Would it be worth while to plant ear corn with these worms in the field? —Farmer, Santa Clara county.

The worms are millipedes, or "thousand-legged worms," of a small species. They are the roundish-bodied beasts, with the legs very numerous and well under the body. The group is vegetarian in its diet, but is seldom abundant enough to do notable harm. The other group, called centipedes, or "hundred-legged worms," have flatter bodies, fewer legs, which seem to extend from the sides rather than underneath, they are for the most part flesh eaters and more agile with their larger, fewer legs than the other group is with its more numerous walking appendages. It is not often that the millipedes are numerous enough to do such harm as you describe, and their abundance is due to the continuous moisture of the present season, aggravated by the heavy character of the soil which retains it. They are in the land and not in the seed. They can be discouraged in the garden by the use of soot or of nitrate of soda, but treatment of a large field would cost more than the crop would be worth. It is not likely that they will work long, and such of the shoots as gain headway will escape them. The only advice we can

give is to resow, if you are sure that the stand of plants is going to be too scant, using rather a large amount of seed, so that there will be enough to feed the worms and make a crop also.

Cream Gage Is Not a Butter Test.

To the Editor:—Will you please tell me what relation there is between the cream that rises in a milk test jar and the cream of a Babcock test? I have only four milch cows and did not think I would get a Babcock tester, so I bought a test jar. It is about 12 inches high, and divided on one side from 0 near the top to 100 on bottom. I fill it to 0 and let it stand twenty-four hours, when the line between milk and cream is distinctly drawn and unchangeable, that is, longer standing does not seem to change the percentage of cream. I wish to add that a little above the zero mark there is the figure 111, whose meaning I do not understand. The milk of one cow I feed to a calf except the last two quarts, which I milk in a separate bucket. The other three cows' milk I put together and once in a while I fill my jar. It usually shows cream down to 17—that is, the cream rising in the test jar is 17% of the milk. I am not satisfied with this, making not enough butter to show my cows to be very good ones. Yet I know that by the Babcock test a 5%, or better still, a 6%, cow is an extra good one. How rich is the cream that rises on top of the milk in twenty-four hours? Is the proportion of butter fat to milk always the same, or is it variable, and to what extent, in the cream that rises on milk? — Amateur Dairyman, Auburn.

You have simply a cream test—that is, an arrangement to show what percentage of the milk will appear by gravity as cream. This is a very inaccurate test of the butter value of the milk, because there is no uniformity in the amount of butter fat which cream contains. If this were not so, no one would be using a Babcock test—they would simply use the cream percentage jar which you have, and because of the inaccuracy and inadequacy of it the Babcock test, which actually separates the fat and shows its relation to the whole mass of milk, has been universally adopted. The figures on the glass which you do not understand have no relation to the percentage; they simply indicate the capacity of the jar or the commercial size of it. The figures are probably Roman numerals and indicate III, and not 111.

What we have already said partially answers your specific questions. Seventeen per cent of cream is good as a percentage, but no one can tell you what its butter value is without Babcocking the sample. You can roughly, but still effectively, determine your yield by weighing a certain weight of milk, churning the cream from it and weighing the butter after salting. Deduct, say, 16% of itself from the weight of the butter and what remains is butter fat. Divide this remainder by the total weight of the milk you started with and you will get a decimal. It will be the percentage of butter fat approximately as told by the Babcock test and will be the butter fat percentage of your milk or of the cow from which it comes—except that the Babcock test is more accurate than your churn-and-scales method can be.

Walnuts in the Coast Range.

To the Editor:—Please advise if you think English walnut trees would be apt to do well at an elevation of 1500 feet in the southern Santa Clara valley, 25 miles from the coast, near Santa Susanna?—Reader, San Francisco.

Yes, if the soil is deep and open enough to be well drained and yet not likely to dry out too much toward the end of the summer. It is not, however, well to expect satisfaction with walnuts on ordinary uplands unless you gain some moisture through seepage from higher lands, or are able to furnish some irrigation.

Crimson Winter Rhubarb.

To the Editor:—What can you tell me about the Crimson Winter rhubarb? Do you think it could be grown profitably for market in the lower part of this and Orange counties—not on the peat lands, but on the rather heavy black loam? — Enquirer, Los Angeles.

The Crimson Winter rhubarb is proving very successful wherever it is planted, and in most places where there is not too heavy freezing is becoming practically evergreen, yielding leaves for pulling all through the winter. That is true on our own place, about 300 feet above the bay of San Francisco, and certainly would be true in southern California situations generally, providing moisture enough were given to maintain growth during the latter part of the dry season. As to its prospective profitability, that depends altogether upon the amount which the market will take. There have been considerable plantings during the last year or two in your part of the State, as elsewhere, and there probably is more than enough already in sight to supply the local demand. With how great profit and to what extent the rhubarb can be distributed during the winter to the interior regions, and to the Eastern States, will have to be determined by experience. Any good loam which is productive of other crops will grow this plant, providing the moisture and temperature requirements are right for winter growth.

Killing Tomato Worms.

To the Editor:—Can you give me any information in regard to getting rid of those large green tomato worms? Is there any kind of spray that can be used successfully?—Reader, Dos Palos.

You can poison them with Paris green spray: one pound to 150 gallons of water kept well stirred while spraying. The same worm gets on grape vines and then you cannot use Paris green of the same strength because of injury to the foliage. The cheapest way, however, to fight this large worm is to gather them by hand and crush under the heel as you go along. If you do not like to handle them give each worm a clip with an old pair of scissors and go to the next. These worms are the offspring of the "humming bird moths," and the more moths you kill at dusk on the flowers the less worms you will have.

Harrowing for Dodder.

To the Editor:—I have read a great deal about killing dodder in alfalfa and have talked with many about it. In my experience, the best way to treat a doddered field is to harrow both ways with a very sharp toothed harrow after cutting the alfalfa.—J. T. Bogue, Marysville.

The usual way, by burning or pasturing, aims to destroy the dodder before it has a chance to cast its seed upon the earth. Mr. Bogue's harrowing would apparently aim at scarifying the earth surface, so that the dodder seed, or the young plants coming from it, might perish, by uprooting and drying in the midsummer heat in loose soil, while if undisturbed the young plant may grow from the ground and attach itself to the new stems of the alfalfa. It will be interesting for other readers to try Mr. Bogue's plan this summer and tell us how it works.

Lath Shelter Probably Inadequate.

To the Editor:—I have a plot of ground 150x200 feet situated on the north slope of a hill, near Pasadena. I consider it admirably adapted for the growth of winter vegetables excepting the danger from cold when the adjacent mountains are covered with snow, so I have considered the advisability of growing them under lath houses such as the florists use. Such vegetables as cucumbers, melons, tomatoes and egg plant might be grown thus to advantage. I shall consider it a favor if you will tell me what literature you have on this subject, or will advise me where I can obtain information along these lines.—Owner, Los Angeles.

There is no very satisfactory printed information concerning the growing of winter vegetables under protection in California, although during the last few years considerable enterprises have been undertaken, especially in your part of the State. It is unlikely that you can succeed with a lath shelter. Cloth or glass seems to be necessary for sufficient protection and the effect of the lath would also be to reduce the light too much at the time of the year when the days are short and sunshine, therefore, at a minimum. It is a question, too, whether you could get sufficient high temperature without a closer protection than the lath even if you did escape actual freezing. You will have to look this matter up by visiting different establishments which are found at various points in the vicinity of Los Angeles.

Not an Authority on Mexico.

To the Editor:—As a reader of your most valuable paper, I would like to know if you could give me any information about the republic of Mexico as to its character of land and what best it is suited for. Could fruit and grapes be grown successfully? Could a market be found for it in the republic? Can walnuts be raised to success? Please name place if any are grown there now. What is the best State to go to? Is Oaxaca all right? Is the land rich? How much land can a person acquire and what are the laws governing the same? Where can I secure reliable information, maps, and so forth. Please give me all information you can. — Old Subscriber, Healdsburg.

We would do all we can to help an old subscriber, but Mexico is out of line. California keeps us pretty busy and California suits and satisfies us, and we have no desire to expatriate ourselves or our pencil. Those who wish to know about Mexico must go to the Mexicans. No doubt a request addressed to the Mexican Consulate, San Francisco, would receive reply indicating where inquiries should be sent to receive attention.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 17, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather during the week was warm and clear until Saturday, when it became cooler and cloudy, with quite heavy rain in all sections. The rain was generally beneficial and probably caused little if any damage to cherries and strawberries, which are now rapidly maturing. All varieties of deciduous fruits are well advanced and give indications of large yields with the exception of pears; this crop will be lighter than last season's. Grain continues in good condition in most places, but on some of the bottom lands it is foul with weeds. Prospects are excellent for large yields of wheat, oats, barley and hay. Alfalfa harvest is progressing satisfactorily. Green feed is abundant and stock are doing well. Hops are in good condition.

Coast and Bay Sections.

Warm and seasonable weather prevailed during the week, with light northerly and westerly winds. Generous rain fell in nearly all sections Saturday, and it was quite beneficial, as the soil was becoming too dry in many places. Grain, hops and grass made rapid growth and are in excellent condition in nearly all sections, with prospects of more than average yields. Sugar beet planting has commenced. Green feed is plentiful and stock are in good condition. Haying is in progress in some places. Deciduous fruits in portions of the northern districts were considerably injured by rain and frosts during March, but the present outlook is good for excellent crops of most varieties in all sections. The first cherries of the season were shipped East from Vacaville on the 7th.

San Joaquin Valley.

Clear and cool weather prevailed the first part of the week, and partly cloudy and pleasant the latter part, with light rain Saturday and Sunday. Grain and grass are making good growth and promise large crops. In some places volunteer hay and alfalfa are being harvested. All kinds of deciduous fruits are making rapid growth and large crops are expected. Vines are making good progress and show an abundance of progress. Cut worms are reported in the Fresno district. Melons are being planted in the Lodi district, and garden truck is reported in good condition in all sections. Stock are healthy and in good condition. Irrigation water is plentiful.

Southern California.

Cloudy and cool weather prevailed most of the week, with fogs along the coast. Rain fell in all sections on Tuesday and Wednesday. At Azusa the precipitation was 1.48 inch, making the total seasonal 24.53 inches; at Ontario 0.81 inch; at Poway 0.36 inch. The rain was generally beneficial, though it retarded hay making to some extent. Grain and grass made rapid growth and are in splendid condition in most places. Early sown barley is heading and looks well. Pasturage is plentiful and stock are in good condition. Orange trees are in full bloom and the blossoms are unusually heavy. Orange picking and shipping are still in progress. Nearly all deciduous fruits are in bloom. Apricots will be light. Grapes are in excellent condition.

Eureka Summary.—Favorable weather throughout the week. Farmers are planting corn and beans. Grass, grain and all vegetation growing rapidly and promise one of the heaviest crops of all varieties ever known.

Los Angeles Summary.—Early sown grain in some places shows indications of rust; in others less than a few weeks ago. Apricots will be a light crop on account of heavy rains at blooming time. Heavy March rains packed the ground, making it hard to plow for spring crops.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 19, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.75	31 12	61 33	41 34	60	46
Red Bluff	.70	31 78	30 10	23.73	72	40
Sacramento	1.12	19.47	16 54	18 16	68	44
San Francisco	.81	20.88	19 79	21 45	62	48
Fresno	.58	10 64	7 08	8.01	76	44
Independence	.00	3 18	2.57	3 47	74	36
San Luis Obispo	.53	21.03	15 67	19 13	70	42
Los Angeles	.14	18 52	8 61	15 48	72	48
San Diego	.01	13 73	4 21	7 76	68	52
Yuma	.00	8.69	0 94	2.82	88	54

HORTICULTURE.

Brine for Morning Glory.

The belief that morning glory can be extirpated by pouring brine in holes where the chief roots seem to be, seems to be gaining ground, and it will be interesting to have many morning glory sufferers see what they can do with this treatment this summer. One of our readers reported success with it near Petaluma last fall, but we counseled waiting to see whether the glory did not show up again in full form this summer. However this may be, the proposition is interesting, and it is given at length in the California Cultivator by Mr. A. Pfeiler of Oxnard, Ventura county:

The Remedy.—I have had a great deal to do with this noxious weed and have tried various ways of killing it, but I soon found out that grubbing, smothering and cutting was useless, while dry salt was expensive and killed the ground. We now have two very good ways of killing this weed, and one who has it in spots on his land need not have fears any more of its taking all of his place, for he can kill it in one season without a great deal of work or expense. It is simply with salt water. I have killed in the last two years over twenty patches with it, and it is cheap enough, does not hurt the ground, and, best of all, kills the morning glory.

How to Apply It.—If the weed is rather scattered and the patch consists mostly of single stalks, just take a hoe and with one corner of it cut out a small hole deep enough to hold an oyster can full of salt water just where the morning glory stalk is, also chopping the stalk out with it. Fill the hole with salt water strong enough to float an egg, or nearly so (not particular), and that stalk will not come through there again. But after a week or so, a side sprout will appear, then again, as before, go right after it with your oyster can and water. Keep this up each week till the last stalk is gone. But do not disturb the previous salt watered spots, as the water kills the ground only a few inches, and in these few inches the roots are dead, but below this they are alive. But by resalting each week or ten days the sprouts that appear for air you practically choke it out and do not poison it, as many suppose.

The surface of the ground will be dead, but after the ground is plowed it becomes mixed with other soil and is just as fertile as before. Lest I forget, do not touch the salted patch for a year with any implement or dig it up. The secret lies in having a salted earth blanket over the patch to choke it out. After the first salting the stalks will appear less each week, and after a month or two of attention the last stalks will soon disappear.

Flooding With Brine.—Now, where the patch is thick, like we say, "hair on a dog's back," I use the flooding system, which takes more water. Nail four fence boards together, 3 feet long (or any dimensions you please), in the form of a square box without bottom or top, place this down on the morning glory, and, after cutting off the top of the weed with a sharp hoe, pour on enough salt water to cover the enclosure one-half inch deep and let soak away. Make several of these frames and prepare one while others soak. Lap squares a little after resalting and do not let water leak away from under the boards. Again, as I said, do not disturb the surface for a whole season and take away the top of the weed before watering.

Even with the flooding system, resalting will be necessary a little, as occasionally a sprout will find its way through, and, if left there, will furnish air and life to a great network of roots below. Now is an excellent time to do this. Salt is now also at its cheapest.

A four-horse water tank to haul water, several barrels to hold water while team is after more, so men can keep at work applying and mixing, makes very quick work and is, I can assure you, the only practical method of killing morning glory besides one other way, and that is with hogs.

The Pig Remedy.—On patches over an acre in extent salt watering is a great deal of work, and, for experiment, I fenced off an acre of the worst morning glory I ever saw and turned in ten head of hogs and left them there two years. The result was a complete eradication. I fed these hogs on stock beets planted around the place, and a little barley and bean cleanings occasionally, and, to make the venture still more successful, I sold $180 worth of hogs, besides the increase. It is not necessary to have so many hogs as I had, for I now have two hogs on half an acre of morning glory, and they keep it from coming to the surface just as well as the ten did, only I make them root and dig more by feeding only occasionally, making them hunt the roots, of which they are very fond. I plow the pen in May after the rains, so the ground is in nice shape for the hogs to root in for the summer.

Salting takes about a heaping bucketful of salt to a barrel of water, and even with salt at $8 a ton, counts up on an acre of morning glory, not counting the work at all, so I consider salt watering for less than an acre and hogs for more, the only natural method we have for killing this dangerous stuff. I assure you both methods are certain. Try it.

The Sugar Prune.

To the Editor:—Mr. Luther Bowers of Monticello wrote an article a while ago on the Sugar prune. He spoke of the wood as being very brittle—not being able to bear up weight of fruit. We use them here as a shipping prune, and, of course, prune and thin very severely, so we do not have trouble with limbs breaking. We do, however, have the greatest difficulty in preserving the fruit spurs when picking. They break off at the least touch. I have just taken charge of a ten-acre tract of Sugars. The owner does not live here and he wishes to have them dried, believing them to be a good prune. My only experience in drying Sugars has been to dry a few hundred pounds the past two years. The expense of picking has been something terrific, every prune having to be picked off singly. Any clubbing or shaking of the tree would mean a shower of fruit and spurs. Can any of your readers give me any light upon how to get around the expense?

With us the dried prune is very handsome and sells well. When cooked it is coarse-meated and stringy. I have asked several buyers as to the future of the Sugar prune and they have all answered about the same, that it has no future. They will sell for awhile, as they are new and so few of them, but when there are sufficient of them in the market to be sold on their merits they will have to go down.

As a shipping fruit, with us its one bad quality is the spur breaking. For bearing, shipping and selling it is hard to beat. It may overcome this tenderness of wood as the trees get more age. Speaking with a tree seller this winter, he told me that he had more orders placed for Sugars than any other kind, so that it is a subject worth ventilating.

The Imperial Epineuse is a grand prune with us. It is a good bearer, early, good size and a good seller. I have found that in order to get a first-class article the prunes should be allowed to drop and lie on the ground for three or four days before dipping. Any other way that I have tried, either picking from the tree or picking up as soon as dropped, has been disappointing, resulting in a poor color and a coarse-meated prune. I have known of many splendid crops of Imperials that have been sacrificed by being too hasty about the drying. The gain in weight alone will more than compensate for any extra labor incurred. Charles Blom.

Folsom.

These observations are very interesting. What do other growers say?

Potatoes Short in New Zealand.

(From United States Consul-General Dillingham, Auckland, New Zealand.

In a number of districts throughout the colony "Phytophthora infestana" has manifested itself in quite a serious form, and the Governor, in exercise of the powers conferred upon him by "The Orchard and Garden Pests Act, 1903," and by and with the consent and advice of the Executive Council of the colony, has gazetted the disease, and prohibited the transportation of diseased potatoes from certain parts of the colony into other parts, because it is generally believed that diseased potatoes or potato plants, or parts thereof, brought from the affected districts would be likely to spread the disease. The blight had made quite a good deal of headway before it was correctly diagnosed, but it is now being gradually checked by the use of a spray of solution of bluestone or copper sulphate, and it will doubtless be eradicated within the next six or eight months. In consequence of the blight, potatoes are scarce and prices have advanced sharply. At this writing new potatoes are being shipped to this colony from Tasmania (one of the States of the Australian Commonwealth), a distance of about 2500 miles from Auckland, and are quoted at 13s 6d per hundredweight ($3.28 per 112 pounds). I believe that California potatoes would find a profitable market in New Zealand at the present time.

Auckland, New Zealand, February 7.

METEOROLOGICAL.

Is Our Rain Water Rich?

In the Weather Review of the United States Weather Bureau, Prof. Cleveland Abbe mentions some facts which may be of much importance to California. It appears that rain water is not all alike, by any means, and how ours compares with others only the chemists can find out. But there is reason to take up the investigation. Prof. Abbe writes: Meteorologists generally consider that they have done their duty by the rainfall when they measure the quantity and the time of occurrence, either daily or hourly. But the students of agriculture and forestry, those who drink rain water and those who study the physics of the atmosphere are all alike interested in the chemical composition of the rain water. The time must come when chemical analysis of the rain water will be made systematically at a large number of carefully selected rainfall stations. It is hardly desirable that any of these should be located in large cities, since the rain that falls there has so little influence on agriculture or water supply. The most important stations will be those in the open country, whether inland or near the sea coast, and especially those at mountain tops and base stations. The importance of this subject to agriculture may be estimated from a statement by H. Ingle, in charge of the chemical work of the department of agriculture of the Government of the Transvaal. According to "Nature," Mr. Ingle finds that Transvaal soils are deficient in nitrogen, but that the receipt of combined nitrogen from the atmosphere, namely, nitrates, ammonia, etc., is much larger than in England. Thus, at Rothamsted the average annual receipt of atmospheric nitrogen in the rain water amounts to 4.75 pounds annually, whereas in February and March, 1904, in Pretoria, the rainfall brought down about two pounds per acre. As the normal rainfall for these two months is 7 inches, while the annual rainfall is 30 inches, it may, therefore, be estimated that the annual quantity of nitrogen brought down by the rain at Pretoria is at least eight pounds and possibly ten pounds per acre, or twice as much as received at Rothamsted in England.

By analogy we may anticipate that the varying proportions of nitrogen brought down in different portions of the United States by the rainfall may be an important consideration in explaining the agricultural peculiarities of special regions.

AGRICULTURAL SCIENCE.

A Practical Talk on the Soil.

By H. W. Campbell, originator of the Campbell system of cultivation, in the Deseret Farmer of Utah.

With all due regards for the farmer's intelligence and integrity, as well as his ambition to get all he can from his farm at the least possible expense, yet we do not believe it out of place to say that there is no line of profession or business in which so few follow its calling—seem to be interested in new and advanced ideas—as the average tiller of the soil. In the past he has not been as much of a reader as he should be, and when he has read of some new idea or plan of cultivation he has not grasped the force or object of the idea unless he has seen it in practice, therefore he too often ignores it. He does not understand the underlying principles for the simple reason that his father's and grandfather's experience as handed down to him has been averse to what was called book farming. Thirty years ago the virgin soils of the East were not depleted as they are today. The rich lands of the Central West were cheap and the lands of the semi-arid West were still known as the Great American desert and its farming advantages unknown. It was not necessary then to give any special attention to manner or method of cultivation in order to secure profitable returns. Unfortunately, the average book published thirty or more years ago was not generally practical—largely undemonstrated theory was given, and the results from the application of the principles as then understood by the average farmer was not at all satisfactory. To-day conditions have changed. The whole country, agriculturally, stands facing different conditions. The greatest care is now required in the Eastern States in the use of fertilizer and the handling of the soil to make ends meet. In the Central West land has advanced until it is so high that the best possible results must be obtained to make the land pay. In the semi-arid belt we have the long dry periods of summer to contend with, and thousands of farmers have annually suffered because of a lack of practical knowledge of proper methods of cultivation in order that they may bring about proper physical condition of the soil.

There are three prime elements necessary in securing sure and profitable results from all the crops we raise—first, a thoroughly fined and firmed seed and root bed; second, plenty of available moisture; third, free and unobstructed circulation of air through the soil.

In discussing these three subdivisions of our sub ject to expose each and every part in such a manner as to make clear its relation to the life and growth of the plant, let me impress upon your mind one fact, and that is that nothing comes by chance. As we study the fundamental principles of all plant life and development we find every condition of the plant, whether favorable or unfavorable, is the direct result of some cause that is regulated by nature's laws. In many instances the good or bad condition of a field of grain, to a more or less degree, may be traced back to the treatment the field may have received one, two or three years previously. The thoroughly fined and firm root and seed bed is not only an important condition but a vital one, and under the average or ordinary climatic conditions the best results or largest yields cannot be looked for without careful attention to this point. This fine, compact condition is of great value in many ways.

First—Let us consider the moisture question.

Water is held in the soil in the form of a film or thin covering over each particle of soil like a marble that is immersed in water; when taken out it is covered with a thin coating or film of water. The finer the soil is made the greater is the number of particles, consequently the surface to be covered with water is increased. In a sand loam soil the more particles there are compacted within a cubic inch the greater is the water holding capacity, because of the increased amount of surface. This rule, however, is not true in a fine clay soil, as it is possible under certain conditions to press these very minute particles so closely together as to not only somewhat reduce the water holding capacity, but in a sense to shut the air from the soil, as the ample and constantly available supply of water for the growing plant is a very important condition. These points are vital and should be well understood. If the soil is left too coarse, loose and open, the water contents of the soil must be proportionately less. Not only this, but the air spaces are so increased that there is a tendency to dry out by too large volume of air.

Second—Soil too coarse and open carries too much air and too little water. Here we notice the development of hair roots or feeders is very slight. In careful investigation of soils and roots we have frequently found by washing out roots from soil that they would run 3 or 4 inches in soil just loose enough to allow of the root growth without a single little feeder. This fact indicates that there is so much soil that is dormant from which no plant food is taken. Soil in this condition can never grow a strong, healthy plant. A comparison of two fields of winter wheat during the latter part of March and April, the drouth of 1904, one of which the soil was made very fine and firm by a careful preparation with all the above points in view, as compared with another field without a thought of these conditions, showed the following marked contrast: In the well-fitted soil the wheat stood 20 inches to 24 inches high, very healthy, of a dark green color, with from twelve to twenty stalks from each kernel, while in the ordinary fitted field, at the same time, the wheat was from 5 to 6 inches high, of a light color, having only from one to four stalks from each kernel. Another point in connection with this contrast, which adds more interest, is the fact that the short, thin grain was sown nearly two weeks earlier.

Third—Soil, in this open, porous condition carries less water per square inch of soil, a condition very serious in case of long dry periods. It retards root growth and development, which necessarily results in a weaker plant and one that will succumb much quicker in a dry period. The production of nitrates is much less and moisture moves along slower, especially upward by capillary attraction. Any one of the above might reduce the yield from 15% to 75%. What, then, might be the case with all the above conditions unfavorable? In the free circulation of air, especially in our sandy loam soils of the West, there seems to be but one controlling condition that is to be guarded closely, outside of the fine, firm soil, and that is the forming of a crust on top of the soil, which is sure to come during long dry periods if the surface is not properly treated.

There are few farmers who have not noticed the ill effect of too much water. All over the Western prairies during 1902 we saw fine, healthy plants of corn, wheat and other small plants wither and die, when water would stand for a short time on the surface soil. This is all from shutting the air out of the soil by the minute spaces between the soil particles being filled with water. The fact is that the roots and their feeders are the lungs of the plant, and without plenty of air the plant must die. The forming of a close crust on the surface by a prolonged drouth brings about the same condition and result as the water above referred to. This crust is the direct result of rapid evaporation, bringing the dissolved alkali salts and magnesia to the surface, where it is deposited in dry form between the soil grains, and the moisture departs in the vapor.

THE POULTRY YARD.

Waterglass for Egg Keeping.

Long ago we gave accounts of waterglass as the best application to keep eggs for a considerable length of time. The Fanciers' Monthly of San Jose speaks of experience with it as follows: This month and next, eggs for table use will be at about their lowest price all over the Pacific coast for the year. It is therefore in order to look up methods of preserving some of them, either for home use or for sale as packed eggs when they command a good price in the fall.

We have made many experiments along this line, and if there is anything that will keep eggs in first-class condition for six months or so better than silicate of soda, commonly known as waterglass, we have failed to hear of it. Last spring, at about this time, we put down some eggs in various ways and the waterglass was the only compound that stood the test of time. So we have come to the conclusion that waterglass is the thing to use as an egg preservative.

In San Francisco waterglass can be purchased at any large drug store, at from 30 to 40 cents per pound; druggists in small towns are apt to charge more for it, but it is not expensive at from 50 to 75 cents per pound if you keep it and use it year after year, as may be done if it is boiled before putting eggs into it a second time.

It looks like a heavy, white jelly, and flows like cold molasses; this is the best kind; the powdered sort is not so good. Though being really a liquid, it is sold by the pound, and it is best to measure it in making the solution. Take one part of waterglass and to it add ten parts of water, which has been boiled and then cooled. Stir the waterglass until it is completely dissolved, and then put in the eggs. They may be put in at intervals as you collect them, or all at once. Use earthen crocks or jars, galvanized iron vessels of any sort, but not in common tin. We prefer the stone jars. They may be large or small, but in every case be sure that the solution covers the eggs to a depth of 2 inches on top, and keep them covered by adding a little water from time to time, as there is bound to be more or less evaporation. Put the jars, when filled, away in a cool, dark place, and if you have put down only fresh eggs (stale ones cannot be preserved), you may take them out next Thanksgiving time, practically as good for every purpose as when you put them in. In fact, it will take a very delicate taste to distinguish them from new laid eggs.

SHEEP AND WOOL.

Lamb Feeding in Colorado.

Conditions continue to favor more attention to sheep farming in this State. Supplies of mutton sheep from the range flocks which are decreasing in numbers are liable to be scant and there ought to be a fed-product in this State which would pay. To any who may be figuring along this line, a paper prepared for the last meeting of the National Association by Prof. W. L. Carlyle of Colorado, whom many of our readers know, will be interesting.

The Financial Aspect.—The general impression seems to be that while lamb feeding is risky, yet when entered upon intelligently and carried on through a series of years, no line of the live-stock industry has been more remunerative in Colorado.

One of the problems which confront the intending feeder is the securing of the necessary capital. Feeders usually embark in the business very extensively, frequently one man feeding as high as 6000 head of lambs. This requires considerable capital. During the past few years, however, the business has been placed upon such a basis that the intending feeder can borrow all the money he requires for the purchase of feeding stock. His creditor is secured by a chattel mortgage upon the entire flock. Private individuals, banks and live stock commission firms are ready and anxious to loan money upon such security. Probably the live stock commission firms get the most of this business, as they ask only a very low rate of interest, making their chief profit from the handling of the sheep upon the market when they are sold.

Where the Lambs Are Secured.—Very few lambs upon feed in northern Colorado are native grown stock. The larger portion of them are what are known as northern lambs, which are ordinarily better bred and are better feeders than those which are secured from the States of Arizona or New Mexico and are given the name of "southerns." These latter are largely graded up Mexicans and are usually small of frame and of poor feeding quality. The northern lambs have better breeding and are much better feeders. Merino blood is perhaps more frequently seen in the feeding lots than any other, though lambs of "Down" or "Black Face" breeding are usually sought for by the best feeders. No preference is shown, as a rule, for wethers, ewe lambs being taken as readily as the wethers, though the latter are much more numerous in the feed lots, for the reason that most of the feeders keep their ewe lambs for breeding purposes.

The type of lamb most desired is one that has a large frame and is rangy in type. Heavy weight is desired at the time of purchase, for the reason that the purchase price is usually very low compared with the selling price at the end of the period. The principal profit made on the feeding lies not in profit from the feeding itself, but in the increase of selling price over the purchase price for the number of lambs purchased. The flesh which a feeder puts on a lamb usually costs as much as he gets for it, and he makes his profit upon the enhanced value of the live weight of flesh bought for a low price at the beginning of the feeding season. The lambs are put in the feed lots usually in November or December. Old ewes are frequently fed and several of the prominent feeders claim more profit from them in the past three years, since beet pulp from the sugar factories has been obtainable, than from lambs.

The lambs are usually purchased and shipped to Fort Collins, the freight being paid through to the river points and the privilege of feeding in transit is granted. The railroad, however, exacts an additional price for the increase in weight while being fed, much more favorable shipping rate is thus secured. A double deck car will usually hold from 240 to 300 fat lambs. The feeding lots are uncovered, no shelter being given except from the board corrals, which are about six feet in height. Usually, however, a favorable location is secured where the animals will be well sheltered from the wind and have a good exposure to the sun. Care is also taken to secure, where possible, a location where there is good grazing.

The Kind of Feed Used.—Alfalfa hay is the basis of the feeding industry in northern Colorado. Without alfalfa, our agriculture would be of very little moment. Alfalfa forms the basis for all our sugar beet growing. It not only enriches the soil in which its grows, but prepares it for the growing of sugar beets in a way that no other crop or system of cultivation can, and while doing this preparatory work it yields an enormous tonnage of the most valuable feed for fattening sheep and cattle. Usually the lambs are given free access to hay and are allowed to eat all of it that they will consume. The grain used for feeding is usually corn, barley and wheat, with sometimes a little oil meal or cotton seed meal. The grain is never ground, the lambs having good teeth and excellent digestive and assimilative powers. Corn is the principal grain fed. Barley is considered as an excellent grain feed, especially in the early feeding period. Wheat is used to some extent when the price is low, though it can usually be profitably exchanged for corn. It is not, however, as desirable a feed as either barley or corn, being highly nitrogenous and similar in this respect to the alfalfa hay, and causes a high death rate from overloading of the urinary organs. Corn is apparently much more palatable to sheep than either wheat or barley, and seems to combine with the alfalfa to form a better balanced ration than any other grain feed, and can usually be secured at a much lower price per 100 pounds than either barley or wheat. Corn usually sells by the carload at from 75 cents to $1 per 100, depending upon the season and supply. At the present time it is worth 84 cents per 100 in car on tracks here. Alfalfa can usually be secured in stacks well settled at from $4 to $5 per ton. During the past two years many thousands of old ewes have been fed at the various sugar factories upon beet pulp, alfalfa hay and corn. The old ewes thrive much better upon the beet pulp than the lambs or younger sheep. It produces a very desirable sappiness of flesh, and when these sheep have been on this feed with alfalfa hay for two or three months, then finished with corn, they bring the highest price on the market. Feeders usually stick to one kind of grain throughout the feeding period. The range lambs do not know the taste of any kind of grain until put in the feed lots, and they are frequently slow to take hold of any kind of grain feed. When a change is made, they usually eat a very small quantity until they acquire a taste for the new feed, and this causes quite a heavy loss to the feeder during this period of stagnation. Only a small amount of grain is used at first, this being sprinkled in troughs in the small yards separate from the regular feed yards where the hay is given them. The lambs are turned into the small yards in the morning and evening of each day, the grain having been placed previously in the troughs. At the end of two weeks, about one-half pound of grain feed is given the lambs per day. From then on, the amount is increased as rapidly as the lambs will take it without impairing their powers of digestion. Some feeders take three weeks or longer to bring the lambs to one-half pound per day, while others bring them on more quickly. The term "full feed" by some feeders is taken to mean all that the lambs will consume. With the best feeders, however, it means a definite amount, probably not exceeding one and one-fourth pounds per day per head. This is probably the best practice, as there is no doubt a limit to the digestive powers of the lambs, and if feeding is carried beyond this the extra feed is certainly worse than wasted, as it overloads the system and impairs the digestive powers of the lamb for future feeding. Good lambs will gain from ten to twelve pounds per month on this feed. They are fed from three to four months, thus bringing a fifty-five-pound lamb to ninety pounds, which is considered the best size of lamb for market demands.

Water must be supplied to the lambs in considerable quantities, unless where beet pulp is being fed. A liberal supply of water is usually found in all feed yards where lambs may get to it at all times.

Loss From Disease.—The loss from death averages about 1%. Early in the history of the feeding business it was much larger than now. When the lambs are brought into the feeding yards at the present time they are always dipped to rid them of any parasites, such as scab and lice, which is a great protection and insures against not only loss of weight from the parasites and by these insects, but also insures against loss from death later on. Pneumonia is frequently the cause of death, also bloat from feeding the third cutting of alfalfa occurs occasionally. Grub in the head is also a common cause, especially with the southern lambs, but is rare among the Wyoming and Montana stock.

Finally.—It may be said in conclusion that there is no industry in northern Colorado that has returned

a greater profit in the aggregate to the farmers than that of lamb feeding. Many of them have fed blindly, never knowing what their feeding operations are costing them, and, even when their lambs are sold, never know whether they are returning a profit or a loss. Most men of this character are not making much money out of the lamb feeding business. The men who keep accurate accounts of their feeding expenses and have a balance sheet at the end of their feeding operations are the ones who are making a profit in the business and who are enthusiastic about it.

In summing up the matter of lamb feeding and the cause of its success in northern Colorado, it may be said that the primary reason for success lies in the fact that we have perfect weather during most of the feeding season. We have an abundance of cheap alfalfa hay and a location lying midway between the ranges and the large markets of the East.

Agricultural Review.

Butte.

Killed Eleven Coyotes.—Gridley special to Sacramento Bee: As Elmer Hefner was plowing on the Hefner lands in the Central House district, he saw a coyote which acted queerly and refused to run from him. He stopped his team and went to the house and secured a rifle. When he approached the place again the coyote was still hanging around and the boy shot the animal. In going to the body of the animal he crossed a small depression and in a sort of lair he found ten young coyotes, with their eyes still glued shut. Hefner promptly dispatched them, and as the ranchmen and sheep owners of the neighborhood have offered a standing reward for scalps, the young man will realize handsomely for his day's work.

Fresno.

Raisin Directors. — The directors who will guide the affairs of the new corporation during the coming year are: At large — M. Theo. Kearney, president; M. F. Tarpey, vice-president; Thomas Lynch, A. P. Jordan, Arthur S. Goodfellow, W. B. Nichols and Hector Burness. District directors — Chris Jorgensen, Madison; Andrew Sorenson, Scandinavian; W. W. Wharton, Fresno; George W. Elliott, Oleander; S. L. Heisinger, Selma; W. A. Poole, Fowler; F. G. Barnes, Lone Star; S. R. La Rue, Malaga; T. J. Alexander, Temperance; A. E. D. Scott, Clovis; Lucius Powers, Sanger; Peter Matheson, Fair View; J. A. Smilie, Rosedale; W. S. Goodfellow, Reedley; Nicholas G. Nelson, Kingsburg; W. M. Hughes, Madera; W. P. Boone, Dinuba; Arthur A. Hill, Orosi; C. M. Hatch, Tulare; H. Hitchcock, C. M. Blowers and F. M. Parrish, Kings county; Wilbur F. Thropp, Kern county.

The Poultry Show. — Republican: The Fresno Poultry Association held its regular monthly meeting last night in the City Hall and a number of details of the next show were arranged. The date of the show has been fixed for December 16 next and it will be the first held here in three years. The Association elected an assistant superintendent, Joseph Matthews, and committees were appointed to solicit prizes. It was decided that the judging should be by comparison. B. M. Woodhull of Stockton and R. J. Venn of Fresno have been selected to act as judges.

Kings.

Prune Crop Light.—Hanford Journal: Silas M. Hughes, a well-known fruit grower of the vicinity of Hanford, does not think that there will be one-fourth of a good crop of prunes harvested in Kings county this year. He lays it to climatic conditions, and not to any pest. He says that the warm weather late in the winter started the sap to flowing profusely; then came much cooler weather and the sap quit flowing, and this resulted disastrously to the fruit. He says that in all except one part of his prune orchard he has almost no fruit. In that part old wood was cut away and new wood formed; this new wood is now about three years old, and has a heavy crop. Mr. Hughes says that in all the older trees, not cut back, there are almost no prunes. He has gone all over the prune section of Kings county, in the past few days, he says, and he finds conditions the same everywhere.

Alfalfa Honey.—Hanford Sentinel: J. P. Quinby, who has a bee ranch at Angiola, came in from Pasadena April 5. He stated that he sold in Pasadena since he took off his honey crop of last season fully three tons of alfalfa honey made in Kings county, and he got all the way from 8 to 16 cents a pound for it. He thinks the average will be about 12½ cents. He also states that the people down there are eager to get alfalfa honey. They have usually to be content with honey made from the pepper tree blossoms, and the alfalfa beats the pepper tree flavor.

Shipped Wool.—Nearly $7000 worth of wool was shipped from the Hanford freight depot April 6. Wool is higher this season than it has been for years and is bringing from 14 to 17 cents a pound. At the opening of the shearing season this spring there was not a bale of wool in the warehouses in San Francisco, and there have been a great many cars sent from this county lately — more than twenty going from Lemoore.

Los Angeles.

To Inoculate Lima Beans.—Times: One of the largest ranchers of the coast plains west of Los Angeles will try the nitrogen bacteria upon the coming season's planting of Lima beans. It is claimed that the experiments made in California have increased the yield nearly 100%, and the beans have not mildewed when treated to this process. In Michigan the increase in one case was 40% of the yield from the same ground untreated; and so from every State the reports come, bearing out the benefits derived from the use of the nodule-increasirg bacteria upon beans. Aside from the increased fertility coming from the use of the great discovery, if the current crop may be made larger, it is worth trying upon a large scale. The vines are more vigorous, they bear better, resist drouth more successfully and protect the beans better from the heat of the sun. Last season the bean fields of Los Angeles county did not have enough moisture; this season the fields have enough stored away to produce fine crops.

Orange.

Tons of Beet Seed.—Santa Ana Blade: Former Senator T. J. Jones, now acting in the capacity of purchasing agent for the American Beet Sugar Company, says 3000 acres of sugar beets will be planted this season in the district embracing Talbert, Bolsa, Wintersburg and Ocean View, and that 500 acres are already planted. Senator Jones says it will take fifteen pounds of seed to the acre to plant the acreage devoted to sugar beets this season, and that this will mean that at 12 cents a pound, the price paid for beet seed, it will cost $5400 to furnish the seed. The seed has all been ordered and is ready for distribution and comes from France and Germany, where only the choicest article is saved for the purpose. Senator Jones added that although some of the beet land is more or less flooded, it is confidently expected that the crop will be planted in time for the best results.

Placer.

Annual Meeting of Fruit Growers' Association.—Newcastle special to Sacramento Bee: The first annual meeting of the members of the Placer County Fruit Growers' Association was called to order April 10 by President Ryder at Loomis. A review of business transactions since the organization of the Association was made and reports were received and read. The old officers were re-elected. New plans of action were determined upon and such other business transacted as seemed opportune. Plans for future action were discussed. The Association is now the largest of its kind in central California and its power and influence in behalf of its members are becoming apparent. Crop statistics and reports are to be gathered and safeguards provided for the disposal of fruits.

Japanese Very Thick.—Auburn special to Sacramento Bee: It is estimated that between Auburn and Roseville 1500 Japs are engaged in the fruit industry and various kindred occupations. In the vicinity of Penryn there are six Japanese stores and three saloons. A well-known grower near Newcastle states that out of forty-four ranches in the heaviest fruit growing section of the county only one had white help, with some Chinese, the forty others using Japanese and four Chinese. In most cases the Japanese are lessees of the ranches. In the Rock Spring district he stated that out of twenty-five ranches eighteen are conducted by Japanese, four by Chinese and three by white men. Twelve residences which were last year occupied by white people are either vacant now or occupied by Japanese.

Fruit Growers in Council.—Auburn Republican: The following officers were elected for the Placer County Fruit Growers' Protective Association for the ensuing year: President, Andrew Ryder, of Loomis; vice-president, Egbert J. Martin, Lincoln; secretary and treasurer, J. F. Madden, Newcastle; board of managers, President Ryder, Vice-President Egbert J. Martin, James Law, of Loomis, A. Fereva, Newcastle, and F. G. Burtscher, Auburn. These were the same officers as for the past term.

San Joaquin.

Big Tule Land Deal.—Stockton Independent: The extensive land holdings of John Herd, including about 24,000 acres of tule and reclaimed lands, leases on about 17,000 acres of reclaimed lands, three monster dredgers, the steamboat Victory, pumping plants, and all other machinery and farming appliances on the large tracts farmed by Mr. Herd, have been transferred to the California Reclamation Lands Company, a corporation of which Mr. Herd is the sole owner, save the four shares required to complete the incorporation under the State law. The operations of the new corporation under the general direction of Mr. Herd will be superintended by D. B. Harris of Fresno, who will make his headquarters in Stockton and will direct operations from this point. The Webb tract of 12,000 acres is about the last piece of unreclaimed land in the San Joaquin delta. The Bacon tract and Mandeville island are the only other unreclaimed tracts of large extent and they are held by owners who do not want to sell. Mr. Herd will reclaim the Webb tract in two islands, one of which he will call King Edward's island and the other Roosevelt island, each being a tract of 6000 acres. On King Edward's island he proposes to erect a castle fashioned after Windsor castle, the home place of the King of England, and on the other tract he will build a house made to represent the White House at Washington, the home of the Chief Executive of the United States.

San Bernardino.

On the Trees.—Sun: Ray Humeston sold this week the crop of oranges—Navels and sweets—on the trees of his 10-acre ranch to Cleghorn of Highland for $2000 cash.

Santa Barbara.

To Plant Many Trees. — Oxnard Courier: Great interest is manifested in Santa Barbara in the plan of the Bureau of Forestry to plant the basin of the Santa Ynez river with trees for the preservation of water supply and the preserving of the trails along the sides of the mountains. It is proposed to establish near Santa Barbara a planting station, and in view of the fact that Santa Barbara is putting a tunnel through the Santa Ynez mountains to conduct water from a damsite in the Santa Ynez river, the planting of these trees will be of inestimable benefit to Santa Barbara. According to the Bureau of Forestry, it will be possible to have 1,000,000 trees ready to plant within the next year.

Growing Turnips for Seed.—Lompoc Record: An industry that has proven to be very profitable in this valley, as far as it has been tried, is that of raising various kinds of seeds for seed houses. This has been the case with beans and turnip seed, especially. These seeds are grown under contract and at a fixed price from the seed firms. Seed beans have given returns of from $75 to $100 per acre, while turnip seeds have brought about the same. The principal variety of turnip seed grown is the big purple tops. A sample of this variety may be seen in the display in the post-office window. They are a very fine variety and grow to a good size. There are some 30 or 40 acres planted to these turnips near Lompoc this year. Mr. Beuterbaugh has 15 acres, A. Henning has 10 acres and some others have smaller patches. These are grown under contract with the Lompoc Produce and Real Estate Company. It is very likely that a few more years will see seed growing one of the principal industries of this valley.

Santa Clara.

Prune Crop Short.—San Jose Mercury, April 15: Prune prices will regulate themselves, as the new crop will be light. Many blossoms blighted during the continued wet, cool weather. Not over half a crop is in sight. Cherries were effected by the weather conditions and will be short. Peaches average, and apricots a good crop. The above conditions prevail in western Santa Clara county.

Shasta.

Fruit in Good Condition.—Redding special to Sacramento Bee: The fruit outlook in Shasta county is considered very fair. Only pears have been damaged to any appreciable extent. Prunes were damaged a little, but only enough to make thinning out later unnecessary. Plums and apricots will be the best crop for years. Peaches promise to be better than average, and there will be an immense crop of almonds.

Solano.

Profitable Alfalfa.—Republican: Peter Timm last year harvested five crops of alfalfa from his 20-acre tract, the entire yield being 179 tons, a greater portion of which was sold at $7.50 per ton, making a total gross income of $1342. The cost of irrigating the same was $240 and the expense of harvesting was $275, making a total expense of $515, leaving a net profit of $827, or over $40 per acre. Leland Hyde has 20 acres of alfalfa. Mr. Hyde devotes his crop to pasturage for dairy cows. He runs thirty milch cows, and disposes of his cream to the Dixon creamery, the net profit from this source for the month of March being $180.

Tossed by a Bull.—Suisun Courier: Senator B. F. Rush of Suisun had a narrow escape from death on Friday last at his home ranch near Suisun. He was supervising the branding of some young thoroughbred bulls, when one of the animals attacked him at a moment when his back was turned and he was tossed into the air. The Senator in falling struck on the top of his head, and for a time thought his neck was broken. But happily he escaped with a few bruises.

Sutter.

Fruit Prospects.—Yuba City Farmer: A prominent fruit grower here reports the following estimate of his observations as to the fruit prospects of this locality for the coming season: Tuscan and Phillip cling peaches, average crop; Muirs, three-quarters; other varieties, from one-half to two-thirds; almonds, three-quarters; pears, from one-quarter to one-half; prunes, less than one-half; apricots, average; cherries, three-quarters; grapes, full crop.

Tehama.

Wool Brings Good Figures.—Red Bluff News: The sheep of Tehama county this year have been shorn of their woolly coats and have lined the pockets of their owners with gold. The aggregate weight will run close to a million pounds, and the average price is 5 cents better than in 1904. Up to date there have been brought in, in round numbers, 845,000 pounds of wool, and taking 22 cents as a low average price, would mean a total of nearly $200,000 as the monetary result of this spring's fleeces. A few clips of exceptionally good quality brought 25 cents. Not believing the market would advance to such a high figure, some sold a couple of weeks ago when the quotations were 18 cents, but those who had nerve to refuse that price were rewarded by receiving the top figure. This has been an unusually prosperous year for the sheep industry, which is now a large one in this section.

Tulare.

Good for Sheepmen. — Porterville Enterprise: John McIntyre, of White River, was in town Monday shipping nineteen bales of wool to San Francisco, which he had sold at the high price of 15½c a pound f. o. b. here. This, said Mr. McIntyre, is the highest price paid for wool here since the spring of 1893, when it touched 15c. The price of sheep has also improved, feed is plentiful, and the outlook for the sheepmen was never better.

Peculiar Wheat Conditions.—Porterville Messenger: Henry Etter, who has for a number of years been extensively engaged in wheat farming in this part of the State, discovered a peculiar condition in the coming wheat crop last week. He found that in a field where white wheat and Sonora had been sown together that the white wheat was filling well and the Sonora kernels appeared to be stunted and shriveled up, and during the past two weeks there has been no apparent change in the condition of this wheat. It appears to be at a standstill, and Mr. Etter is at a loss to know just what causes the stunted growth.

Yuba.

Fancy Prices for Wool.—Wheatland Four Corners: The wool growers are playing almost as lucky this season as the hop growers did last year and are making small fortunes on the sale of their spring clip of wool. Some of the producers have already sold and others are holding for better figures. T. Welch has secured the highest figure thus far, 22½c. Price Blackford's output brought 22½c, and Thomas Peckham realized 22c. J. Moran sold several days ago, realizing 20½c.

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ENTOMOLOGICAL.

A Talk on the Thrips.

At the last meeting of the San Jose Farmers' Club, Dudley Moulton, Horticultural Commissioner, was present and gave an interesting description of the insect, its habits, and what has been tried in the way of combatting the pest, which, however, he declared to be not nearly so bad as has been made out, though still serious enough, as no satisfactory way has yet been found of fighting it. The talk is reported in the Mercury as follows:

Mr. Moulton showed specimens of the work of thrips on cherry, peach, apricot and prune trees, and drawings of the insect. The thrips is imperfectly understood as yet, he said, its work hitherto in different parts of the country being limited to certain kinds of trees, but in this valley it is now attacking all kinds of deciduous trees.

Since the voting of the appropriation of $500 a few weeks ago by the supervisors, Mr. Moulton has undertaken work on three lines. He has employed two assistants to go through the valley to gather all available information on the subject; he has been experimenting with various washes, and he has been investigating the insects found working here as the natural enemies of the thrips, California especially being well provided with natural enemies of pests.

A map of the valley was used to show where the worst damage was done last year. This year, especially near Milpitas, the results will be nearly the same, but some places where the loss was almost total last year there will be no loss this year. Mr. Moulton said he was convinced that in some places the thrips has been at work for four, five, even six years. For three years at one orchard there has been no fruit picked. The leaf buds were injured so that the trees could hardly start. In other places spots of sixty or more acres are cleaned. People did nothing last year because they did not know what was the cause. Now, however, that it has been pretty well found out how the work is done by the insect, something may be done to counteract it. The thrips is a common pest, he thinks, in fruit sections all over this State. The insect works inside the bud for a day or two and then moves on to another tree, so it is hard to detect it. Presumably as soon as the eggs are deposited the life is spent, as is usual with insects, their mission having been performed. So far only females are found, and there has been no breeding. The female lives through the winter as the adult insect. They spread from the north mainly, on the north breezes. Their flight is usually just at evening, when they can often be observed thickly, gathering on one's coat and hat while driving or wheeling along the road. They also hover over a tree, passing slowly from tree to tree. Smudging is found to be of little or no use. Spraying is also useless, because their breathing pores are protected in folds under the sides of the body, so that external washes can scarcely reach them. Creosote and other things are more or less effective in washes. There is a new brood coming on now; some of the adults are still laying, the period of egg-laying being about six months.

Damage Comparatively Slight.—The damage over Santa Clara valley is not so great as people have feared, but it is serious, because we have no way yet of combatting it. The thrips may have been here for years, as it is found in flowers of various kinds; or it may have been brought here because of the change in the valley within the last ten or fifteen years from a wild state to almost a garden. The peculiar scab on prunes the last two or three years, and on other fruit, is likely due to it. An insect which has so many food plants is very hard to fight.

Many of the troubles supposed to have been due to plant diseases, scabs, etc., will no doubt be found due directly to thrips—it is so common.

A number of raphidians were shown in a case at work on the thrips. The raphidian is a predaceous insect, and is entirely harmless to the trees. It feeds, however, entirely on the young thrips, not attacking the adults. Spiders are possibly enemies. Ants may take thrips out of their way, but they are not likely carnivorous.

Prof. Heath, of Stanford, who was also present, told some of the workings of ants.

Before success can be had in fighting the pest, Mr. Moulton said, the place where the thrips spends the winter must be found, so it can be attacked in the breeding place, whether in grass, under the fences, in oak trees or other ornamental trees. It takes about five minutes for the female to deposit the egg, and about four days for the young to come out.

Every spray tried has been only partly effective; every insect may be killed off a tree (and the buds be killed, too), but in a few days a new lot will come in. If the blossom is affected the tip of the petals will be brown, the tree will have a generally sick appearance. The rose thrips is different from the other kinds. The only hope is in finding a hostile insect, or in finding the breeding place. Tobacco smoke will kill the insects that it can get at, but the thrips has peculiar breathing pores, protected from smoke.

THE VETERINARIAN.

The Buzzard as a Distributor of Disease.

One of the revolutions which science is continually making in popular conceptions of existing conditions, says the Sacramento Union, will soon occur in the field of veterinary theory in this State. Two of the foremost veterinarians of California are now engaged in a quiet but effective crusade against the turkey buzzard, so long protected and cherished as a scavenger throughout the stock raising sections of California and the West

It has been proved that the vulture and the buzzard are two of the agents most concerned in the distribution of epidemic animal diseases.

It was only due to the fact that State Veterinarian Keane discovered that there was no statute forbidding the destruction of birds now on the books that he did not draw up a bill repealing the old law and substituting therefor a bounty upon the buzzard's bald, repulsive head. It is probable, however, that a law of this kind will be passed at the next session of the Legislature.

Nearly all the counties of the State have passed ordinances imposing a heavy fine—sometimes as much as $50—upon the person who destroys one of these birds of dour appearance and ill omen.

But the turkey buzzard, which is by far the most numerous of the scavenger tribe in the West, will probably not much longer enjoy this immunity from persecution. Dr. Archibald Ward, instructor in veterinary science and pathology at the State University, has for some time been carrying on one of the most interesting experiments in veterinary research. He has a pair of captive buzzards which, in order to satisfy a delicate taste, he feeds upon various scraps of meat which have lost to a great extent their vitality. The food is prepared with considerable care and usually is inoculated with lively cultures of such bacteria, for instance, as those which cause anthrax in cattle.

An examination of the food which these birds disgorge whenever they overfeed discloses the fact that their crops are perfectly adapted to the purpose of carrying on the culture of dangerous microbes.

This is exactly the result which is obtained in the bacteriological laboratories of the disciples of Pasteur. Here for the various and laborious processes of the patient bacteriologist is substituted a much simpler scheme, which is not only better because it is all within the everyday operation of Mother Nature, but which constitutes for the scavenger kind a deadly weapon. Armed ever with a thousand million of the most deadly bacilli, the vulture ranges over a country hundreds of square miles in area. Where he stops to feed he disgorges and leaves there the ammunition with which innumerable cattle, sheep or hogs, hitherto untouched by plague, may be slaughtered and thereby furnish to the flying scavengers a feast for months.

For many years veterinarians and stockmen of the West have been perplexed at such phenomena, for instance, as the sudden and inexplicable appearance among their herds as the hoof rot among sheep, the black leg and Texas fever among cattle and the cholera among hogs. They little dreamed that, like a visitation of Providence, these plagues had swooped down from the very heavens in the shape of the ghoulish black denizens of the air. At times a disease would jump for a thousand miles, where there was no possibility of contaminated animals mixing with the herd which had become suddenly infected. In cases of this kind it was thought that the disease had been carried with the wind. But gradually suspicion has settled upon the winged scavengers who feed off the carcasses of the dead.

Counties May Have Veterinarians.

An amendment by the last legislature to the County Government Act of 1897 is of importance to all agricultural counties. It provides that there shall be a livestock inspector in each county, who is to receive a salary of $125 a month, and must be a registered veterinary surgeon, certified and accredited by the State Veterinary Medical Board.

Discretion of the Supervisors.—But there is given to the Board of Supervisors the discretion of not employing such officer, whenever in the judgment of the board such an officer is not demanded by the public welfare. But whenever the office is filled it is to be done by the Supervisors, and the incumbent shall fill the office only at the pleasure of the board.

The board must, under the new law, adopt orders and enact ordinance necessary for the preservation of the health of domestic livestock, which orders and ordinances shall not be in conflict with State or Federal laws, and the Board of Supervisors shall provide for the payment of all expenses incurred in enforcing the same, which expenses shall be a county charge and payable in the same manner and out of the same funds as other county charges are paid.

Power of the Inspector.—It is to be the duty of the livestock inspector, acting under the supervision of the State Veterinarian, to enforce all laws of the State, and all orders and ordinances of the board pertaining to the health and sanitary surroundings of all livestock in his county, and for that purpose he is authorized and empowered, by and with the approval of the Board of Supervisors, to establish, maintain and enforce such quarantine, sanitary and other regulations as he may deem proper and necessary. He shall give to the duties of his office such time and attention as may be necessary to secure the general protection and advancement of all matters pertaining to the health and sanitary condition of the domestic livestock of his county.

The enactment of this law by the late Legislature removes all the questions heretofore at issue concerning the power of the Board of Supervisors to employ a County Veterinarian.

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The Home Circle.

Keep A-Goin'!

If you strike a thorn or rose,
Keep a-goin'!
If it hails or if it snows,
Keep a-goin'!
'Taint no use to sit and whine,
When the fish ain't on your line,
Bait your hook and keep on tryin'.
Keep a-goin'!

When the weather kills your crop,
Keep a-goin'!
When you tumble from the top,
Keep a-goin'!
S'pose you're out of every dime,
Gettin' broke ain't any crime;
Tell the world you're feelin' prime,
Keep a-goin'!

When it looks like all is up,
Keep a-goin'!
Drain the sweetness from the cup,
Keep a-goin'!
See the wild birds on the wing!
Hear the bells that sweetly ring!
When you feel like singin',—sing!
Keep a-goin'!

—Star of Hope.

The Lost Moment.

Among the wavering Shadows of the night
Came one whose presence was a long-lost light,
Whose voice was long-lost melody divine,
Saying, "The Present Time alone is thine."

My prisoned soul beat out a swift reply:
"Since thou art gone, no Present Time have I,
But only the deep-memoried, sunken Past."
(The Presence vanished up the Heavenly Vast.)

It was my doubt the blessed vision grieved;
What comfort mine, had I the voice believed,
And plucked that moment's darkling, dewy bloom
In Shadow Land, though girt with waking doom.

—Edith M. Thomas.

A Broken Engagement.

When my friend John sent me a card showing that he had become engaged for the fourth time, I made up my mind that I would not congratulate him until he notified me that the engagement had been broken, like the others.

That this would happen was a thing that all his friends knew, but when three months had passed and we had neither seen John in the club nor at the race track, most of us began to think that he was lost to us forever.

One day I met him on board a steamer as he was on his way to Long Branch with his fiancee and future mother-in-law. Loaded down with a number of parcels besides his sweetheart's cape and parasol, he did not look particularly happy, and I knew that if the engagement had not yet been broken off it was not his fault.

A month later John suddenly turned up at the club, radiantly happy, and evidently feeling like a two year old, as he said himself, and still we had all heard that this time it was not he who had broken off the engagement, although he did not tell us so himself.

A few weeks after, however, he told me how it happened.

"Everybody knows that my engagement was broken," he said with a smile, "but so far no one knows how it happened. It was simply a case of too much mother-in-law. I was really in love with Edith and she with me, and if it had not been for her mother no couple could have been happier than we were. But her mother was more than I could stand.

"From the very first day she took possession of me and immediately began to transform me. I can say without exaggeration that with the exception of the few hours I was allowed to sleep she clung to me like a leech.

"I had to give up my cigars, I must solemnly swear never to touch anything stronger than tea, and not one moment was I alone with Edith during the four months the engagement lasted. Time and again I made up my mind to break loose, but when I saw how Edith clung to me I simply could not bear the idea of making her unhappy.

"Now, you know that I have never been, or pretended to be, a saint, but I had, of course, not considered it my duty to inform my sweetheart, and far less her mother, of my past life, and neither of them suspected that this was my fourth attempt at getting into the harbor of matrimony.

"The day had already been set for our wedding, we had looked at furniture and apartments, and my mother-in-law had already decided in favor of one apartment uptown and had of course picked the best room for her own use. That she was to stay with us until the end of her mortal life she considered a foregone conclusion, and the very thought of it made me tremble.

"I really did not know what to do to get out of it.

"Then one day the catastrophe came. As usual, I had come to spend the day with Edith and her mother, and as soon as I entered the house I felt that there was something in the air. I found Edith swimming in tears, and standing behind her chair was her mother, looking like a thunder cloud.

"Without a word she handed me a letter, and at first glance I could see that it contained something concerning me, and something very unpleasant at that.

"It was, in fact, a summing up of my whole past, described in the most vivid colors. Every little love affair I had since I was a boy was carefully mentioned; the fact of my three previous engagements had, of course, not been forgotten, and I was described besides as a passionate gambler and inveterate drunkard and cigarette fiend.

"There was no signature to the letter, and, having read it, I therefore handed it back to Mrs. Nemesis in my most nonchalant manner.

"'I hardly consider it necessary that I should defend myself against accusations made by a person who does not dare to sign his name,' I said.

"'But what about the three engagements?' my mother-in-law asked, icily.

"'Well, I can't deny that I have been mistaken in my affinity before, but I can not see why I should be blamed for that.'

"'Oh, John, I would never have believed that you were as bad as that!' sobbed Edith.

"Now, Dick, you know that patience has never been my strong point, and thinking of my suffering during the past months, I stood up from my chair and made this little speech in my most formal manner: 'My dear Mrs. Brown, I can readily see that you have never had much confidence in me since an anonymous letter is all that was necessary to make you lose it. That a young man cannot go through life without having a few love affairs is a thing which not even a bishop would condemn. And that I have been engaged three times——'

"I did not get any further, for my mother-in-law opened up on me such a rapid fire of eloquence that I found it advisable to leave the room rather hurriedly.

"I did not stop running until I reached my bachelor quarters, packed Edith's photograph and the presents she had given me in a box and rang for a messenger boy. When the door closed behind him I drew a sigh of relief—I was free once more."

I had already opened my mouth to congratulate John upon his escape, but he interrupted me.

"You have not heard all yet. What I have told you is nothing but what all New York knows. The secret of the whole affair is—I wrote the anonymous letter myself."—Walter Keene.

Teacher—Tommy, next time you are late, bring an excuse from your father.

Tommy—Who? Father? Why, he ain't no good at excuses. Ma always finds him out.

"Say, mamma," queried little Mary Ellen, "what's a dead letter?"

"Any letter that's given to your father to mail, my dear," replied the mother.

Care of the Face.

The preservation of youth and beauty is much easier than is generally supposed, and the use of dangerous and injurious cosmetics quite unnecessary. External applications, while important, are not the whole thing. There are other considerations to be borne in mind. A doctor will tell you that he must get at the cause before he can prescribe a remedy for an illness, and so before you can improve your appearance you must try to discover a reason for your various defects.

A Frenchman has said, "The whole law of attraction lies in the skin." It is therefore plainly your duty to devote some time and attention to it. To begin with, you must remember that the skin is an important excretory organ, and that all impurities on the surface must be carefully removed before applying the most simple remedy. It should be thought of as a cover that must be kept fresh and aired.

Suppose you are out in the open air a great deal in the winter, and that the day begins with a walk, which stirs up the blood in your veins and brightens your eyes. Before taking the afternoon drive, apply with a very soft handkerchief a small quantity of fine cream, put on so carefully that it is invisible to the eye, but giving the face a fresh, moist look, like a child's. It also prevents the face from being lined or chapped by the cold. Upon returning home wet a piece of cambric with alcohol and pass it over the face. It will remove the surface dust and the cream, which has done its duty, and will leave the skin sweet and clean underneath for the evening.

Before retiring for the night, wash the face in warm water, with castile soap, and then smear it lightly over with the cream. Work the cream gently in with your fingers, for, as the skin is only to a slight extent an absorbing organ, it is necessary to use a little persuasion by gently rubbing and massage. Solutions can hardly be absorbed at all by a sound, healthy skin. Apply under the eyes—along the tear duct—some lanoline cold cream, but do not rub. Leave it on all night. Place a little on the eyelids and eyebrows. It has a cooling effect on the eye and gives a full look to the lid, which is considered a mark of beauty, and makes the eye look large. To the eyebrows it gives that penciled effect and prevents their spreading.

There is an excellent cream prepared with peroxide of hydrogen. The peroxide helps to whiten the skin and is healing and prevents the formation of blackheads, which are not only unsightly, but enlarge the pores, making the skin coarse and ugly.

A growth of dark, superfluous hair either on the lip or face may be bleached so light a color by peroxide as to be almost imperceptible, and, unlike the many depilatories in the market, it is a safe and harmless method of making the growth invisible even if still there.

You should never lose your grip on beauty or youth any more than you do on life. The first sign of advancing years is when the face begins to sag. That is much worse than the fine lines that can be effaced, but you can prevent sagging if you try. Keep the muscles stiffened by splashing cold water on the face and by slapping the cheeks gently. Do not let any muscle fall into disuse. Try to look bright even when alone in your room, and when working, writing or reading do not let the mouth droop. Keep all the muscles alive during the waking hours, but through the night relax every inch of your body. Have plenty of soft pillows, not under your head, but make a nest of them so that every part of your body is supported and at rest. And, winter or summer, have your window open. If fresh air is necessary for delicate people with chest complaints, how much more necessary it is for those who are well and wish to keep so.

A dry, sallow skin is often caused by too much uric acid in the system. This may be remedied by taking lithia tablets (five grains), one three times a day in a tumbler of water, either with your meals or between them.

A solution made with a teaspoonful of boric acid to a pint of distilled water may be dropped into the outer corner of the eye, morning and evening, with a dropper. This solution is cooling and keeps the eyes clear and bright. Above all things, never be in a hurry. Hurry irritates the nerves, and nervousness is the deadliest enemy of health, beauty and happiness.

A warm bath at bedtime, followed by a gentle massage, is excellent for every one. Rest when you can. Lie down for an hour in the afternoon and try to sleep. If not, read a light and amusing book. The brain must have rest like any other part of the body.—New York Tribune.

Olive Oil Cure.

Sufferers from nerve disorders should try the olive oil cure, which is most highly recommened to those who have learned abroad to appreciate the addition of oils to salads. The very best and purest olive oil must be obtained, and one teaspoonful three times a day is the dose if the victim of neuralgia, anæmia or disordered nerves is in a hurry to be cured. Otherwise it is recommended that the oil taste should be cultivated by the addition of a very little to the salad taken once or twice a day, to which a dash of vinegar may be added, so that the disagreeable taste of the oil may be almost completely disguised. The patient should gradually lessen the vinegar and increase the oil, until it is so well liked that it can be taken raw. It is claimed for olive oil, just as it is for apples, that it keeps the liver in good working order, thus preventing rheumatism, rendering the complexion healthy and clear and also making the hair grow glossy and abundant. — London Mail.

Your Watch is a Compass.

"Most men who own a good watch," said a jeweler, "think they know all about it. They have the number fixed in their memory in case it is stolen. They could probably pick it out from fifty other watches with their eyes shut. But how many men know that their watch is a compass and will tell north from south as accurately as it will tell the time of day? Stanley, the explorer, did not know it until he had groped his way through the dark continent and met a Belgian sailor on the coast. Every watch is a compass. If you point the hour hand to the sun the south is exactly half way between the hour and the figure XII on the dial. Suppose, for instance, it is 4 o'clock. Point the hand indicating 4 to the sun and II on the watch is exactly south. If it is 8 o'clock, point the hand indicating 8 to the sun and the figure X on the dial is due south. No man need get lost if he carries a watch."

A Refreshing Bath.

A warm salt bath is very refreshing to anyone suffering from exhaustion of travel or a long shopping expedition, which is as trying to mind and body as anything that can be undertaken by a woman. Away from the seashore, a very simple substitute for sea-water is a cup of rock salt dissolved in warm water and added to the bath. When the salt is irritating to the skin, take a warm bath and sponge off with a mixture of violet or lavender water and alcohol, about half and half, and rub briskly with a warm friction towel. Such a method prevents the exhaustion and dangers of cold which follow a warm bath.

The late Prince Herbert Bismarck had the reputation of having a decidedly brusque manner in society. Once at a royal reception he bumped roughly against an Italian prelate, who looked at him indignantly.

"You evidently don't know who I am," said the prince haughtily. "I am Herbert Bismarck."

"Oh," answered the prelate, "if that doesn't amount to an apology it is certainly a perfect explanation."

Domestic Hints.

White House Cake. — Beat very thoroughly together a cup and a half of sugar, half a cup of butter and the whites of five eggs; then add two-thirds of a cup of milk, a little more than two cups of fine flour and a teaspoonful of almond extract. Whip until light and frothy and bake in a moderate oven.

Green Mountain Buns. — Mix a stiff batter out of three cups of milk, one of sugar and the necessary amount of flour. Add a yeast cake. Let rise for half a day, then add one cupful of molasses, one cupful of currants, a teaspoonful of cinnamon, one of soda, one-half of cloves, and a full cup of melted butter; use sufficient flour to make a stiff batter again, allow it to rise over night and spread with raw egg when baked.

German Scallop. — Boil a cabbage, then drain and chop fine. Make a white sauce by stirring into three tablespoonfuls of butter, two of flour and adding a cupful of milk. Season with pepper and salt. Butter a baking dish, put in a layer of cabbage, turn some of the sauce over it, a few drops of lemon juice, and some grated cheese. Fill the dish in this manner, cover with a layer of cracker crumbs and drop on bits of butter and a sprinkle of cayenne. Bake and brown.

Stuffed Tomatoes. — Twelve large, smooth, sound tomatoes, one coffee-cupful of finely chopped cold cooked meat, two cupfuls of fine breadcrumbs, one-half cupful of water, one tablespoonful of minced onion, one large teaspoonful of salt, one-half teaspoonful of pepper, one-half teaspoonful of powdered summer savory. Cut a thin slice from the stem end of each tomato; with a teaspoon scoop out the inside juice and pulp. Put a tablespoonful of butter in a saucepan, and place it over the fire; when it melts add the chopped onion, cook until it turns yellow, then add the tomato pulp and water; cook five minutes, then add the meat and half the crumbs. Season with salt, pepper and summer savory; remove from the fire and, when cool, fill the tomatoes full. Sprinkle the top of each with the other cupful of crumbs and dot with butter. Arrange them in a baking-pan and brown in a hot oven for forty minutes. Serve as soon as baked. Garnish with parsley.

Simmered Fowl. — No matter how tough or hopeless a fowl may seem, roast it first to give the meat a flavor. This must be done slowly and carefully, basting at frequent intervals. When it is nicely colored, split down the back and lay it flat in covered ham boiler. Pour in all the gravy from the roasting pan and rinse same well with an equal quantity of hot water. Add a liberal helping of canned tomatoes to gravy and dot the surface of the fowl here and there with tiny bits of onion. When these have become roasted, dredge with flour and keep up the basting through three or four hours of simmering. A fowl thus prepared will keep a week, and while it tastes delicious cold, does not betray the least "warmed-over" taste when heated through. It should be kept covered and allowed to remain in the pot in which it was cooked without being removed from the gravy, to which a little hot water may be added when required.

Gloves.

"Don't buy a glove that is too small," advised a woman buyer in one of New York's big department stores. "It not only cramps the hand, but it prevents grace of motion and gives poor service.

"Not one-half the women who come in here know what points to watch out for in buying gloves. I try to instruct my girls to inform customers, but a woman must be ripe for the knowledge through personal experience or the advice will not be appreciated.

"Black gloves are generally less elastic than light colors. Dressed kid gloves usually retain their freshness longer and are more durable than suede. Short-fingered gloves give the hand a malformed look, and they soon break out at the tips or between the fingers.

"Putting on a glove for the first time has more to do with the fit and wear than almost anything else. Take time to fit them and, if possible, wear them a good half hour before closing the fingers. Button the last buttons first, for the greatest strain naturally comes on the first." — New York Sun.



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Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
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Sign Painter	Electric Machine Designer	R. R. Construction Engineer
Stationary Engineer	Dynamo Tender	Surveyor
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The Markets.

San Francisco Produce Report.

San Francisco, April 19, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 16⅜@1 15	88 @87¼
Thursday	1 15½@1 17⅛	87½@88⅛
Friday	1 17⅛@1 14⅞	88⅛@87⅝
Saturday	1 14 @1 16	87⅝@88⅛
Monday	1 13⅝@1 15	87½@88¼
Tuesday	1 14¼@1 15¾	88¾@87⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	48 @48½	48½@48⅝
Thursday	48⅝@48¾	48¼@48⅜
Friday	49⅛@48¾	48¾@48⅝
Saturday	47¼@48½	47¾@48⅛
Monday	48 @47	48⅛@47½
Tuesday	47⅝@47⅜	47⅞@47⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$——@——	$1 28¾@1 29⅝
Friday	1 43½@——	1 29½@1 29⅜
Saturday	——@——	1 29⅛@——
Monday	——@——	1 29 @1 29⅛
Tuesday	1 44½@1 44	1 29 @——
Wednesday	——@——	1 28⅜@1 28½

Wheat.

The same inactive market for wheat as for weeks past continues to prevail in this center, stocks being too light to permit of much trading. Most of the wheat arriving is from Oregon and Washington, going to millers or dealers in feed. At no time since California has been known as an exporter of wheat has the export trade in this cereal been so dull as during the past few months. There have been no cargo clearances since January, and there is not likely to be much of consequence done in the way of shipping wheat from here for several months to come. About a dozen vessels have been chartered to arrive, which will likely take wheat as part if not whole cargo, the rate for wheat being 22s, usual option of European ports. Quotable values for wheat in the local market have shown no appreciable change. Eastern markets have presented a somewhat firmer tone than previous week, in consequence of unfavorable crop weather in a considerable portion of the wheat belt of the Middle West. The European markets, on the other hand, showed less firmness, both Liverpool and Paris being quoted lower.

California Milling	$1 52½	@1 60	
Cal. No. 1 shipping, alongside	——	@——	
Cal. No. 1 wheat	1 40	@1 45	
Oregon Club	1 40	@1 47½	

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.44⅛@1.43½.
December, 1905, delivery, $1 29⅝@1.28⅜.

Wednesday, at the forenoon session of Exchange, for May, 1905, wheat, $1.42¾ was bid, $1.43½ asked; December, 1905, sold at $1.28⅝@1.28½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903–04.	1904–05.
Liv. quotations	7s0d@7s0½d	6-9d@—s-d
Freight rates	16@—s	17½@—s
Local market	$1 32½@1 35	$1 40 @1 45

Flour.

Values are ruling decidedly steady for desirable qualities. There are no heavy quantities offering. Considering the limited spot supplies and the absence of undue selling pressure on good to choice flour, there is a fair movement, both outward and on local account.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Market is quiet and is apt to remain so until the opening of the new season. Aside from some shipments to the Hawaiian Islands, largely of crushed barley, business is almost wholly on local account. Small quantities of Eastern barley are being landed here, the quality being rather ordinary and the asking price about $1.20 per cental. Large buyers are now not disposed to bid over $1.20 for any feed barley, but choice is difficult to obtain under $1.22½. In the speculative market May barley sold at $1.16¼@1.15, and December option at 89½@87. Some vessels have been chartered to carry barley to Europe the coming season at 23s. 9d. and 23s. 3d., usual option as to port of discharge.

Feed, No. 1 to choice	$1 20	@1 22½
Feed, fair to good	1 17½	@1 20
Brewing, No. 1 to choice	1 22½	@1 27½
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 22½

Oats.

Values show no quotable change, but for ordinary feed qualities the market lacks firmness, stocks of this description being tolerably heavy and ahead of the immediate demand. Choice to select oats are in very limited supply, with trading in the same mostly of a retail chaaracter, and quotations for the time being largely nominal.

White oats, fancy feed	$1 55	@1 60
White, good to choice	1 47½	@1 52½
White, poor to fair	1 40	@1 45
Milling	1 45	@1 60
Black oats	1 35	@1 70
Red, fair to choice	1 35	@1 60

Corn.

Offerings are tolerably heavy, both of Eastern and domestic, more especially of Large Yellow and mixed Yellow and White, with market for these descriptions rather weak. Market for choice White it not inclining particularly in favor of buyers, this description having been lately in good request for Central America. The steamer City of Sydney, sailing Saturday, took 8792 centats.

Large White, good to choice Cal	$1 40	@1 45
Large Yellow	1 35	@1 40
Small Yellow	1 55	@1 65
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 30	@1 37½

Rye.

Market is very lightly stocked and is against buyers.

Good to choice	$1 55	@1 65

Buckwheat.

Scarcely any offering and values in consequence are poorly defined.

Good to choice	$2 00	@2 25

Beans.

There has been some shipping demand, mainly for mixed car lots for Arizona and Texas. Colored beans are largely used in above sections. Reds are scarce and in a small way command fancy prices. Current values for good to choice white beans are being well maintained.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 50	@2 75
Pinks	3 00	@3 50
Bayos, good to choice	3 00	@3 25
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	4 75	@4 90
Black-eye Beans	2 60	@2 90

Dried Peas.

Very few choice domestic of any sort now on market. Millers are importing some Eastern Green and Spanish at comparatively low figures.

Green Peas, California	1 50	@2 00
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The local market gives no evidence of any trading of consequence. Offerings from first hands are light and buyers are not disposed to operate at prices generally asked. To sell freely, lower figures than below quoted would have to be accepted, while if buyers endeavored to operate freely, they might find it necessary to pay more than quotations. The New York Producers' Price Current says: "In New York State there have been no transactions the past week of any consequence. Growers are now beginning to work in the yards and from present indications it looks as if roots had wintered well. Holders are asking 25c to 27c for their hops but are not able to effect any sales. On the local market a sale of 250 bales prime Pacifics was made at 25½c and and 100 bales of Sonomas at 26c. The German market is reported as very quiet and from London one hears that such growers as are not in the pool are willing sellers."

California, good to choice, 1904 crop	23	@26

Wool.

Purchasing continues active in the interior and at relatively stiffer prices in many instances than are given out as quotations in this center. Some of the growers of Sutter and Yuba counties are reported having sold their wool before shearing, mostly within range of 18@20½c. Others are holding for better prices, which are expected to be realized at the pool sales of the Growers' Association to be held the coming month. In last week's Pacific Rural Press, page 230, Agricultural Review, under heading of Yuba county, wool sales were misprinted as having been made at 17@70c. The figures should have read 17@20c per lb.

SPRING.

Northern, free	24 @25½
Northern, defective	20 @22
Middle County, free	20 @23
Middle County, defective	17 @19
San Joaquin and Southern, free	18 @20
San Joaquin and Southern, defective	13 @16
Oregon, good to choice	20 @24
Nevada	16 @23

Hay and Straw.

Not much choice to select Wheat, mixed Wheat and Oat or Tame Oat arriving, and these kinds are salable to comparatively fair advantage. For the cheaper grades the demand is sluggish at low figures, and nothing to warrant anticipating soon any material improvement. New hay will be on market in a short time, some having been already cut. Straw is in light receipt but slow of sale.

Wheat, good to choice	$11 00	@ 13 00
Wheat and Oat	9 00	@ 11 50
Tame Oat, fair to choice	8 00	@ 11 00
Wild Oat	7 00	@ 9 00
Barley	8 00	@ 10 00
Alfalfa	7 00	@ 10 00
Clover	6 00	@ 9 00
Stock hay	6 00	@ 7 50
Compressed	11 00	@ 13 00
Straw, ₱ bale	25	@ 50

Millstuffs.

Demand for Bran and Middlings is not brisk, but stocks are mostly in few hands and are being quite steadily held. Tendency on Rolled Barley and Milled Corn has been to lower figures.

Alfalfa Meal, ₱ ton	$21 00	@ 22 50
Bran, ₱ ton	21 00	@ 22 00
Middlings	25 00	@ 28 00
Shorts, Oregon	21 00	@ 22 50
Barley, Rolled	26 00	@ 26 50
Cornmeal	28 50	@ 29 50
Cracked Corn	29 00	@ 30 00
Oilcake Meal	32 50	@ 34 00

Seeds.

Market for Alfalfa seed is lifeless, with considerable still in stock, mostly off quality. Yellow Mustard is in moderate supply and is being steadily held. Market is bare of Trieste or Brown Mustard. Not much Flaxseed offering. Bird Seed is in fair supply.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
	Per lb.	
Alfalfa	8	@12½
Canary	6¼	@ 6¾
Rape	1¾	@ 2¼
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

With the new season near at hand, there is a desire on the part of wholesale handlers and jobbers to close out holdings. Concessions are being granted buyers rather than miss sales, especially on amber grades, which constitute the bulk of present offerings.

Extracted, White Liquid	5½	@ 6
Extracted, Light Amber	4	@ 5
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

There is not much in stock, but demand at present is light. Prices are without quotable change.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Beef is offering in sufficient quantity for current needs and the quality is of high average. Veal is in fair receipt; desirable sizes are meeting with tolerably prompt custom at quotably unchanged values. Mutton and Lamb are selling at much the same figures as for several weeks past, with demand not very brisk. Arrivals of Hogs are rather heavy and market is tending more in favor of buyers.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½	@ 6
Beef, 2nd quality	5	@—
Beef, 3rd quality	4	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 180 lbs	5¾	@ 5¾
Hogs, large, hard, over 180 pounds	5¾	@ 5½
Hogs, small, fat	5½	@ 5¾
Veal, large, ₱ lb	4	@ 6
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	10	@10½

Hides, Skins and Tallow.

Hides and Pelts in prime condition are in fair request at prevailing prices. Tallow is going outward in considerable quantity and current values are being well maintained.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11	—@10
Medium Steers, 48 to 56 lbs	—@10½	—@ 9½
Light Steers, under 48 lbs	—@ 9½	—@ 9
Heavy Cow Hides, over 50 lbs	—@10	—@ 9
Light Cow Hides, under 50 lbs	—@ 9½	—@ 8½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@12½	—@11½
Dry Hides	—@18	—@17
Dry Kip and Veal, 11 to 16 lbs	—@15	—@13
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@——	
Horse Hides, salted, medium	2 75@——	
Horse Hides, salted, small	2 25@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Market is quiet for all descriptions. Grain Bags are being very steadily held.

Bean Bags	4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6 @6½
Grain Bags, Calcutta, buyer June-July	6½@6¾
Wool Sacks, 4-lb	32 @——
Wool Sacks, 3½lb	30 @——

Poultry.

There were no excessive offerings of full grown poultry in prime to choice condition, and such met with a firm market, particularly large and fat young stock. Broilers continued to arrive more freely than the immediate demand warranted. Market for Pigeons ruled rather quiet for both Young and Old.

Turkeys, Dressed, choice, ₱ lb	$ 21	@ 23
Turkeys, live gobblers, ₱ lb	20	@ 22
Turkeys, live hens ₱ lb	20	@ 22
Hens, California, ₱ dozen	5 50	@ 6 50
Hens, large	6 50	@ 7 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	6 50	@ 7 50
Fryers	5 50	@ 6 50
Broilers, large	4 00	@ 4 50
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	6 00	@ 7 00
Ducks, large young, ₱ dozen	7 00	@ 8 00
Geese, ₱ pair	2 25	@ 3 50
Goslings, ₱ pair	3 00	@ 3 50
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	1 50	@ 2 00

Butter.

While quotable values are without pronounced change, the market has developed a firmer tone, in consequence of shipments East. The filling of some orders for Alaska and for some mining sections also aided in improving conditions for the selling interest.

Creamery, extras, ₱ lb	18	@19
Creamery, firsts	17½	@18½
Creamery, seconds	17	@—
Dairy, select	18	@—
Dairy, firsts	17½	@—
Dairy, seconds	17	@—
Mixed Store	15	@16

Cheese.

Stocks are of quite moderate proportions and for desirable qualities prevailing prices are being well maintained. There is some shipping demand and a fair movement on local account.

California, fancy flat, new	12½	@13
California, good to choice	12	@12½
California, fair to good	11	@12
California, "Young Americas"	11½	@13½
Eastern	16	@17

Eggs.

Market is ruling steady, purchasing being lively here and in the interior, both on cold storage account and for immediate use. Kansas and Missouri eggs are not obtainable in carloads lots for less than 16½c at primary points, making them cost 20c landed here.

California, select, large, white and fresh	19	@20
California, select, irregular color & size	18	@19
California, good to choice store	17	@18
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Asparagus continued to arrive freely, but demand was active and prices were without special change. Choice Peas and String Beans did not go begging for custom. Tomatoes brought stiff prices. Rhubarb was in heavy supply. Onions were scarce and high most of the week: Monday's steamer from Australia brought 3470 crates.

Asparagus, No. 1 to choice, ₱ lb	5	@ 6½
Asparagus, No. 2, ₱ lb	4	@ 4½
Beans, Lima, ₱ lb	—	@ —
Beans, String, ₱ lb	8	@ 12½
Beans, Wax, ₱ lb	—	@ —
Cabbage, choice garden, ₱ 100 lbs	50	@ —
Egg Plant, ₱ lb	15	@ 17½
Garlic, ₱ lb	10	@ 15
Mushrooms, ₱ lb	—	@ —
Onions, Australian, ₱ ctl	5 00	@ 5 50
Peas, Green, ₱ lb	4	@ 6
Peppers, Bell, ₱ lb	—	@ —
Peppers, Green, ₱ lb	20	@ 25
Rhubarb ₱ box	25	@ 75
Summer Squash, small box	1 50	@ 1 75
Tomatoes, Los Angeles, ₱ box	2 25	@ 2 75

Note.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market for Old Potatoes remained firm, stocks being light and representing in the main prior arrival purchases at tolerably stiff prices. New Potatoes were in fair receipt, but were mostly of small size and demand for them was not very brisk.

Cal. Early Rose, ₱ cental	—	@ —
Salinas Burbanks, ₱ cental	—	@ —
River Burbanks, ₱ cental	75	@ 1 25
River Reds, ₱ cental	85	@ 1 00
Oregon Burbanks, ₱ cental	1 00	@ 1 70
New Potatoes, ₱ cental	1 25	@ 2 00
Sweet Potatoes, ₱ cental	75	@ 90

Fresh Fruits.

Cherries were in fair receipt, but included few which were sufficiently choice to be eagerly sought after. In a small way some ripe Purple Guigne brought $2.50@3.00 per 10-lb. box. For White Cherries $1.50 per 10-lb. box was a quotable extreme, and there were some small and unripe which were difficult to place at 75c per box. Strawberries arrived quite freely and market was lower, although for stock which was ripe and clean there was a good demand. Apples continued to be offered in considerable quantity, mostly out of cold storage, but did not receive much attention.

Apples, fancy, ₱ 50-box	2 00	@ 2 25
Apples, good to choice, 50-lb. box	1 50	@ 2 00
Apples, fair to good, ₱ box	1 00	@ 1 50
Cherries, Black, good to choice, bx	1 50	@ 2 00
Cherries, White, good to choice, bx	1 00	@ 1 25
Strawberries, Longworth, ₱ chest	7 00	@ 11 00
Strawberries, large var., ₱ chest	3 00	@ 7 00

Dried Fruits.

Movement is not very brisk, but stocks of most kinds are too light to admit of

any active trading. Market for Apricots is a little easier in tone, owing to dealers looking for a big yield, but in this they may be disappointed. New are quoted by the selling interest at 7@7½c, for July delivery, with easier figures predicted for August. Pears will undoubtedly be a light crop. Of Peaches and Prunes it is too early to state much definitely, although Prunes are reported promising light in the Santa Clara valley. Choice 40–50 Prunes are scarce; 50–60's and 60–70's are still plentiful; small sizes are not in heavy stock and are being steadily held. The steamer Umatilla, sailing Saturday last for British Columbia, carried 14,300 lbs. dried fruit, including 10,000 lbs. Peaches and 2500 lbs. Pears. Moderate shipments of assorted lots of dried fruit were made to the Hawaiian Islands, to the Orient and to Central America.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5 @ 5½
Apples, extra choice to fancy, 50-lb boxes	6 @ 7
Apricots, Moorpark	10 @12
Apricots, Royal, good to choice, ℔ lb	8 @ 9
Apricots, Royal, fancy	10 @11
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	7½@10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes, 1¼@1¼c; 40-50s, 4¼@4½c; 50-60s, 2¼@2¼c; 60-70s, 1¾@2c; 70-80s, 1½@1¾c; 80-90s, 1¼@1½c; 90-100s, 1@1¼c; small, ⅞@1c.

COMMON SUN-DRIED.

Apples, sliced	3½@ 4½
Apples, quartered	3½@ 4½
Figs, White, in bulk	2 @ 2½
Figs, Black	2½@ 4

Raisins.

In quotable values there are no changes to report. The market is quiet. Steamers sailing the past week for British Columbia, for Asia and the Hawaiian Islands took small quantities. Owing to frost damage, the crop of Sultanas and Thompson's Seedless will be light in the San Joaquin Valley.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2 crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4-crown, 20-lb box	— @1 30
Dehesas, 20-lb box	— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3½c
3-Crown Standard	4 @4½c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

Oranges were in reduced receipt and loss from decay was heavy. For sound fruit the demand was good and prices averaged better than previous week. The smaller sizes of Navels continued most in favor. Lemons were in fair request, and while the market was not quotably higher, there was an improved tone. Limes were in reduced supply and held at an advance.

Oranges, Navels, choice to fancy, ℔ bx	1 75 @2 25
Oranges, Navels, fair to good, ℔ box	1 25 @1 50
Oranges, Seedlings, ℔ box	1 00 @1 25
Oranges, Cal. Tangerines, half box	1 25 @2 00
Oranges, Blood, ℔ box	— @—
Lemons, California, select, ℔ box	2 25 @2 50
Lemons, California, good to choice	1 50 @2 00
Lemons, California, fair to good	1 00 @1 50
Grape Fruit, ℔ box	1 50 @3 00
Limes, Mexican, ℔ box	4 50 @5 00

Nuts.

Business is of light volume. There are no large stocks of either Almonds or Walnuts; they are mostly in few hands and are being steadily held.

Chestnuts, Italian, ℔ lb	— @—
Nonpareil Almonds	13 @16
Ne Plus Ultra Almonds	11 @14
Languedoc Almonds	8 @11
Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

No evidence of much doing in the wholesale wine market. Dry wines of last vintage are quoted at 14@17c per gallon, San Francisco delivery. The outlook is for a light yield of grapes this year in the leading dry wine districts of the State. Prospects are favorable for improved figures being realized on choice old dry wines the coming year. Sweet wines of 1904 continue to be quoted at 25c per gallon, winery delivery, 27½c per gallon in a jobbing way, San Francisco. Receipts of wine at this center last week were 254,925 gallons, and for previous week were 230,770 gallons. The steamer City of Sydney, sailing April 15th, carried 73,270 gallons and 86 cases, including 70,358 gallons for New York.

CHERRIES AND PRUNES LIGHT.—Suisun special to Sacramento Bee: Orchardists in the Vaca and Suisun valleys report a light cherry crop. The Royal Ann variety, which was heavy last year, will be exceptionally light. It is also stated that the prune crop will be light compared with previous seasons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	70,156	3,691,921	4,537,145
Wheat, ctls	35,417	2,452,712	2,040,089
Barley, ctls	34,240	3,131,591	5,022,701
Oats, ctls	883	803,402	806,061
Corn, ctls	16,486	213,416	138,073
Rye, ctls	900	47,485	49,296
Beans, sks	5,316	589,863	668,925
Potatoes, sks	19,860	1,114,328	1,117,924
Onions, sks	909	118,228	140,053
Hay, tons	2,745	153,111	147,246
Wool, bales	4,910	52,107	42,775
Hops, bales	290	39,026	29,266

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	46,120	2,437,304	2,882,520
Wheat, ctls	314	804,031	903,372
Barley, ctls	4,282	1,828,921	3,998,595
Oats, ctls	151	76,174	20,860
Corn, ctls	6,321	93,574	16,459
Beans, sks	373	46,602	35,842
Hay, bales	2,195	210,692	207,516
Wool, lbs	....	830,690	1,954,256
Hops, lbs	11,176	371,737	578,220
Honey, cases	41	2,171	4,451
Potatoes, pkgs	2,528	99,269	98,581

CHANGE METHOD OF HARVESTING.—Willows Journal: There is a growing feeling among our farmers that the big harvesters tend to foul the land, and several small farmers over in the river section have ordered binders for this season. There are several reasons why the binder will, in the long run, prove more profitable: The cost to harvest with a binder is about $2.50 per acre, with the harvester $1.75. In cutting wheat while in the "dough" state and curing it in shocks, the straw is worth nearly one-half as much as common hay; this turned into beef or mutton will more than pay the difference in the cost of harvesting. Again, waiting until the grain is ripe enough to harvest and thresh, there are many chances of losing from one to five bushels per acre by high north winds. This loss will be avoided entirely by the use of binders, so upon the whole it is perfectly safe to say the binder will in a measure supersede the harvester on all the small farms as soon as practical bookkeeping is injected with the wheat growing business.

RECIPE FOR KILLING GOPHERS.—Lodi Sentinel: A correspondent sends in a remedy for gophers. This is the recipe: "Take powdered arsenic, which is sweet, and with it use a bit of strychnine; mix and spread on a board or shingle. Use an old knife and with it slit a lot of good, big raisins, a carrot, beet, potato or other succulent vegetable. Insert in each and every raisin individually with the knife a bit of poison. From the poultry yard take the feathers of the fowls, dip these in a bottle of oil of rhodium, of which all animals like the odors, and which is sure to attract rodents. Dig down to the gopher's main channel, fill it liberally with the poisoned raisins and vegetables, leaving with this poisoned bait the feathers perfumed with the oil of rhodium. Then close the hole."

WALNUT GRAFTING.—Santa Rosa Republican: George Payne, an expert walnut grafter, has arrived in the City of Roses to enter the employ of Luther Burbank for a short season. Mr. Payne comes from San Jose, where he has previously done work in this line for Judge S. F. Leib. The grafting of walnuts is a delicate task. In grafting walnuts the scions have to be gathered at a certain time and the sap must be in an exact condition. Mr. Payne has had splendid success in this work. There are a number of new varieties of walnuts coming in at the Burbank experimental farm, and it is necessary that these be attended to at once.

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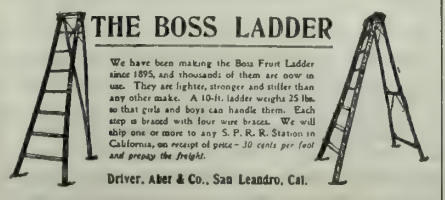
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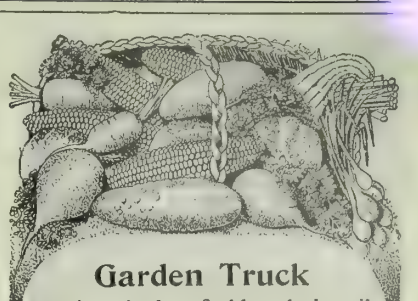
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THE DAIRY.

A Test of Calf Rations.

By A. L. Haecker of the Nebraska Experiment Station.

Through the recent general use of hand separators by farmers and dairymen of the State the interest in calf rearing has been greatly increased. In the fall of 1901 an experiment was planned to test some rations rich in fat to replace the absent butter fat in skim milk. Owing to complaints from feeders that flaxseed meal was often difficult to obtain, it was thought advisable to use the commercial oil meal for one ration, this being a product easy to procure in almost any part of the country. The two other feeds were by-products of glucose factories, corn germ oil meal being one and corn oil the other.

The corn oil is pressed from the corn germ and resembles a light oil in appearance, but has a strong flavor. The corn germ oil meal is what is left after the oil has been pressed from the germ. This meal contains about 10% fat and resembles corn meal, but has a more uniform grain and a higher per cent of digestible nutrients.

Market Prices of Foods Used in the Experiment.—The market prices of foodstuffs used in the experiment are here given, and represent about the average for eastern Nebraska during the two years:

Whole milk, $1 per hundred.
Skim milk, 15 cents per hundred.
Oil meal, $25 per ton.
Alfalfa hay, $6 per ton.
Pasture for calves, 10 cents per week.
Germ oil meal, $27.50 per ton.
Corn oil, 6½ cents per pound.
Shelled corn, 60 cents per hundred.
Oats, 90 cents per hundred.
Bran, $15 per ton.

The Three Groups.—For convenience the calves are arranged in three groups, each group including eight calves fed a certain ration. Nearly two years were required to complete the test, owing to the necessity of securing a number of calves nearly the same age and the convenience in feeding one group at a time.

Each calf in all groups was weighed at birth and allowed to suck its dam for two or three days, or until it was in a strong condition and the cow's milk fit for use. The calf was then taken from its mother and fed on whole milk for ten days or two weeks, at which time it was gradually changed to skim milk. This changing required several days, by increasing the skim milk and decreasing the whole milk gradually.

The rations of whole milk for the first two weeks were about five pounds to a feed, while the second two weeks, when the calf was on skim milk, six or seven pounds were given. During the second period the calf received eight pounds at a feed, and from then on ten pounds were given.

At six weeks old the corn and oats were fed ground and the calf generally taught to eat the feed. The rations were given in such quantities as the calf would clean up. Hay or grass was supplied at all times, and the animals were given free access to salt and water.

Linseed Meal.—In group 1 at the time the calf was changed to skim milk a little linseed meal was added to the milk and stirred in. The meal was fed in small rations, starting with a teaspoonful and increasing until the fifth period, when the animal received about one-half teacupful at a feed. The linseed meal was stirred in the milk for the first three months, after which it was mixed with the corn and oats and fed after the milk ration.

Germ Oil Meal.—The germ oil meal lot, or group 3, was fed about the same in every way as group 1, corn germ oil meal being used instead of linseed meal.

Corn Oil.—The corn oil lot, or group 3, was given corn oil in place of the oil meals of the other groups. Some difficulty was experienced in using this feed. It was first attempted to produce a milk having about a 3% fat, by simply pouring in the oil and stirring to mix it with the milk. This could not be done, as the oil was much lighter than the milk and would not mix by such a slight agitation. A twenty-gallon barrel churn was then used to emulsify the oil and milk by churning. This was successful, and a very palatable emulsion could be made by churning from four to five minutes. The emulsion was not lasting, but would hold for about twenty minutes, which was long enough to last while the calves were being fed.

It was found necessary to make a 2% mixture instead of 3%, as the food proved too laxative, and even at the lower per cent it was difficult to feed.

Remarks and Conclusions.—From the results obtained in this experiment it is safe to say that linseed meal is not only an excellent food for replacing butter fat in skim milk for calf feeding, but also an economic food in comparison with others.

Germ oil meal gave about as good results as linseed meal and may be recommended as a calf food.

Corn oil in this test proved too expensive and required too much work for profitable calf rearing. A 2% oil mixture proved rather laxative for obtaining the best results.

The calves fed linseed meal and germ oil meal were in good condition at the end of the test and most of them were weaned.

The cost of rearing the calves varied from $8.35 to $12 for the twenty-four weeks of the feeding experiment.

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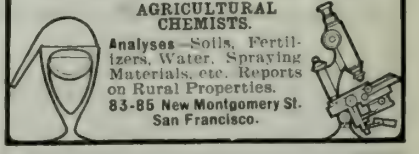
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Patrons of Husbandry.

After the Increase Prize.

During the past two months there has been unusual activity among the Sonoma county Patrons of Husbandry. District Deputy D. M. Winans, as stated in his letter in our columns last week, has organized several new Granges, and the membership of Petaluma Grange has been increased by sixty-eight. The number of members on January 1, 1905, was sixty-five, so that this Grange now has a roll of 133. There are eighteen more applicants to be initiated. The State Grange has offered four money prizes, aggregating $100, to the Granges making the greatest increase in membership. From the figures given above it will be seen that Petaluma Grange is making a strong effort to gain the first prize, which is $50 to the Grange securing the highest percentage of increase over 100% of its membership on January 1, 1905. It will be seen that Petaluma Grange now has twenty-one members over 100% of its old membership.

Santa Rosa Grange.

Brother E. D. Sweetser of the committee named to take up the matter of securing the locating of the University Farm in this county, reported progress. There was a large attendance of the members and Thomas J. Pilkington, the Master, presided.

Santa Rosa Grange will confer the third and fourth degrees at a meeting to be held on April 22. At noon there will be the usual harvest feast.

Other business was transacted on Saturday, including the obligating of two members.

At the last meeting of San Jose Grange, Brother Petit acted as Master. After several talks and reports, part of the lecture hour was turned over into a song service, after which the question of Chinese exclusion was brought up and discussed. The general opinion of the Grange was that the importing Chinese labor to dig the Panama canal was directly opposed to the exclusion project. D. C. Harvey visited the Grange this morning and told of his trip East, made recently, and of his views upon the Eastern method of marketing Western products. Professor and Mrs. C. W. Childs withdrew from the local Grange in order to enter the one at Oakland, as they will shortly remove to that city. At the next meeting Mr. Sanders wil tell of winter agriculture in the Hawaiian Islands.

Sale of Lands for Less Than Taxes Due.

In compliance with the Sanford Act passed by the last Legislature affecting the sale of real property forfeited to the State for taxes, the State Controller has sent out to the county tax collectors of California a circular letter giving explicit directions in this regard.

The new Act provides that if "the Board of Supervisors of the county, or city and county, in which any such property is situate, shall, by resolution entered upon their minutes, declare that, in their judgment, the property so owned by the State, and particularly described in said resolution, is not at that time of value great enough that it can be sold by the State for a sum equal to the amount of all taxes levied on said property, and all interest, costs and penalties and expenses up to the date of such sale, and that it would be to the best interest of the State to sell the said property for a sum to be stated in said resolution less than the sum above named, upon receipt of a copy of said resolution, certified by the clerk of said Board of Supervisors, the State Controller may thereupon, by written authorization, direct the tax collector of the county, or city and county, to sell the said property so described in said resolution, for a sum not less than the sum stated in said resolution, together with the expenses of sale. The expense of giving the notice herein required shall be a charge against the county."

This proviso is inserted in the old statute to fit cases where the value of the property has fallen below the sum of accrued taxes due the State. At present the State holds a great deal of land which cannot be sold for enough to clear the taxes. In "boom" towns and mining camps realty values often take a sudden slump, with the result that large holdings are frequently forfeited and the State could not sell them for even the taxes. Under the new law, county supervisors may appoint an appraiser to place a value upon such property regardless of the amount due in taxes upon it to the State, and then the board may, by resolution, fix the appraiser's valuation as the minimum price for which the property may be sold. By permission of the State Controller the property is then to be sold.

Threshing Wheat in Oregon.

According to the Portland Telegram, threshing is now quite general throughout the wheat belt of Oregon, something never heard of before at this time of year. Two factors in the development of the wheat and stock country are responsible for this condition of affairs. A year ago last winter, throughout the stock country forage became so scarce that there was a loss of stock. Last summer the stockmen prepared for a hard winter by cutting immense quantities of wheat hay, fearing the alfalfa would not suffice. The winter, however, was very mild, and but little feeding was necessary. The price of wheat soared to the dollar neighborhood. Consequently, when the spring opened, stockmen found themselves with large quantities of wheat hay on hand, and wheat bringing 80 cents a bushel. They are now running this hay through the threshing machine to get the wheat, which they will sell for a handsome profit. As a general thing, this hay does not carry heavy values in wheat, but with the price at the present figure there is a profit in threshing it. Reports received at the industrial headquarters of the Oregon Railway & Navigation Co. say this condition is quite general in the wheat belt. The weather has been very fair during the past two weeks, and hundreds of tons of wheat hay have passed through the separators.

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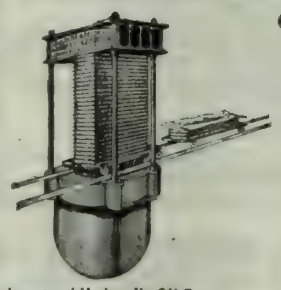


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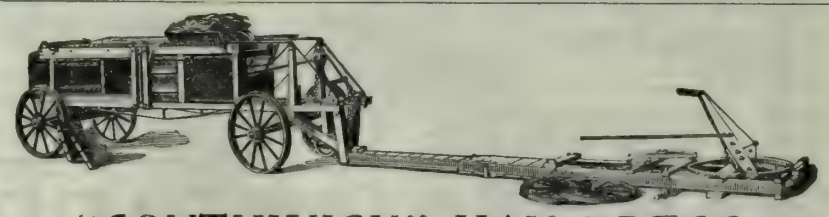
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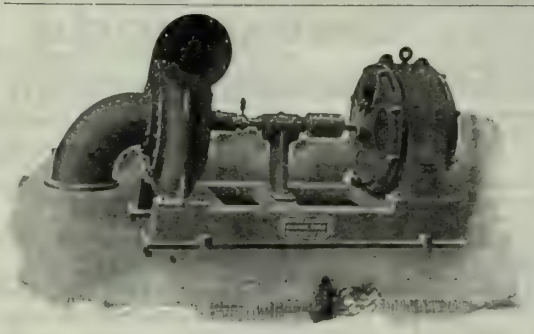


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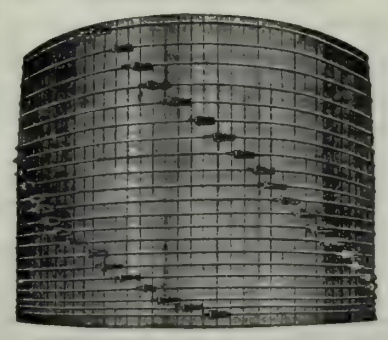


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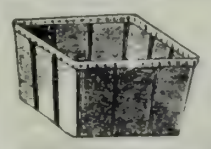
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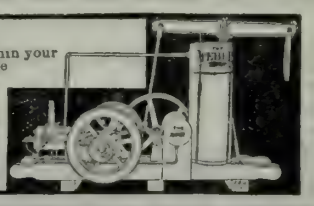


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THE FIELD.

The Value of Stable Manure.

In answer to a query we gave rather a bear view of the value of stable manure under certain conditions. We did that because we are sure that the value of this material is often exaggerated, and people either pay too much for it or spend too much in transporting it. A review of the whole subject prepared by an Illinois melon grower for the Orange Judd Farmer is as follows:

In the melon growing districts of southern Illinois most growers use more stable manure than is made upon their farms. Some of this is shipped in from Chicago, St. Louis and other cities. Much more is drawn from livery stables and other barns in the small towns and cities near which the farmers live. Some of this may be had for the drawing. Most of it is sold at so much per load, without regard to the size of the load or the quality of the manure. In the town near which I live, 25 cents per load is the price, whether the manure is from stables where sawdust, straw or hay is used for bedding, or whether no bedding is used. With this standard price and great variation in quality, the question arises: How great a distance can a farmer afford to haul manure?

If the manure were solid horse dung and urine without bedding, from horses fed heavily on grain, a ton of it should contain fertilizing elements worth about $2.50 at the price the same elements would cost in the form of commercial fertilizers. However, in estimating the value of manure, the value of the elements is generally discounted, sometimes as much as 50%. Even at that rate, a ton of solid dung and urine would be worth $1.25.

If half bedding by weight, a ton of such stable manure would be worth 62½ cents for the fertilizing elements in it, besides the humus and fertilizer contained in the bedding, making it worth considerable more than that for improving the soils of most farms. Providing the hauling can be done when it does not interfere with other work, or at a nominal hire, farmers can afford to pay 25 cents per ton for such manure.

To Find the Quality of Manure.—It costs me 50 cents a load to get manure hauled and dumped into a pile. Using my team, a man at $1 a day in winter will draw and spread four loads per day and care for the team. Before deciding whether it would pay to buy at 25 cents a load, such manure as I could get, the first thing to determine was what per cent of it was dung; the second, how much a load weighs. The first I had to guess at; I called it half and half by weight. I then weighed the loads as drawn from a certain stable for a month; as showing how they varied, the weights of five loads are given. These were all the same size, loaded by the same man and weighed upon the same scales. The net weights were 1850, 3100, 2500, 1600 and 2220 pounds. The load weighing 3100 was drawn the day following a heavy rain, the one weighing 2500 contained a good many coal cinders; evidently the man in cleaning the stable that day went to solid foundation in every stall — there were no floors in the stable. The one weighing 2220 was drawn after hardwood sawdust and was used for bedding.

After weighing manure for a month I decided that, discounting the value of the fertilizing elements in a ton of stable manure 50%, it was paying a premium on its value if we paid 25 cents per load and the hauling cost 50 cents. Nevertheless, I have continued drawing, believing the benefit to the land from each load was more than if commercial fertilizer costing 75 cents was applied. The physical condition of the soil, as well as the amount of fertilizing elements it contains, has much to do with its productiveness and humus, wonderfully improves the physical condition of most soils as well as adds some elements of fertility.

Old farmers in this locality, who have been hauling stable manure for several years, consider every load that they get upon their land worth $7. One enthusiastic liveryman who sells every load he wheels out of his stable, declares "every $2 worth of manure you get upon your land increases its productiveness $25 worth." At his price that would be eight loads. The land he referred to is not fertile prairie soil, but post oak flat.

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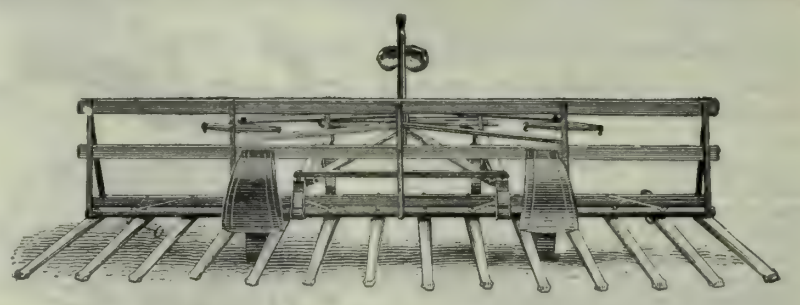
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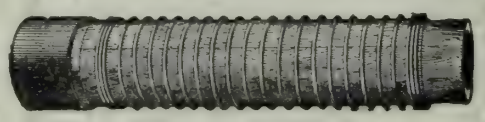
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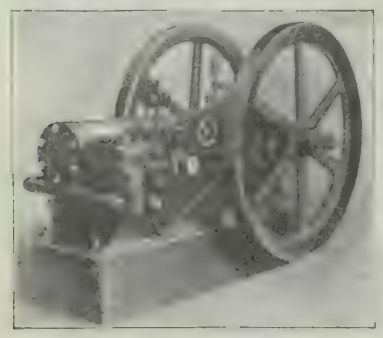


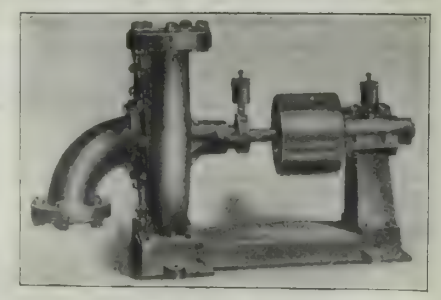
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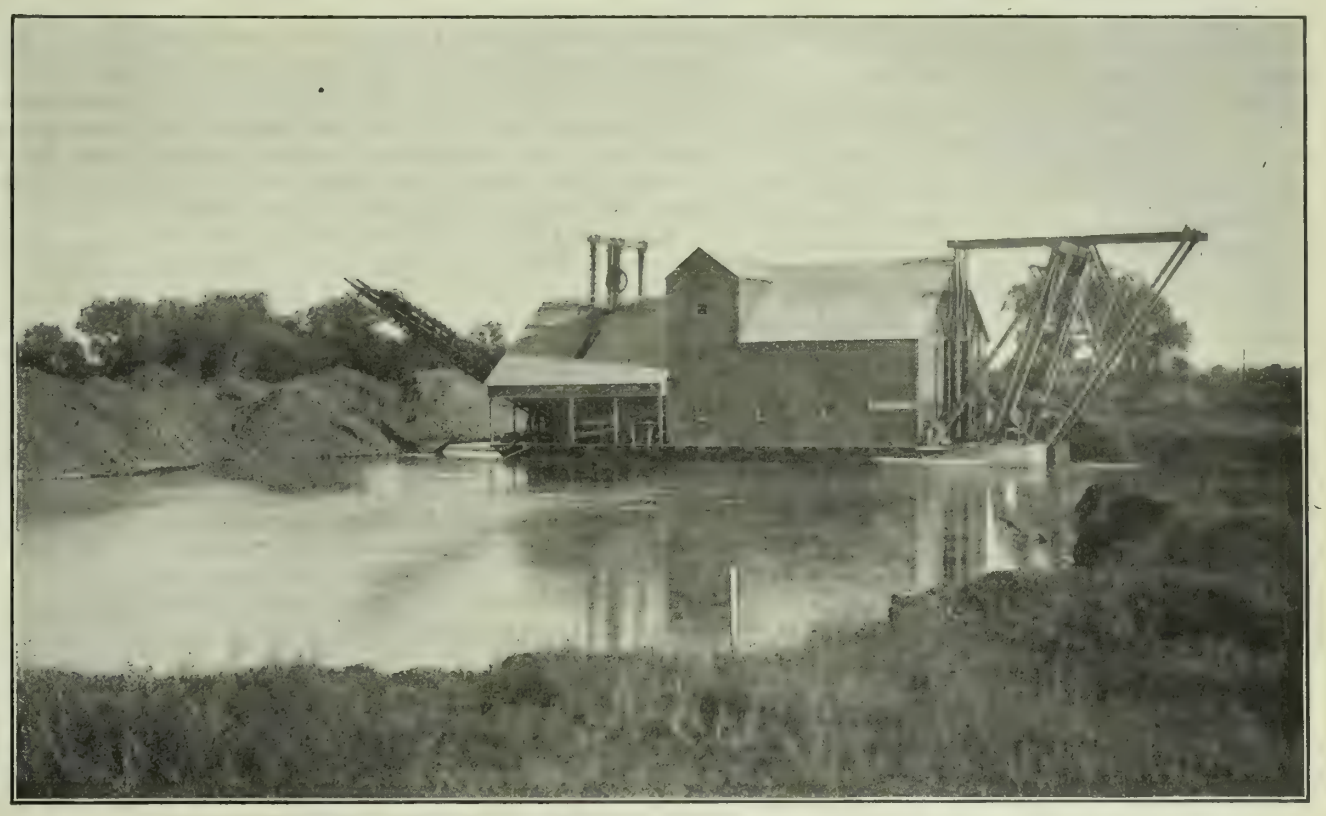
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Vol. LXIX. No. 17. SAN FRANCISCO, SATURDAY, APRIL 29, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

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Land Destruction.

We choose a pair of pictures for this page directly antipodal to those which occupied similar place last week. They are antithetical both in methods and results. The landscape architect is the man who does his best to reproduce for us the beauties of nature amidst the environments of industry and artificiality. His work, if well done, has a tendency to conceal the scars which industry is forced to make upon the face of nature. His chief work is then to plant successfully and tastefully so that adornment may reduce incongruity and desolation. Directly opposed to such an effort is the pursuit of an industry which promotes desolation, which destroys natural beauty, which transforms into possible centuries of barrenness meadows which have been for centuries productive. We are not undertaking to argue the morality of the process nor to set forth the view that what is now gained by destroying the land will be many times lost by the State in destruction of taxable value. All we have in mind in the moment is to set the fact of destruction over against the effort to beautify and improve which we had under discussion a week ago, and to show the agencies by which the former is being done.

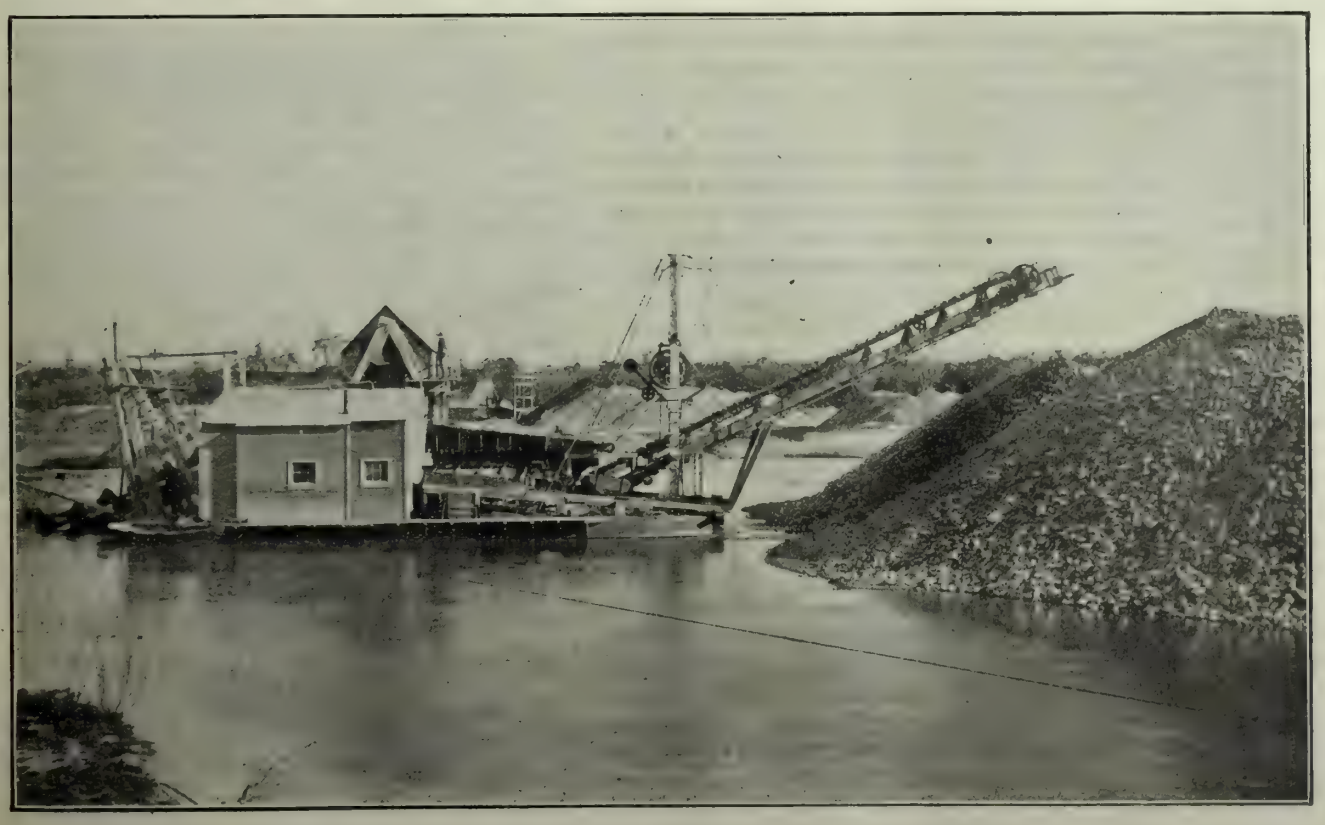


Gold Dredger in Operation on the Feather River, Oroville District, Cal.

Some months ago we had views of the dredgers which were advancing into the fertile meadows and orchards on Feather river and casting out great masses of bowlders, cobbles and gravel to occupy their places. The pictures on this page show two of these great land destroyers at work—with beauty and fertility in front of them and high heaps of rubbish in their rear. A recent account shows that in no State are there so many dredgers working as in California, and at no place in California are there more than in the Oroville district, where to-day twenty-eight are running, two about ready to run and at least four more contemplated. The other fields in California invaded by dredgers are the following: Yuba river, about 12 miles above Marysville; Bear river, near Wheatland; American river, below Folsom; Calaveras river, at Jenny Lind; Sacramento river, above Redding; Clear creek, a tributary of the Sacramento river, below Redding; Trinity river, at Poker Bar and at Trinity Center, and at Callahan, Siskiyou county, Scott river.

A gold dredger consists essentially of a boat provided with appliances for the handling of the boat, digging the material in front of it, disintegrating and washing it, saving the gold contained in it and delivering the debris in the rear in such a manner as not to interfere with the movements of the boat.

These powerful machines are different from the old slow-going dipper dredger which plunges a single bucket out of sight and slowly hauls it up, swings around and dumps at a distant point. Such machines are practically obsolete, and, instead of them, there are new styles with great runs of buckets which chase each other into the water and out again on endless chains, each bucket bringing its fill of earth sometimes from a depth of 60 feet from the water surface. The capacity of these dredgers for destroying land and piling up ugly rock piles is wonderful, for in some of them the bucket chain moves from 42 to 52 feet per minute in spite of its colossal load of earth and rock.



Gold Dredger Working Inland, Showing Stacker for Piling Rocks in the Rear.

It is idle to discuss the bearings of this business. It is enterprise to get the gold. The law gives the owner the right to destroy or to sell his land for destruction unless it can be shown that it endangers the property of others. Probably all that can be done is to use all possible pressure to induce the destroyers to make their work as neat and inoffensive as possible.

Such an effort is being made by the residents along the American river who urge that the debris piles be leveled so that they may in time be concealed by wild vegetation. If obligation to do something in this line should be recognized by the miners, it would be a public gain; and if some practical method could be devised, so that the rocks could be covered with river sediment, the evil which now seems so distressing could be lessened.

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SAN FRANCISCO, APRIL 29, 1905.

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The Week.

The grazing animal has the start of others this spring: the continued moist and cool weather suits grass and grain better than other crops. Fruit trees in many places still look chilly and many other plants would enjoy a little more heat. The outlook for fruits is rather obscure, the surest observation is probably that the prune crop will be very short and prices will probably be high enough to discourage organization, for there is nothing like a high price to discourage co-operation. Still really it is just the time to do the best work in that line, for it is easier for growers to have their own way with a short crop, and, having learned how to act, they can do better with a large one when it comes along.

Deciduous fruit shipments to the East are beginning with the cherries in carloads and, as we have stated before, the chance at the East will probably be as great this year as our supplies will meet because it does not look as though there would be any good fruit to go to waste. Citrus fruit shipments continue in good shape and the outlook is more interesting because the Interstate Commerce Commission is disposed to take up an initiative in the matter of rates. This commission has filed a complaint in the United States Court at Los Angeles in which it is charged by complainant that the rate of $1.25 a hundred pounds for the transportation of oranges in carloads from shipping stations in southern California to destinations east of the Missouri river is excessive, unjust and in violation of the provisions of the Act to regulate commerce. It is really quite interesting to have got the Government commission into action against the railways. It may be a better way to secure the rights of the deciduous fruit shippers to invoke the Interstate Commerce Commission than to knock the whole State with the hysterical efforts which have been followed hitherto. It is certainly the business of this commission to adjust things between the shippers and the transportation companies and they seem disposed to be effective when appealed to.

Though spot wheat is not quotably lower, futures are lower and in weak tone in sympathy with the drop and softness at Chicago. One ship has been chartered abroad at 23s 9d for wheat or barley for August loading. There have been no clearances, for lack of available supplies here. Barley is off 50 cents per ton, and futures are also lower. Oats and corn are weak, except for fancy grades. Beans are quiet and unchanged but steadily held. Bran and middlings are weak, with considerable supplies from the north and slack demand. The closing of the mills will probably improve the condition. Hay is as before, but it looks as though the bottom had been reached; holders of choice hay are hanging back from the present market. Lamb is lower and pork firmer; other meats are easy. Butter has been very active and firm, but the Eastern demand is lightening and the outlook is easier, though prices are unchanged. Cheese is shading prices a little. Eggs are still holding up and sought for storage. Large, fat old and good young fowls hold up well, though the demand is less active, and lower grades of poultry are weak. Potatoes are quiet and weaker—new are more plentiful and old neglected. Onions are weaker—some new green taking the place of old, and ripe reds not far off. Apples are still in, but neglected: a carload of red apples came up from Los Angeles and sold at $1 per box. Oranges are in better supply, but generally low grade—all are easy except fancy. Lemons are quiet and unchanged. A few blackberries have come from Los Angeles county. Cherries are lower; receipts, including Black Tartarian, are freer. Strawberries are plentiful, but rather poor and dirty. A carload of tomatoes is said to be en route from Florida, a few crates having arrived by express. Asparagus is easier, and in heavy receipt, but canners are active. Prunes are stiffer; quite free shipments are going out and the outlook for a small crop is raising values. Futures on dried apricots are still talked at 6¾@7 cents. The nut outlook is mixed and uncertain. Honey is quiet and easy; 218 cases have gone out to Europe. Hops are held at 30 cents and buyers are threatening proceedings against a "trust." Wool is no lower; interior buying is still active, with reports of Sacramento valley at 25 cents.

It is natural to have great respect for what has the word Government attached to it, and it is well that it is so in a country where the people are the government, but possibly the passion for the word may be carried too far. For example, the Women's Council at Sacramento is commendably energetic for street improvement and considered itself very fortunate in securing a donation of trees for street planting from Washington on condition that the council should pay all expenses of packing, shipping, etc. We do not know that these ladies nor the men who generously helped them to get funds have any idea that there is very great doubt whether they could not have got better trees for less cost by buying them in quantity from California nurseries. California is a vastly better place to grow young trees than Washington is, and California tree growers are as generous and patriotic a class of people as there are in the country. We believe, for instance, that the Fresno ladies got a much better bargain by contracting with a public-spirited Fresno nurseryman than they could if they had proceeded upon the basis of donated little seedlings grown at the East, which must probably be coached along some time before they will be safe to place in the eye of the small boy and the goat along the highways. But the Sacramento people feel that they have been especially honored by the gift from Washington and by so much as they exalt this gift by the same amount they knock California as the place where such things grow better than anywhere else in the country. They seem to think they have secured something very rare. This is the list: "Ulmus Americano, 150; Platanus orientalis, 200; Quercus palustris, 500; Quercus rubra, 475; Acer platanoides, 475; Salisburia adiantifolia, 200," all of which has a very pretty botanical glitter. It must be said, however, that the trees named in the list which are good for the purposes in view are not new, but are common in all our nurseries, and those which are new are not good, and that is the reason why our nurserymen do not grow them. The list includes the Eastern elm the oriental sycamore, the sycamore maple and the ginko, which are all good and common here, and they have secured two oaks which are not safe to plant here except for experimental purposes. If there could be a little more sound knowledge of trees and the best place to get them mixed up with the civic zeal of our women's organizations their planting enterprises would come nearer to showing for the grand ideas which lead to their undertaking.

QUERIES AND REPLIES.

Pea Growing.

To the Editor:—I am desirous of obtaining some information about raising green peas for market. I do not believe they have ever been raised in any quantity in this valley, but I would like to try the experiment. Where can I find any literature on the subject? I am anxious to know if the soil here is suitable. It is a sandy upland soil. Also the time for planting; how soon after planting they are ready for market; the best method of harvesting and cost of labor?—Amateur, Salinas Valley.

Our book on California Vegetable Growing treats pea growing quite in detail as it does other commercial vegetables. In order to make peas quite profitable, as they are in the district about Milpitas, in Santa Clara county, and in Niles, Alameda county, it is necessary to get an early start in the fall as soon as the ground becomes sufficiently moistened and to grow the peas as a winter crop during the rainy season, sowing different varieties at different times during the winter, so as to get a succession. Later peas can also be brought along by starting the growth in the spring and it would be well for you to begin right away on a small scale to see what you can do by April planting and then plant again in May. Near the coast with sufficient moisture in the soil it would be possible to grow peas all the year round, but on your sandy upland unless you have irrigation it is probable that you must secure the main growth during the rainy season, for peas do not like dry air, nor a dry soil. They soon begin to spindle and to be unthrifty under such conditions.

No exact time can be stated from the sowing to the marketing; that depends upon the time of the year, also upon the variety of pea. Nor is there any particular method of harvesting. Picking is usually done several times over the field, taking those pods which are ready, finally allowing the plant to ripen and a crop of dry peas is gathered from it. Cost of labor depends upon local conditions and, of course, you should ascertain whether it will be easy for you to get a sufficient number of pickers. You ought to begin this enterprise carefully with a view to ascertaining where the peas can be sold to advantage, whether your peas are likely to come when the market is scant or at its fullest supply, because much of your profit depends upon that and it is always a good idea too to see if you can make an arrangement with a canner to supply him peas and then grow the variety which is most acceptable to him. The whole subject needs to be looked into and experimented with carefully before undertaking large investment.

Sweet Clover in a Hop Field.

To the Editor:—We send some clover roots having what we think to be nitrogen producing growth among the roots. We wish to know if this is any benefit to our hops from being allowed to grow in the hills now, or should it be pulled out?—Hop Grower, Yuba county.

Although the clover which you send is a good nitrogen gatherer, there is no question but what it should be pulled out of the hills of hops before it gets any larger growth. It is one of the deepest rooting and greedy of the clovers, and the operation of its roots among the roots of the hops would tend toward the exhaustion of the moisture which the hop roots should have, and might also interfere with their development in other ways. For these reasons it should be pulled out and the ground around the hop vines brought into as good condition as possible without further delay.

This plant is the Melilotus officinalis. It is the plant which gets into the wheat fields and is very objectionable there because it imparts its strong scent to the wheat and to the flour, and lowers the price of the wheat on this account. If it makes a good winter growth in your hop yards it should be encouraged, but it should be plowed under well before it has a chance to exhaust the moisture and interfere with the clean cultivation which is desirable.

Lice in Hens' Nests.

To the Editor:—We are greatly troubled with mites in the hens' nests. Would you kindly give me some information as to how to get rid of them?—A Reader, Del Rey.

Take out and burn all the loose stuff in the nests; soak the woodwork with kerosene, oil-shooting it into

all cracks and crevices; then dust thoroughly with lime and sulphur before putting in new nest material. Do this frequently during the summer. Never let the lice become numerous. The lice-killers sold by poultry supply dealers are also effective.

Pollination of Bartletts.

To the Editor:—In the Pacific Rural Press of April 8th, you speak of the reduction of the crop by lack of pollination, etc. The Bartlett pear crop in this section will not be over 10%. I was through my pear orchard this morning, and on twelve acres I could hardly see a pear, but on another six acres, where there are other kinds like the P. Barry, Howell, Duchesse and Anjou, the crop of Bartletts is good.

I am told by a fruit dealer that in 1904 there were gathered from one large orchard of Bartletts in the northern part of this State sixty tons, and before they could get the pears to a cannery, forty tons decayed. The party cut open many of the pears and not a seed was to be found. What I want to ask is this: Will the lack of pollination weaken the constitution of the Bartlett or any other kind of pear tree so as to cause such a result?—J. T. Bogue, Marysville.

Mr. Bogue gives us a pair of hard nuts to crack, even if one of them is a pear. We never heard before of so many coreless Bartletts, except in the second crop—and in the second crop there is a large percentage of such freaks. The proposition of perishability is also the most rapid we ever heard of. We simply cannot say anything intelligently on the subject, so we simply pass that story along to those who know more than we do. As for lack of pollination reacting upon the constitution of the parent tree, we have still to be convinced that there is any reason in the claim. It would be a good deal like a youngster teaching his father to swear—it might be so, but it usually works the other way. Lack of pollination has all kinds of influence upon the offspring in the line of fruits, but we never heard it suggested before that not bearing fruit could weaken the tree—still, even that might be true. If the fact were determined it would not require much ingenuity to make a theory to account for it, but we must know first: Does it weaken the tree?

Dieback of Lemon.

To the Editor:—I am sending you a limb from a lemon tree that seems to be affected with some disease. The tree commences to die back at the top, the leaves wither, and in a few weeks the limb dies. On trees one and two years old the whole tree dies. The soil is rather heavy and a year ago the place was flooded, but water only stood on the ground for a couple of days.—Grower, San Lorenzo.

There does not appear upon the branches you sent any pest or disease which could cause the trouble which you describe. When this is the case, and dieback cannot be attributed to unthrift produced by some aggressive parasite whose work can be found upon the branches, the injury must be attributed to trouble at the root, and in your case it would seem to be owing to unsatisfactory moisture condition. The thrift of the new growth seems to indicate that there is no lack of moisture; consequently, one is forced to the conclusion that there is occasionally too great retention of it. Standing water during a period long enough to kill the root hairs, cuts off the direct connection of the tree with the soil and causes dieback of the branches for lack of adequate sap flow at the time when they need it. After this has occurred the tree may recover and send out quite a strong new growth below the wood which has failed. For this state of affairs there is no remedy except regulation of the moisture supply through drainage. The surface flooding which you speak of would not be in itself injurious, but the filling of the air spaces in the soil and the retention of the water for some period after the surface is free could accomplish the injury.

Seedling or Grafted Walnuts.

To the Editor:—I have been reading a little about the English walnut and am trying to find out which is the better way to produce a good crop of nuts—by grafting and budding the tree or by sowing selected nuts. On February 9th I wrote to one of the oldest nursery firms in the central part of France about it and this is the reply: "We do not multiply our walnuts by grafting, but sow the nuts of all the different varieties and believe that this is the very best way to produce true varieties, which is quite noticeable in our cultures. The grafted walnuts do not grow well and do not produce the true varieties, and the production is very difficult, and where they grow the grafted walnut it produces only 30% of a crop."—J. T. Bogue, Marysville.

What Mr. Bogue quotes about the French walnut growers depending upon seedlings rather than on grafting will bear discussion. Perhaps Mr. Gillet can tell us something about it. We have looked upon the grafted walnut as producing a smaller tree but freer in bearing and producing well, according to its size, of choice, uniform nuts, just as the budded orange tree does of oranges. From the horticultural point of view, there is no advantage in having very large trees and, if we are not mistaken, California experience is that the large seedling trees bear less to the acre than the smaller grafted trees. What is the observation of others?

Peanuts or Pops.

To the Editor:—In my quest for the best place in California to grow peanuts I have had a great many experiments made in all parts of the State—principally in the San Joaquin valley, as the climatic conditions there seemed to me more favorable than other sections. At Atwater, where they grow so many sweet potatoes, I found that the nuts did not fill well, in many instances not at all; a large, prosperous, heavily loaded vine on examination would be found to have scarcely a kernel to its credit. At different times in going up and down the valley on this quest, I have been told of similar occurrences by others who had tried a few peanuts in their garden. In many instances, however, they have done well. Now this lack of filling cannot be due to climatic conditions, as they fill well on some land under the same climatic conditions, and I do not think it due to lack of "nitrifaction," as at Atwater I examined the roots carefully and have never seen roots more heavily covered with nodules. The Spanish nuts filled everywhere tried; they seem to be less particular as to soil and treatment. I found none of this variety at Atwater that were not well filled.—Grower, Merced county.

With reference to the prevalence of "pops," we can only say that investigations in the Southern States seem to indicate that such a condition is reduced, if not prevented, by the use of lime as a fertilizer on ground to be used for peanuts. This seems to be so clearly shown by the experience at the South that lime fertilizers are recommended whenever this trouble occurs, but there are at least two reasons why this prescription would hardly seem to hold in California—first, California soils are notably supplied with lime naturally and the light loam which would be best for peanuts is particularly limey naturally and least likely to be benefited by the addition of it; second, your own observation is that one variety filled everywhere and another variety did not. This would work against the lime prescription.

We are inclined to believe, although we have no experimental data on which to base it, that the behavior of some varieties may be due to the lack of pollination, and this may be a defect which one variety would show under certain conditions and not another. It might also be due to the occurrence of a hot, dry wind unfavorable for pollination, which might strike one variety at a delicate time and not another. In that case one variety would fail and the other would fill well. Is it not probable, however, that as in the case of some of our tree fruits, some varieties are by nature disposed to set fruit well under several different conditions, while others are too shy and unsatisfactory even under conditions which seem most favorable? The whole matter is exceedingly important. We shall be glad to have observations from peanut growers on the subject.

Origin of Thompson's Improved Navel.

To the Editor:—I see that the fiction in regard to the origin of "Thompson's Improved Navel" orange is still current. It is perhaps time that the real fact should be stated. Let no one be deluded in supposing that any one ever succeeded in producing a new fruit in that way—by growth from split buds. As both the parties are now dead, the truth can do no harm. Thomas Bray, a mechanic, owned a place adjoining Mr. Thompson's at Duarte, and he told me that Mr. Thompson told him that the variety in his nursery was all budded from one tree in his orchard that bore particularly fine fruit. At that time he made no pretence of any other origin than that. Mr. Thompson deserves credit that far—that he propagated and disseminated this type of fruit, as any one else could have done, but no more than that. I might also say that it has not been the success that was hoped for; the straight Washington Navel is better.—W. N. Adams, Pomona.

This is the first statement of the origin of this variety tracing to Mr. Thompson other than he himself made of split budding and consecutive use of different stocks. The matter is important. Who else knows anything about it?

Pigs and Melon Seeds.

To the Editor:—They tell me that if pigs are turned on citron or pie melons they eat too many seeds and that they act on the kidneys too much and kills them. Is it so, and is there no remedy for it?—P. N. W., Kings River.

Who knows? We know that the common opinion about pumpkin seeds being injurious to cows is largely wrong. How is it with pigs?

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending April 24, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Cool, cloudy weather prevailed most of the week, with high temperature at the close. Light rain fell in all sections Tuesday and Wednesday and was beneficial to grain, grass and hops. Grain is in good condition, but its growth is rather slow, owing to cool weather and absence of sunshine. Prospects continue good for large crops of grain and hay in nearly all sections. Hops are making excellent growth and looking well. Green feed is plentiful and stock are in prime condition. Vineyards appear thrifty and uninjured by recent frosts. The first full carload of cherries was shipped from Sacramento to New York on the 22nd, being about two weeks earlier than in any previous season. A carload of strawberries was shipped from Florin the same day. The pear crop will be the lightest for several years, but other deciduous fruits and berries will probably yield heavily. Peaches are unusually heavy in Sutter county.

Coast and Bay Sections.

The weather was generally cool and cloudy during the week, with frequent light showers in nearly all sections. The rain was beneficial to most crops and caused but little damage to early fruits. Grain and grass made fair growth and are in excellent condition, with indications of very large crops in all sections. Hops are looking unusually well and growing rapidly. The acreage in beets and potatoes is being increased in the vicinity of Salinas. Haying is progressing in many places. Pasturage is plentiful and stock are looking well. Vineyards are in excellent condition. Deciduous fruits are advancing quite satisfactorily and prospects are good for large crops, though pears and prunes are reported very light in some places.

San Joaquin Valley.

Generally cloudy weather, with frequent showers, prevailed during the past week. A thunder storm, accompanied by heavy hail, occurred at Sonora Saturday evening; the hail did considerable damage to fruit trees. The rain was very beneficial to the grain, fruit and grape crops, although there is complaint of rust in wheat in some localities. Oats and barley are heading out. All kinds of deciduous fruits are developing rapidly and good crops are generally expected. Peaches are reported light in some sections. The almond crop will be large. Garden truck is reported in good condition. Green feed is plentiful and stock are healthy and in excellent condition.

Southern California.

Cool and partly cloudy weather prevailed most of the week. Frequent light showers occurred in portions of the southern districts, but caused no damage except in retarding haymaking. Grain is generally in good condition, but would be improved by warm, clear weather. Alfalfa is making good growth. Barley is affected by rust in some places, but a fair crop is probable. Sugar beet planting and thinning are in progress. Green feed is plentiful and stock are doing well. Orange picking is progressing rapidly and the trees are heavily laden with new bloom. Deciduous fruits are advancing and most varieties look thrifty, though apricots are reported light. Vineyards are in excellent condition.

Eureka Summary.—Weather conditions continue favorable. Grass and grain are growing nicely. Prospects for heavy fruit and berry crops were never better.

Los Angeles Summary.—Rain in the northern section was favorable for bean planting. Grain is doing fairly well, but warm weather is needed to make good crops. Early sown grain is heading. Present indications are for about two-thirds of a crop of deciduous fruits.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, April 26, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the week.	Minimum Temperature for the week.
Eureka	.07	31 27	62.52	42 30	60	46
Red Bluff	...	31 78	30 81	24 20	88	42
Sacramento	.07	19 55	16 81	18.64	78	44
San Francisco	.49	21.40	20.29	21 87	64	50
Fresno	.12	10 52	7 72	8.16	84	42
Independence	T	3 78	2.57	3 51	76	36
San Luis Obispo	.22	21.25	16 57	19 45	68	44
Los Angeles	T	18 54	8 72	15 75	70	46
San Diego	.10	13.84	4 28	7 91	68	48
Yuma	T	8.69	0 94	2 84	86	52

FRUIT MARKETING.

Careful Study of Orange Handling.

As our readers know from the advance sketch of results printed in the Pacific Rural Press of March 11, the United States Department of Agriculture is doing some very close and careful work at Riverside to ascertain facts connected with the handling of oranges. The results will be of importance in all orange growing regions of the State. At a University Farmers' Institute recently held at Riverside, Mr. G. Harold Powell, who has the work in charge, made a very interesting preliminary statement, as follows:

Relations of the Investigation.—The shipping and keeping quality of a fruit is the result of the conditions under which it is grown, coupled with the conditions under which it is handled after it leaves the tree. The nature of the soil, the general care of the orchard or grove, including the fertilization, tillage, cover, cropping, irrigation and pruning, age and condition of the trees and general location of the plantation, modify the tree and fruit profoundly, and produce the widest variation in the behavior of the fruit in transit, in the market or in storage.

The relation of the cultural side of fruit growing to the shipping and keeping of the fruit is not well understood. The researches of the College of Agriculture at Berkeley now under way and the future work of the new citrus experiment station must eventually throw light on some of the perplexing problems that accompany the production of citrus fruits of the highest quality.

Outline of the Work.—Our investigations begin with the fruit as it leaves the tree and follow it to the consumer. We hope to find out whether the common storage and transportation decays and other evidences of poor keeping quality are connected with the methods of picking the fruit or of handling it otherwise from the grove to the packing house; whether the methods in the packing house, the brushing and other forms of mechanical treatment, the curing, the sanitary conditions surrounding it, the type of package, and the conditions in transit, have anything to do with the condition in which the fruit reaches the distant market. This is not a pathological or citrus disease investigation. It aims incidentally to determine the influence of commercial methods on the methods of the development of diseases well understood, but primarily to determine the general factors which lead to improvement in the handling of a great fruit industry.

Most of the packing house and transportation decays in both oranges and lemons are caused by the common blue molds. These fungi grow profusely in the moist, moderate temperature. The growth is checked in dry air, and in low temperatures their development is retarded. The molds grow slowly in the lowest temperatures in which the fruit may be safely stored without freezing. These molds seldom attack a perfect, healthy fruit. They seldom gain entrance through a skin that is not injured or that is not physiologically weak.

Causes of Decay.—We do not know much about the causes of physiological weaknesses in citrus fruits, i. e., why one uninjured orange is more susceptible to decay than another, but we are finding out some of the causes of mechanical injury. These injuries, more than all other factors combined, are the direct cause of decay in citrus fruits. When an orange or lemon has the skin broken the blue mold finds access to the wound, and if there is sufficient moisture and a temperature high enough to start it decay is the inevitable result.

It is our aim to study the methods of handling the orange from the time it is picked from the tree. We begin with the clipping of the fruit from the branch. After examining hundreds of boxes in the most representative orange sections in the State, it is safe to say that 15% to 20% of all fruit is made susceptible to rot by puncturing or shaving the skin with the clippers.

This means that by the one operation of picking the orange the picker handicaps about one-sixth of the orange crop before it enters a packing house or a car. All of the injured oranges, of course, do not decay—only those that become inoculated with the spores of the blue mold, and are afterward placed in favorable conditions of moisture and temperature to develop the disease.

Injury by Clippers.—The following table, made up from nine representative experiments with oranges carefully handled, in comparison with clipper-cut oranges, indicate that more than a third of these cuts may develop decay under favorable conditions.

Decay in clipper-cut fruits. Temperature 70° and air moist:

FREE FROM CUTS.	FRUIT CUT.
0.0% decay.	18.0% decay.
1.7% decay.	74.0% decay.
1.3% decay.	56.0% decay.
3.8% decay.	38.0% decay.
1.0% decay.	12.7% decay.
4.7% decay.	48.0% decay.
5.3% decay.	29.0% decay.
1.6% decay.	10.4% decay.
3.5% decay.	46.4% decay.

Average, free from cuts, 2.5%; fruit cut, 36.9%.

The striking feature of this table above, aside from the extent of the clipper injury, is the wide variation in the amount of injured fruit coming from different groves into the same packing house. A grower whose fruit shows 4% injury may be pooling with another whose oranges show more than 30%.

Difference in Pickers.—An equally wide variation is commonly found in the fruit of different men picking in the same grove, as will be seen from the following table, taken at random from a large number of similar records. The figures show the percentage of clipper-cut fruit in different boxes in a load of fruit.

Clipper-cut fruit of different pickers:

Per Cent.	Per Cent.	Per Cent.	Per Cent.
38.0	21.0	50.0	17.0
17.0	32.0	16.0	
18.0	16.0	42.0	
38.0	13.0	29.0	
33.0	15.0	9.0	
	72.0	7.0	

Injury by Stem Stubs.—Another form of injury that originates in picking results from cutting the stems long. A long stem may puncture a number of oranges as it passes along the route from the tree to the packing box, though the injury from this source has been greatly overestimated. A stem-punctured orange is likely to rot under favorable conditions, but the actual loss from stem-puncturing is probably not greater than one to twenty-five in comparison with the losses from clipper cutting.

Amount of Cut Fruit in Bins.—At the high rate of speed at which the average packing house is run, probably not 2% of the clipper-cut fruit is detected or thrown out by the graders as it passes through the machinery. A large amount of fruit has been examined in the bins and in boxes already packed to determine how much clipper-cut fruit actually goes into the packed boxes. An indication of the amount will be found in the following representative figures, compiled in a dozen or more houses.

Clipper-cut fruit in bins and packed boxes:

	%
126s fancy	14.0
112s fancy	37.0
126s fancy	11.0
126s extra fancy	11.0
8's fancy	26.4
96s fancy	20.0
126s fancy	10.0
150s fancy	11.0
126s choice	30.0

Examination in the Cars.—The fruit in a number of cars has been examined in the East to determine what proportion of the decay begins at the stem end, on the body of the fruit and at the navel end of the orange. Many of the oranges are decayed completely on arrival, making the origin uncertain.

Discrepancy in Reports.—The variations in the amount of injured fruit from different groves throws some light on the different amounts of decay in cars of the same grade going to the same market, the fruit having been packed the same or on successive days in one packing house. It is not unusual for the agent in the East to report 5% decay on one car and 20% or more on another. There is no inconsistency in such reports, assuming, of course, that they are honestly made.

For similar reasons the variation in the amount of injured fruit in different packed boxes explains why an agent at St. Louis may honestly report 20% decay in a car, while the agent in New York reports only 5% in the same car. Each may have examined different boxes.

The discrepancies in agents' reports like the one just noted have usually been charged to the carelessness of the agent making the first report, but variations of this nature are the logical outcome of starting fruit to the East that differs widely in its susceptibility to rot.

Bad Work.—There has not been time to investigate other kinds of mechanical injury in the groves. We have seen the fruit dropped like lead into the bags at a distance of 4 or 5 feet, the boxes are often too full, the loaders are sometimes careless and the gravel in the bottoms of the boxes frequently pushes through the skin and makes an entrance for the rot. Neither has there been time to investigate many of the forms of injury in the packing houses. We have, however, some suggestive data on the influence of brushing the fruit on the development of decay.

The Brush.—We are not sure whether the brush generally injures the oranges mechanically and thereby makes them susceptible to decay, or whether the increase is due to the inoculation of injured parts of the oranges by the spores on the bristles of a brush. The decay in the same lot of fruit may be raised or lower from 10% to 30% or more by closing or opening the same brush. The brush is always full of mold spores. The air is full of them. The oranges are covered with them as they pass through the brush, and in spite of the most careful vigilance exercised in the average packing house, rotten oranges are constantly passing through the brushes. If the oranges are clipper-cut or injured in any other way, the brush is likely to deposit a spore in these bruised places.

We are shipping large quantities of fruit to Eastern markets to determine the influence of various methods of handling it on the shipping quality. It is too early to make a report on these shipments, as they are only beginning to arrive at this time. The shipments should throw more light on the best ways to handle puffed fruit, or the effect of picking and packing house methods, on carrying qualities, on the influence of the type of package, on the behavior of the fruit, on shipping under ventilation and under ice.

Delay in Cooling.—A large proportion of the commercial losses in the cold storage of fruits is the result of delaying the cooling of the fruit after it is picked. As soon as the fruit is picked the ripening processes spring forward with a bound, and the diseases spread rapidly. Delaying the fruit in the orchards, in the packing houses, in transit or in any other condition in warm weather gives the fruit a chance to ripen and the various diseases an opportunity to spread. On the other hand, when the temperature of the fruit is reduced quickly, both the ripening and the growth of diseases are retarded.

We are endeavoring to find out whether the cooling of the fruit before shipment will have a similar effect on retarding the decays in oranges in transit. Probably a dozen cars of fruit will be forwarded under these conditions, with an equal number of cars under ordinary icing. The orange is in transit two weeks or more in going across the continent, and the diseases may happen to grow in that length of time. We have had enough experience to feel sure that the orange can be placed in any market in the country in prime condition if it is shipped quickly after picking in a cold condition. But we are not so sanguine about the result where the fruit stands in a packing house several days before packing and cooling.

Nearly all packing houses hold the fruit several days to wilt it. The wilting makes the fruit pack easier and probably does no harm to perfect oranges. The molds, however, start in warm weather in the injured fruit during the curing, after which no treatment that we know can retard its growth. We know from the reports on several shipments that cut fruit can be laid down in New York with not more than 5% decay where the fruit is loaded in a refrigerator car quickly after the injury has been made, but if the oranges are delayed several days in the packing house it is probable that no degree of cooling that could be maintained by a refrigerator car would wholly eliminate the trouble.

Quick Work.—The fruit storage investigations of the department have emphasized repeatedly the necessity of quickly storing the fruit after picking in warm weather, in order to check both the ripening and the growth of rots. The following table indicates that the same principle applies with equal force to the handling of the orange for shipment. The table illustrates the effect of delaying the storage of oranges for different lengths of time after the fruit had been inoculated with blue mold. The oranges were stored in a temperature of 32° F., and the record of decay made ten days after.

DELAYED STORAGE OF ORANGES.

Immediate storage	0.0 decay
27 hours delay	0.0 decay
52 hours delay	15.5 decay
94 hours delay	75.5 decay

From these data and the experience in fruit storage we have no hesitation in saying that oranges ought to be packed in the quickest possible time where they are to be shipped in warm weather under ice.

After Effects.—There is a danger in the use of cold methods of fruit shipment that we desire to emphasize. The cold temperatures do not harm the perfect fruit, either in the eating quality or in the keeping quality after it is removed to a warmer air. It may retard the development of decay in injured oranges, so that they arrive in the East in apparently prime condition. But the decay is only retarded. As soon as the oranges are exposed to a warm air, moisture is condensed upon them, the spores germinate and in a few days the fruit that would have rotted in transit is decaying on the hands of the retailer or the consumer. Cold temperatures should never take the place of careful handling. If a colder temperature than is used now should retard the development of decay while the fruit is crossing the continent there is danger that the care in the picking and packing house methods would be relaxed. One result would inevitably follow this course. A cry would arise from the retailer and the consumer that California oranges have poor keeping quality. Cold storage fruit keeps as well as any other when removed to a warm air, provided the fruit is in good physical condition. When cold storage fruit decays quickly the trouble is generally with the fruit, not with the cold storage.

We do not care to draw any conclusions from the data presented. This report should be looked upon as a preliminary report on the investigation. The department hopes to continue the work several years, after which a final report will be rendered.

Acknowledgements.—In closing I desire to express the appreciation of the Department of Agriculture for the hearty co-operation extended by every one interested and connected with the citrus industry. Every facility has been freely offered for observation and experimentation in the houses of the Southern California Fruit Exchange, the Citrus Union and the independent shippers. No less efficient has been the co-operation of the growers. The fruit in the shipping experiments will go forward in cars in which the value of the fruits will not be less than $15,000. The Exchange has assumed all responsibility on the final condition of the fruit. The

Southern Pacific and the Santa Fe railroads are drawing the cars of fruit that are specially handled to any part of the State we designate without charge. The Los Angeles Ice & Cold Storage Co. is cooling at least ten cars of fruit before shipping, without charge.

In our experience in experimental work we have never seen a more efficient co-operation between practical business industry and scientific research. We have the faith to believe that an industry that is ready to co-operate with science to this extent will be able to apply the results of the investigation in whatever direction they may lead.

THE POULTRY YARD.

Turkey Growing in Oregon.

Mrs. J. G. Miller of Oregon gives Orange Judd Farmer this account of her operations:

During 1904 from a stock of twenty-three turkey hens and two gobblers, I raised over 300 turkeys. In giving my experience I do not wish to be understood as offering my methods as the best, but simply give facts. Having one boy at home of fourteen, who must go to school until the last of June, I found that in order to manage my turkeys for the first three months I must have them under complete control.

I clipped one wing of each turkey and put them in a young orchard of about two acres. The orchard being inclosed by a picket fence, the turkeys had to stay there. I put them in about the first week in March, fed plenty of soaked wheat, oats, scraps from the table, gravel, ashes and charcoal. I had twenty-three nesting boxes in various parts of the orchard

In each box I put about 6 inches of clean sand and an inch clean oat straw on that, also a chicken egg in each nest. By April 10 I had saved and set 400 eggs. I had planned to set all my hens at one time, so as to have all my turkeys the same age by Thanksgiving. Some hens wanted to set before others, and I gave them two or three chicken eggs to sit upon until all were ready to sit.

Setting the Hens.—I then gave each hen about eighteen eggs, dusted nest and hen with Persian insect powder, and as soon as she took to the nest I closed the door and marked the date on each box. Each morning as soon as my morning's work at the house was done, I began to open up the boxes, never opening two very close together at the same time, as they were liable to go into the wrong nest. It took me all day to open the boxes at intervals and some hens did not come off every day.

It will be seen that I had no time to visit or engage in other work away from home. As the orchard was close to the house I always knew when any hen was off to eat, and as soon as she returned to her nest I shut her door. By May 8 I had 302 little turkeys from 400 eggs. There was but one weakly one in the lot, which died.

The Hatching.—About two days before time for the eggs to hatch, when a hen was off, I took out eggs and straw and leveled the sand so the eggs would not crowd or crush the half-hatched turkeys. I did not touch them again until I thought all were hatched. I let the mother hen deal with the empty shells. I think they help to keep the hen's weight from pressing too much on the newly hatched turkeys. In one or two instances I raised a hen and saw her eggs were "pipped" and not hatching fast, and I took her off and sprinkled her eggs with warm water and nearly every turkey came out.

Managing the Young Turkeys.—The weather being warm and nice I let my hens come out with their little ones. In trying to raise a large lot of turkeys, it is necessary to keep the hens acquainted, so they will go together peaceably, and can all be herded in one band. Three hundred turkeys cannot be allowed to scatter all around and trouble one's neighbors. After my little turkeys all came out and had sunned several hours, I fed them stale bread soaked in sweet milk that had been scalded and allowed to cool. I fed nothing else but this, with plenty of fresh water, gravel and sand. After one week I did not scald the milk.

Pastured on Meadow.—As soon as able to travel well I drove them into a meadow field adjoining the orchard, where there were numerous young grasshoppers and other insects. This field contained about thirty acres, and I still had control of the turkeys here, as the fence was high. I could go out at any time and survey the field and see that the old hens were all in sight. I taught them to come up to the orchard about noon to be fed; as there was no water in the field it was easy to do this. They were all so tame they would come from the far end of the field at my call.

Fed Grain at Four Weeks.—When nearly four weeks old I began scattering soaked wheat with the feed. At first the little ones would only eat a few grains, but the hens ate it, and after a week or two, as they got many grasshoppers, I dispensed with bread and milk and fed only soaked grain. At night we put each hen in a roosting coop with about an equal number of turkeys. The hens knew no difference in the turkeys, as all ranged together. I had fifteen hens with them. Three times each week I cleaned the straw out of the roosting coops and burned sulphur in them and put in fresh straw.

When it rained I kept them in the orchard but fed every hour or two, as the hens will sit still and hover the little ones while small, if fed well. The greatest danger from rainstorms is when about two months old, as the turkeys are then too large to all get under the hen, the grass is also high, and if far away from home they become chilled.

Herded by a Boy.—At the last of June I had my boy to herd the turkeys away from the grain fields to the hills, where grasshoppers were so plentiful the turkeys often came home too full to care for grain. The little turkey herder took his lunch box, his algebra and his dog, and herded them alone all day, only for a short time a boy cousin came to help and keep him company. I would rush my work as fast as I could before noon, then mount my pony and ride out to the range and help bring them home. As soon as harvest was over it took both of us to herd the turkeys. Nearly every evening we drove them through a partially open gate and counted them.

The middle of October we quit driving them to range and, having gathered what corn we wanted, allowed the turkeys to go into the corn field. We fed them each day a bushel of soaked wheat and oats. We bought a ton of gravel and they ate about one-half bushel of it per day, and all the ashes and charcoal we could get for them.

Killed and Marketed.—We killed and dressed them November 17, and had only lost eleven from the time hatched, and twenty later ones more than offset the loss. We sold them for 18 cents per pound, and they averaged over $2 each. After estimating $1 for feed and picking we had a net profit of $500.

A Profit of $500.—In estimating a net profit of $500, we of course do not consider our labor in caring for the turkeys. I did my accustomed farmhouse work, the boy did his chores and milking. At the same time I raised forty fine Plymouth Rock chickens and made $25 boarding the school teacher. My debt of $214 was paid, a son attending college and the small boy who herded the turkeys had a substantial sum of money in the savings bank when the flock was sold.

Any woman can do the same if she will go at it with the same determination, provided she has a good range for the turkeys. If she has no good range it is of no use to think of raising many turkeys.

Some people may think I have exaggerated the facts in regard to my turkey receipts, but I really understated them, as I made a sale of later turkeys that brought the amount up to $617. While I stated that I raised forty fine Plymouth Rock chickens, I did not state I raised enough more that were not thoroughbred, so that after I had saved forty good pullets, I sold $31 worth of chickens. Sixteen of my Plymouth Rock roosters, eight months old, weighed 100 pounds dressed.

Another Colony House.

A Tomales grower gives the Petaluma Poultry Journal his favorite roosting house for fowls managed in the colony system: Size 7x11, 6 feet walls, gable roof, on runners 2x6x12; floor 18 inches from ground; roosts 18 inches above floor; side sills, joists and rafters 2x2 inches; siding ½ inch; shake roof, 1½ inch lap. Stock can not break shakes off roof when rubbing; the space under floor may be open on one or two sides as desired, as it makes a good lounging place for the hens in either winter or summer, scratching shed, etc., and it's a good place for the mash trough, also a hopper may be arranged under floor, to be filled from door of house, by raising board of floor. One horse can move such a house as this, and as there are no end boards to remove and replace, moving colonies is a short and easy job.

HORTICULTURE.

Careful Handling of the Fruit Product.

To the Editor:—It seems to me that in connection with the question you raise as to whether we in California are resorting to too much refinement in our handling our fruit products while the Syrian olive growers and oil makers are competing with us with fruit that is gathered with clubs, should bring the response that we, and not they, are on the right track after all. At the University Farmers' Institutes in southern California recently, which I had the pleasure of attending, the most engrossing topic was the work being done by Mr. G. Harold Powell of the United States Department of Agriculture, of which you will no doubt have a full report in the Pacific Rural Press. [It is in this week's issue—Ed.]

Mr. Powell's work shows not only how much need there is for its doing, but shows also the deep interest of the California people. The work of the Government is being most ably conducted and the people have responded generously. The Association is going to give fruit to the amount of $15,000 for experiment, the ice company is holding fruit under ice, and the railroad is sending around cars, without cost, so as to make the meager amount of money the Government can expend go as far as possible. This investigation is to cover the icing as well as decay of fruit.

Mr. Powell's report shows the loss by careless pickers. This careless handling of our fruits is to my mind the greatest drawback to the fruit industry. So we dislike to see our Pacific Rural Press say that we are too particular about our olives and our olive oil in California. Olive oil is like butter—the easiest of all things to contaminate. To-day there is hardly ever any first-class olive oil to be purchased except direct from the growers. I think it would be safe to say that one-half the commercial fruit grown in California is ruined, as shipping fruit by careless handling in orchard and packing house.

When, in 1890, I began to ship Bartlett pears East, I began to learn the importance of careful handling. Then the packing of grapes came and I again had the lesson rubbed into me harder by the financial side of the matter. I think that we can not be too careful.

Mr. Powell's figures of losses did not surprise me. Last season I stood watching our forewoman as she packed oranges during the off season in a Riverside packing house. I said to her, "Many of those oranges that you are packing are cut with the shears." She replied: "Yes, and then they wonder why they spoil in the box. If we did not make a better pack on the grapes we would never have one reach the East in shape."

If those experienced growers took so little interest in their fruit as not to see this, how could they expect the fruit packers to do so for them? It grieves me to see in print that we do our work too well in handling olives, or making olive oil, that we can afford to make olive oil in the dirty, slow and laborious hand system of the foreigners, rather than with our modern machinery in a cleanly, quick American way.

Fresno. Minna E. Sherman.

We are glad that Mrs. Sherman has taken up the matter in this way. We wrote the paragraph about the Syrian olive oil business (in the Pacific Rural Press of April 15) with the purpose of drawing out a negative, and we acknowledge that we expected to get it hot and heavy and not in such a ladylike manner as Mrs. Sherman is mistress of. However, it will probably be the more effective, because of the gentleness of it and because of the fact that Mrs. Sherman is herself a fine example that the highest productive arts pay. All producers should take note and go forward.—Ed.

Notes on English Walnuts.

To the Editor:—I have read with interest the article by J. Luther Bowers in regard to growing walnuts, but find that I cannot agree with all he says. I have observed orchards where the nut was planted in permanent place and have failed to discover any advantage either in thriftiness of tree or later blooming. Trees grafted on black walnut will grow where ordinary seedling walnuts will not grow, no matter how they are raised.

A few years ago I planted some ordinary seedling walnut trees on a piece of land, one corner of which was very wet in winter and dry in summer, and would not hold moisture like the balance of the piece. The trees planted on this spot made a feeble growth for two or three years and died. I replanted with Franquette grafted on California Black, and they have been making good growth from the time they were planted, although of course not as good as they would have made on good soil. The soil was a clay loam on top with blue clay subsoil 15 inches below the surface.

I have walnuts on black walnut root in soil thoroughly saturated with water and too wet to plow from last November to the present time, where it is entirely too wet for peach trees and the walnuts stand it all right. My experience has been that ordinary seedling walnuts will not stand any more water than peach trees.

In Cloverdale, where the climate is very hot and dry during summer, there is a row of black walnuts top grafted to English walnuts, and bearing good nuts, on the edge of the sidewalk, with the hard street on one side and the sidewalk on the other, with very little show for moisture. Will trees planted by Mr. Bowers' method succeed under these conditions? I do not believe that English walnuts, no matter how they are raised, will succeed without a reasonable amount of moisture.

Last, but not least, the grafted trees will produce nuts identical with those produced by the tree, the scions are cut from, while seedlings, whether planted from the nursery or by Mr. Bowers' method, produce nuts of varying quality. If good judgment is used in selecting trees to graft from, the planter can get just what he wants. I believe that the finest varieties of the future will be grafted trees from choice seedlings of the French strain of nuts. Walnuts are long lived and the planter will succeed best who starts right. The best is always the cheapest, and doubly so with anything as difficult to change as a walnut tree. Owing to the difficulty of grafting, grafted walnut trees will doubtless always be high. If I were planting a walnut orchard I would prefer the best varieties of nuts grafted on black walnut root even at $5 each to seedling walnuts at any price.

Sebastopol. T. J. True.

Agricultural Review.

Alameda.

Rhubarb Men Satisfied. — Haywards dispatch to Oakland Enquirer: The rhubarb shipping season for this section is practically over. The books of the secretary, B. Funcheon, show that the Association handled 50,000 boxes of pie plant for the season. The amount is 4000 boxes in excess of the number handled last year and it will, it is claimed, be found that the net price to the grower will be better than that of last year. The shipping season for rhubarb lasts but sixty days, which figures that the Association handled a daily average of more than 8000 boxes. One of the questions which the Association managers has watched and studied very closely has had to do with the selection of locations to which the plant should be shipped. This has been done so nicely that not a box has gone to waste nor has the price been cut down by overstocking one market and undersupplying another. The present indications are that the growers will increase their acreage before another year.

Butte.

Ripe Figs.—Oroville Register, April 15: J. W. Patterson, who was in town yesterday from Sundale, said that at the home of his son, Harmon Patterson, a fig tree now has ripe figs upon it. The figs started last fall with the first rains, and the cold was not severe enough during the winter to injure the fruit, which had kept on growing and was now ripe.

Big Rhubarb Farm. — Marysville Democrat: C. Standiford, a former well known grocer of Marysville, is preparing to engage in the cultivation of rhubarb on an extensive scale at his ranch near Chino mills, Butte county. Five tons of roots have been shipped to him, and they will form the basis for his enterprise. The land in the vicinity of Chino mills is said to be especially adapted to rhubarb growing, and Standiford proposes to devote practically his entire energies to the task of building up a big and profitable industry.

Almonds.—Chico Record, April 21: A visit to the almond orchards in close proximity to town presents a scene which has not been equaled for a number of years and which is indicative of a record breaker in that product at least. In some of the orchards the trees are fairly overloaded with fine, large, healthy appearing fruit, while most all the trees are filled to more than their average. The indications are that the man who has almonds this year and is not compelled to immediately sell after harvest will be on the shady side of easy street.

Humboldt.

Creamery Prices. — Arcata Union, April 19th: Saturday was "creamery day" in Arcata and Ferndale and the following prices were paid: Arcata Consolidated 25¾ c, Laurenson & Peterson 25c. In Eel River valley they were as follows: Abramson paid 23c for 10 days and then closed down. Capitol, 16 days 26c, 15 days 23c, Cream City 26c, Crown, 16 days 26c, 15 days 24c, Eel River 25c, Excelsior, 16 days 27c, 15 days 25c, Grizzly Bluff, 16 days 28c, 15 days 22c, Pioneer 26c, Riverside, 1st to 10th 30c, 10th to 20th 27c, 20th to 31st 25s, Central (Jensens), 16 days 27c, 15 days 25c.

Los Angeles.

Walnut Crop Outlook. — Herald: One of the important meetings of the Walnut Growers' Association of Southern California was held Thursday in the Chamber of Commerce. At this meeting a full representation of delegates from the following associations participated in the proceedings: Los Nietos, Fullerton, Golden Belt, Santa Ana Valley, Mount View, Santa Paula, Saticoy, Santa Barbara County, Oxnard, San Gabriel and San Fernando Valley. An important conclusion was reached when the Association adopted a uniform contract that is a regulation affair for use in sales with brokers, firms or dealers. This, it is said, will prevent friction when the terms of sale are not fully understood. Another important feature was the awarding of the bag contract for the current year. This is a uniform bag that weighs 2½ pounds and is made in Calcutta, India, of jute. The contract for the 100,000 bags was secured by Roth Hamilton, the well known Los Angeles broker. While exact figures on the present walnut crop were not tabulated, the membership in general agreed that the crop would possibly exceed 700 carloads, and, as the present appearance of the growing crop is excellent, opinion was expressed that the 700-carload estimate would not prove an under estimate.

Madera.

Rain Washed Rust From Grain.—Modesto News: Mr. High states that, while the wheat in Madera county was in a bad way, the rains will help it greatly and that, while the crop will not be a good one on account of the rust, it will pay to cut and thresh it. On Mr. Wootten's land there is some wheat that will not head out at all under the most favorable conditions. Mr. Wootten thinks that this is due to late and heavy frosts and not to rust. Be that as it may, it is certainly true that where the wheat growers of Madera county saw nothing but crop failure a week ago, they now see a splendid opportunity of saving half, if not more, of their wheat crop. In Stanislaus county also the rain was of great benefit, as it washed what little rust there was remaining from the wheat and it will materially increase the yield.

Mendocino.

Horseflesh Worth Money.—Ukiah Republican-Press: Mr. Smith, who had charge of the stone work on the administration building at the local State hospital for the Lyons Construction Company, purchased six head of horses for that company last week. L. O. Smith of Lake county furnished a span and received $400 for them. Frank Davidson purchased a beautiful animal from Mr. Babcock of Hopland during the week, also paying $200. The horse is four years old and weighs 1400 pounds, and will be used by him in his team. The prices show that horses are touching one of the highest marks on record in this county. The demand for good, solid team horses is steadily increasing, and promises to go higher yet. Horsemen, however, predict a radical decline in prices within the next six years, as so many owners have gone to breeding with a view of getting in on the high-water mark.

Pears and Prunes Shy. — Ukiah special to Sacramento Bee: Many of the farmers of this section of the county report that the pear and prune crops will be very short this year. The last heavy rains in March caught the trees in full bloom, and washed the pollen away. As a result, the fruit did not set.

Nevada.

Six Hundred Cars of Fruit Iced in One Week.—Truckee special to Sacramento Bee, April 19: The agent of the icing station here, which is owned and operated by the California Fruit Express Co., states that nearly 600 fruit cars were iced at the Truckee station last week. This is early in the season, and goes to show the volume of business that is being done over this road alone in shipping California fruit to Eastern States. From Tuesday noon to Wednesday morning of last week 149 cars were iced in eighteen hours. The company has equipped its station here with modern facilities to handle large quantities of ice, and will hereafter ice all cars at this point, doing away with the icing at Boca and other icing points along the Southern Pacific line. The ice is loaded in box cars at the different ice houses and shipped to the Truckee station.

Orange.

Short Apricot Crop.—Santa Ana Blade: The prospect now is for not more than one-half the normal yield of apricots, as in many places there will be hardly any at all, while in most places the best that can be said is that the crop is far below the average. The reason given by fruit growers for the probable crop shortage is that the heavy rains of February and March damaged the trees and washed off the blooms, and that the subsequent cold weather added to the untowardness of conditions.

San Bernardino.

High-Priced Acreage.— Redlands Facts: The highest price ever paid for an orange grove in Highland was paid last week by J. M. Phy for six acres on Boulder avenue, the property of O. L. Housley. The price which induced Mr. Housley to part with his holdings was $10,000, or $1666.66 per acre.

Redlands Navels Bring High Prices.—The first car of Orange Growers' Cash Association shipped to auction this year was sold April 14th in New York. The extra fancy brand, "Redlands Best," brought $4 a box. This is next to the highest price realized this season for California Navels, the highest being $4.05. The Cash Association's brand "California Sunshine," Fancy O. R., averaged $3 for everything.

San Joaquin.

Peaches and Royal Anne Cherries Light Crop. — Stockton Mail: Peach prospects are the poorest for many years. Some orchard men only expect half an average crop. The buds and blossoms of all deciduous fruits promised an abundant crop, but wind and rain had either blown or washed away the fruit germs or pollen, from either of which causes the present prospect was greatly reduced. Ralph Vignolo, a fruit buyer who has abundant opportunities for observing conditions in the fruit regions, says cherry prospects are generally poor. The Black Tartarian promised well in the vicinity of Stockton, but the Royal Anne crop will be light, while around Lodi the conditions are reversed.

Santa Clara.

Light Cherry Crop.—San Jose Herald: The cherry crop in this vicinity is advancing well and it is expected that the packing of this fruit will commence here during the first week in May, which is two weeks earlier than last year. A well-known orchardist of Sunnyvale states that the crop this year will be light, especially in his vicinity.

Santa Cruz.

The Apple Crop.—Watsonville Pajaronian: Several of the fruit men in this city have been through the orchards of the valley recently and report the apple crop outlook very satisfactory—in fact, they expect it to prove the heaviest in years. The young fruit is setting very heavy on all of the trees, and it will be necessary to thin vigorously in order to increase the size of the apples. The trees that bore a crop of apples out of season last winter seem to be in excellent shape to put forth a good crop again this year. It was feared by many growers at the time of the appearance of the freak crop of apples that the trees would not be able to bear a good crop of blossoms this spring, but they blossomed sufficiently to produce a fine crop of fruit this fall. Unless something unforeseen occurs to change conditions, Pajaro valley will have the largest crop of apples this season in its history.

Solano.

May Donate Site for Agricultural Farm.—Dixon special to Sacramento Bee: A well known business man of Suisun is authority for the statement that Colonel R. D. Robbins, the Suisun banker, who has large holdings throughout Solano county, including one of the finest farms to be found in this locality, 1 mile from the town of Dixon, has signified his intention of donating one of his fine holdings for the State University Farm, in order to secure the location of the farm in Solano county. The people of Dixon feel very much elated over the report, as it is expected that the location selected—if the gift is made—will be on his northern Solano holdings.

First Carload of Cherries.—Vacaville special to Sacramento Bee, April 22: The first carload of cherries for the season left here this afternoon for the East by express. This is three weeks earlier than in 1904, the first carload leaving May 13th of that year. The cloudy weather and rain retarded the ripening of the cherries of late, but it has increased their quality to that extent. On Thursday 450 boxes left here by express.

Light Cherry Yield.—Suisun Courier, April 20: Reports regarding cherry crops are more discouraging than ever. It is estimated there will not be over 15% of a crop in Suisun valley. Some shipments have been made by express to Eastern points this week. The season is about three weeks earlier than last year.

Sonoma.

Fighting Cut Worm.—Santa Rosa Republican, April 18.: On Wednesday Commissioner Bremner went to Asti, and in company with Superintendent Julius Allegrini visited the vineyards and observed the grape cut worm, for such it proved to be, at work. Hundreds of men were then in the vineyards jarring the worms from the vines and in this manner half a gallon of the worms were collected before midnight. Early in the morning the vines were again visited, where the men were carefully hoeing around the vines and collecting the worms from beneath the clods at the roots of the grape vines and in the loose dirt. As many as thirteen were collected from beneath one vine. Some of the vines had been cleared of every vestige of green, including sprouts ½ inch in diameter. Through the efforts of the men in the vineyard the situation is well under control at the present time, although this has been accomplished only after the most diligent and persistent efforts.

Stanislaus.

Creamery Makes New Record.—Modesto Herald: The Modesto creamery broke all its records for butter production during the month of March, turning out 38,598 pounds. This was about 12,000 pounds over the February output. There was paid to patrons on account of this March product $8034. Adding expenditures for labor, supplies, etc., the creamery paid out over $10,000 on March account.

Sutter.

Profitable Venture. — Independent: The 10-acre asparagus field of Mrs. Mary S. Smith of the Stewart tract is yielding good returns, considering that the roots are only three years old. The lady now sends daily to the local market from eight to ten boxes and receives the highest market price for the product.

A Peach Prophet.—A buyer of green fruit, who has been recently in the vicinity of Yuba City, says that peaches and other green fruit will command a high price this season. He expects cannery peaches to go as high as $40 per ton. He bases his opinion on the fact that practically all canned goods have been cleaned off the markets. C. E. Littlejohn of the Sutter Preserving Co. states that the pear and cherry crops would be light, but this he expected, as there was a large crop of these varieties last year, and it is very seldom that trees produce heavy crops in succession.

Tulare.

Bees Swarming. — Hanford Sentinel, April 20: C. K. Decker, the bee man, was here last week from Angiola. He states that he has had several colonies of bees swarm thus early in the season, which is rather unusual.

Strawberries. — Lindsay Gazette, April 22: S. A. Baggs informs us that he has thus far marketed nearly $500 worth of strawberries from his two-acre patch this season. This probably does not cover over one-half of the first crop, which goes to show that when the second crop is harvested strawberry growing in the Lindsay district will be proven very profitable.

Yolo.

First Shipment of Fruit From Winters.—Express, April 21: The first shipment of fruit for the season was made Monday, consisting of four boxes of Black Tartarian cherries, the first of this variety to leave this State. These were grown by Mr. L. M. Hartman and were shipped to the Earl Fruit Company at Chicago.

Ventura.

Apricots, Beans and Beets.—A Ventura dispatch says: Apricot trees are already in full leaf and the percentage of fruit set is very large. The acreage of Lima and little white beans is going to be the largest in a dozen years. Contracts for Limas have been made with some at 3 cents. The acreage of sugar beets will exceed that of any previous year, the figure being placed at 20,000 acres. Preparations at the Oxnard factory are for the longest run since the building of the factory.

Yuba.

Wool Sales.—Marysville special to Sacramento Bee: High prices continue to rule in the wool market. Many sales have been made in southern Yuba county, the larger growers being satisfied with the figures at present prevailing. The highest price—22½ cents—was secured by J. Welch; Price Blackford's clip brought 22½ cents; the output of B. Church's flock and that of J. Moran went at 20½ cents, and Henry Haile, J. D. Thomas and Thomas Peckham realized 22 cents.

Didn't Injure Fruit.—An unusually severe thunder and lightning storm, accompanied by hail and rain, visited Marysville and vicinity at noon April 18th. Fruit growers report a thinning out of blossoms as a result, but this is regarded as beneficial rather than otherwise. No damage is reported from the lightning.



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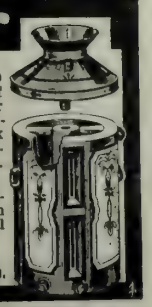
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THE DAIRY

The New Law About Cleanliness in Dairies.

The last Legislature passed a law concerning cleanliness in dairying which all working in that line should know about. It forbids the sale of any milk or milk products which have been produced in a dairy or factory that is in an unsanitary condition, or that is produced from cows affected by any disease, or from cows within five days after or fifteen days preceding parturition.

The law declares that a dairy shall be deemed unsanitary under the meaning of this act when, among other causes that render milk, or products made therefrom, unclean, unwholesome, impure and unhealthy, the following exist:

If the drinking water is stagnant, polluted with manure, urine, drainage, decaying vegetable or animal matter.

If the yards or enclosures are filthy or unsanitary, or if any part of such yards or enclosures, other than pastures, are made the depositories of manure in heaps or otherwise, where it is allowed to ferment and decay.

If the walls become soiled with manure, urine or other filth.

If to the interior of cattle stables, barns or milking sheds an application of lime whitewash is not made at least once in two years, or if in the mangers, or other receptacles from which cows are fed, decaying food or other material is allowed to accumulate.

If the pails, cans, bottles or other containers of milk, or its products, strainers, coolers or other utensils coming in contact with the milk or its products, are not sterilized by boiling water or superheated steam each and every time the same are used.

If the person or the wearing apparel of the dairyman, his employes, or other persons, who come in contact with milk and its products, are soiled or not washed from time to time.

A creamery or any factory of dairy products or any store or depot or other place where milk is handled or kept for sale shall be deemed unsanitary under the meaning of this act when, among other causes that render milk, or products made therefrom, unclean, unwholesome, impure, stale, or of low grade or inferior quality, the following exist:

If milk or cream is received that has reached an advanced stage of fermentation, or that shows a state of putrefactive fermentation, or if it is received in cans or other containers that have not been sterilized by means of boiling water or superheated steam after each delivery.

If the utensils and apparatus that come in contact with milk or its products in process of manufacture are not thoroughly washed and sterilized by means of boiling water or superheated steam.

If the floor is so constructed that it permits the flowing or soaking of water, milk or other liquids underneath or among the interstices of such floor, where fermentation and decay may take place, or if such floor may not be readily kept free from dirt.

If drains are not provided that will convey refuse milk, water and sewage at least 50 yards from such creamery or factory of dairy products, or if any cesspool, privy vault, hog yard, slaughter house, manure or any decaying vegetables or animal matter shall be within a distance that will permit foul odors to reach any creamery or other factory of dairy products or store or depot where milk or its products are sold or handled.

If such creamery or factory of dairy products does not permit access of light and air sufficient to secure good ventilation.

If in any building or buildings used in connection with any creamery or factory of dairy products any insects or other species of animal life are permitted, or if upon the floor, the sides and walls any milk or its products, or any other filth, is allowed to accumulate and ferment and decay, or if the bodies or wearing apparel of persons employed or coming in contact with any milk or its products in any creamery or factory of any dairy products, shall be unclean and not washed from time to time.

Write "Osgood" Binghamton, N. Y., about their "New Idea" ready to weigh "Pitless Scale."

The Dairy Bureau.

The Dairy Bureau is actively at work and promises to continue along that line. The two new members recently appointed by Governor Pardee—Frank Pierce and George R. Sneath—have assumed office. Mr. J. M. Thomas has presented his resignation as the secretary of the Bureau and William H. Saylor, who has been connected with the Bureau for eight years as chemist and assistant secretary, has been promoted to the secretaryship.

At the meeting held April 5 the Bureau organized by re-electing John A. Bliss chairman. That the Bureau will have its hands full in the future is indicated by the list of its duties as follows:

To enforce the oleomargarine law.

To enforce the law relating to the branding of cheese.

To inspect the testing apparatus used by creameries and factories and test apparatus when requested.

To enforce the new renovated butter law and issue licenses to manufacturers and dealers.

To enforce the new law relating to the marking of the weight on retail butter packages.

To enforce the section of the sanitary dairy law relating to the misbranding of butter.

To enforce the section of the sanitary law relating to the misuse of the word pasteurize or any of its derivatives in the labeling of butter.

To carry the sanitary dairy law into effect.

Under the sanitary dairy act the State will be divided into a number of districts, in which inspectors will be put to work, not only to carry on the sanitary inspection features, but also to seek for infractions of the other laws. Out of its total appropriation of $10,000, by practicing economy in the office the Bureau members hope to apply $6500 to pay for inspection work. This may not permit carrying the work into isolated communities, and it will likely result in the work being concentrated in the strictly dairy districts, and especially where milk is produced for shipment to the cities and towns and delivered to creameries. The necessary inspectors will be appointed during the next few months.

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When everything is peaceable, without a sign of fray.
I'm tired o' fightin' snowstorms, I'm tired o' choppin' wood—
A simple life is somethin' that I feel would do me good.
I've shivered in the mornin' when the dawn was gray and bleak,
I've took quinine and bitters till my stomach's gettin' weak,
An' I'm waitin' most impatient for the time to come along
When the sun is shinin' lazy and the world is all a song.

Swingin' in the hammock underneath the spreadin' tree,
Listenin' to the robin an' the murmur of the bee;
Keepin' jest a little bit awake, so's not to miss
The perfume of the clover mingled with the zephyr's kiss.
I've had enough of battle with the winter's ruthless power;
I yearn for peace and quiet—I can stand it by the hour.
It's fine to be a hero an' to conquer in the strife,
But I'm gettin' good an' ready to adopt a simple life.

—Washington Star.

Yesterday.

Ship of To-day! I watch you sail
Across the lessening hours to me.
What storm can those brave wings assail,
What tempest toss that peaceful sea?

All happy things you seem to bring,
A cargo of long-sought desires,
Rebirth of joy, glad songs of spring,
And subtle hints of hidden fires.

Yet stand I silent and apart,
Unwelcoming your fair array,
With eyes turned toward you, but with heart
Still with the Ship of Yesterday.

—Margaret Ridgely Schott.

The Selling of Balaam.

The little black topknot had laid her first egg. She cackled loudly as she strutted back and forth in the barnyard with all the swagger of a three-year-old hen.

Calamity seemed about to follow her success. Farmer Batey, unaware of her new achievement, had decided to have her for his dinner that day. He proceeded to try to catch her, and by the time she flew into Balaam's manger he was thoroughly angry.

Balaam, the mule, liked the black hen. She had roosted on his back ever since she had been able to roost, and he liked to feel the prick of her little, clinging toes, as she fussed about, settling herself for the night, and talked to him in sleepy clucks while he munched his hay. When she flew squawking into his manger all his nobler instincts rebelled at sight of her dilemma.

Mr. Batey was fat and short. Consequently he had to balance himself across the edge of the manger in order to reach the hen, whose ebony wings fanned clouds of dust and feathers about his head. Balaam could not endure it. He stretched his neck slowly toward Mr. Batey's head, which hung over into the manger.

Mr. Batey's hair had an ambitious way of growing straight up, Balaam's teeth closed firmly over a small tuft, and he pulled, with a backward jerk and a bob of his head. Mr. Batey sprang back, blinded with pain. Balaam stood quite still, sullenly flapping his under lip. His gaze rested upon the ground, and only the working of his long ears bespoke apprehension. The fatal little wisp of hair showing slightly between his teeth as his under lip fell, told the story.

Mr. Batey clenched his fists and swelled dangerously for several seconds. Then, concentrating the fire of his eyes full upon the mule, he hissed: "That's the last I'll take out of you." He might have said that was the last Balaam would take out of him. Turning, he left the barn and strode over to the field where Abe was at work.

Abe was an old plantation darkey, who owned a small plot near Mr. Batey's farm. By way of adding to his little income, he did occasional odd jobs for his neighboring farmers.

As Abe straightened up and rested one arm on his hoe, Mr. Batey said: "Abe, you wanted to buy Balaam the other day. I'll sell the blamed mule for $5."

"Why, sah! What'd de boy do? He sets a pow'ful sto' by dat mule, don't he?"

"The mule's no account, and I don't think he's safe for the boy," answered Batey. The grin upon Abe's face widened greatly.

"I spect he's safah foh de boy dan fo' yo, sah," he said.

"Do you want him?" said Mr. Batey. "If you don't, I'll sell him to somebody else."

"Well, sah, I'd be proud to own dat mule. He's pow'ful han'some fo' a mule. An' a mule's a cullud man's bes' friend, 'cepin his mammy. A mule takes a so't o' pussonal interes' in a man, Mistah Batey; a so't o' pussonal interes'."

"Yes," answered Mr. Batey. He knew it was true.

"I'd like to buy him, sah."

"All right," answered Mr. Batey. "You can take him tonight. I don't want him around any longer, eating his head off—and mine, too," he added.

When Mr. Batey entered his kitchen he was still angry, and told his wife what he had done.

"Why, William Batey! The boy—"

"Well, the mule's no account!"

As Mr. Batey spoke his son entered the room. He was a quiet boy, who never indicated by a word what he felt or thought. He sat down on the bench by the window.

The sun shining through the brim of his old straw hat cast irregular shadows upon his face. In his hand he held a piece of rope, which he had been making into a halter for Balaam. His face wore a look of silent intensity.

Mr. Batey rose, and walking to the stove, held his hands over it, as if to warm them, although the spring sun shone hot without. Then, unable to look into the boy's face, he glanced sidewise at his wife and said "Well, son?"

The boy's little brown feet hung, unswinging, pathetically expressive. He did not even squirm his toes.

"When will he take him away, pop?" he asked.

Mr. Batey felt almost relieved. "Tonight," he answered, hesitating slightly, then adding, "I'll get you another pet that will beat Balaam all to smash."

The boy made no reply, and presently slipped from the room.

"He doesn't seem to care much," said the boy's father.

"The less he says, the more he cares," replied Mrs. Batey. Her motherly intuition gave her keen understanding of her son. Her answer was so curt that Mr. Batey felt there was no sympathy to be expected from her, and left the house.

At noon the boy came to his dinner from the direction of the barn. He did not want any pie.

"What's the matter, son?" asked the father.

"Nothing," he said, and abruptly left the room.

That evening Abe proudly led away his prize. Up in the loft of the barn a little figure clung to a beam in the wall, and two straining eyes peered out from a small, high window, watching as Balaam's long ears waved a melancholy adieu until a turn in the lane hid him from sight. Then the boy slipped down and buried his face deep in the sweet hay and the cry went up with a sob, "O Lord, if you had a mule like Balaam, you'd know!"

The boy had no stock of philosophy with which to harden his heart when there was no consolation to be had. He only felt that if grown-up people loved things worth loving—such as mules—no one would have any right to take them away. To his mind, love rather than might should give right, and his belief in the justice of fathers suffered much.

That night, after Mr. Batey had blown out the light, the thoughts that come with the darkness gathered about, driving sleep away. They created in his mind a picture which he could not banish, try as he would. It was a simple picture of a little, freckled, red-headed boy clinging about the neck of a black and white spotted calf, while the little creature gazed with soft, wondering eyes at his display of grief, and licked his cheek with his raspy little tongue. Then men took the calf away and tied it in a wagon with ropes, and drove off; but its gentle eyes gazed after the boy until he threw himself in the grass and buried his face.

The picture was very vivid, for in the broken-hearted boy Mr. Batey recognized himself, and the artist who painted it was memory.

No right of possession since that time had seemed half so strong as his right to the calf because of his love for it. And he realized that a child's heart dictates to its mind its sense of justice.

He spoke aloud: "I wish I hadn't sold that mule!"

"I know it, William," his wife answered softly.

"Well," said Mr. Batey. He had got to that point where peace of mind was no longer possible.

"Go to sleep now," answered his wife. "You can see Abe tomorrow if you wish to take Balaam back."

Mr. Batey sighed and was silent. At the end of half an hour he said, faintly, "Mother, the boy will wake in the morning—and he rides Balaam to water the first thing. Do you think—I'd better see about it— before morning?"

"What do you mean, William—are you crazy?"

Mr. Batey got up and lighted the lamp. "Pretty near, I guess," he answered. "I can't stand this."

When he had completed his hasty toilet he wore one sock and one long black stocking, but he did not know it; and the end of half an hour found him within sight of Abe's cabin.

Evidently Abe was up, for a candle glimmered in the window. As Mr. Batey drew near he heard sounds from the direction of the barn—Abe's voice merging from entreaty into stern command and from command into terms of endearment. Then came the whacks of Balaam's heels upon loose boards, and the peculiar shrill bray of his most provoking mood.

"Whoa, Balaam! Stop dat, now! Ef yo' don'—thar, honey— quit dat, now, I tell yo'! Does yo' want me to lam de hide offen yo' back till dey ain't 'nough lef' fo' to make a coonskin cap wif? Oh, I wish he'd kill his fool self, I do!"

Abe interspersed his remarks with enticing promises of reward for subsequent good behavior. Occasionally Balaam assumed a calm and contemplative air, as if to weigh these promises; then down went his head, and his heels began their swift patter on the splintered boards.

As Mr. Batey stepped into the dim lantern light, Abe's eyes grew big with astonishment, then melted with gratitude.

"I's mighty glad to see you, sah!" he almost sobbed.

"Well, Abe, your best friend has gone back on you, hasn't he?"

"Oh, sah, he's not my bes' frien'! He's yo's, sah. Hif 'fection fo' yo' is de very stronges' I eber seed, Mr. Batey. It 'pears lak it's jes' a bustin' out all ober him."

"Would you rather have the $5 than the mule, Abe?"

"Well, ef it's jes' the same to yo' sah. He ain' puffec'ly congeneous to me, it don' seem."

At the sound of Mr. Batey's voice Balaam's heels ceased their action and his eyes rested upon him with mild reproach and an expression of injured innocence. A bargain was hastily struck, and Mr. Batey, mounting the now passive mule, disappeared into the darkness.

"I'd rather split my own kin'lin'," observed Abe, as he gazed ruefully upon his splintered stable.

Very early in the morning the boy was awakened by a sound which fitted well into his dreams. It was Balaam's call for breakfast. There was a violent thumping at his heart as he wriggled into the two garments which made up his daily apparel.

Mr. and Mrs. Batey stood at the window and waited.

The dew was gleaming under the morning sun, and the birds had sung themselves into an ecstasy over its brightness. A soft breeze had changed the meadows into a rippling green sea. Across this sea Balaam cantered, with the boy upon his back. All the brightness of the morning seemed to radiate from the happiness in the boy's face.

Past the house they went, full tilt, onward to the creek. When the boy saw his mother and father in the window a shy, happy grin stole into his face, and when he had passed they knew that it still lingered, shining through the unwashed traces of last night's tears.

From the direction of the barn came a loud, triumphant cackle. The black hen had laid another egg.

The venerable Charles Wesley when he was once rudely confronted in a very narrow pathway by an arrogant clerical opponent who accosted him with the words, "I never make way for a fool," at once stepped aside and remarked, as he passed with a courteous bow, "I always do."

Cheap chimney, dear lamp.

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My Index tells what chimney fits your lamp. If you use that chimney, you get perhaps twice as much light, and save a dollar or two a year of chimney-money.

It tells, besides, how to care for lamps; even that is imperfectly known.

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Domestic Hints.

Pork Roll. — Take a piece of pickled side pork, fat and lean together, spread with a seasoning of powdered sage and a little pepper, roll up tightly, wind a cloth tightly around it and tie so the edges will not curl, boil tender in plenty of water; take from the liquor; when ready to serve remove the cloth and slice. Serve with tomato or currant catsup.

Peanut Cake.—Cream half a cupful of butter with a cupful of sugar, add the stiffly beaten whites of four eggs; next add a cupful of milk and one and one-half cupfuls of sifted flour, with a teaspoonful of baking powder. Beat the whole thoroughly and stir in a cupful of mashed or grated peanut meats. Sprinkle some of the meats over the top just before the cake is put into the oven.

Bread Muffins. — Take four slices of baker's bread, and take off all the crust and lay them in a pan; pour boiling water over them — barely enough to soak them — and cover the pan. When the bread has stood for an hour drain it, and stir until it is a smooth mass; add two tablespoonfuls of sifted flour and half a pint of milk. Beat two eggs and stir them into the mixture gradually. Grease some muffin rings and place them on a hot griddle; fill them and bake brown. Serve hot. Tear the muffins open to butter.

Mutton Broth. — A simple way of making this broth, which is good for delicate persons, is as follows: Take a fourth of a pound of mutton. Scraggy part of the neck is good for this purpose. Cut the meat into small pieces carefully, separating it from the fat. Add to the meat a tablespoonful of barley and a pint of water. When the boiling point is reached skim carefully. Let the soup simmer while you put the bones in a saucepan, adding a cupful of cold water, and let them boil slowly for half an hour. Then strain the liquid around them over the meat and barley and cook the whole for two hours. Season to taste.

Spinach.—Wash clean and boil half a peck of spinach; when well drained pound it in a mortar, rub it through a wire sieve, and, having placed the pulp in a small stew pan, with a pat of butter, a bit of glaze, a little pepper and salt, and a pinch of sugar, stir all together over the fire until quite hot, and serve with fried croutons. This is the regular French puree; but a simpler method, equally good, is, after boiling the spinach, to drain it very thoroughly, and then chop it quite fine on a board, put it in a stew pan with a little milk (or a piece of butter), with pepper and salt, and stir it over the fire for at least five minutes to dry it. Spinach should be carefully picked over, and all decayed leaves and stalks taken off.

Weak Digestion.

Weak digestive powers are often due to muscular weakness as well as poor digestive fluids. When such is the case, close attention should be paid to the development of the muscular system by regular out-of-door exercise. Working in flower gardens will be especially adapted to women. If, on the other hand, it is due largely to a degeneration of the gastric juices, much attention should be paid to dietary regimen. Regularity in eating is of first importance. If the stomach seems to be overloaded, and there is a heavy feeling in the gastric region, it may be necessary to take a very small amount of food, and take it four or five times a day, in which case the food must be light and bland. If milk seems to "set well" on the stomach, it will often be beneficial to take a milk diet, or bread toasted, with milk, for a week or two, and gradually come back to other articles of food. Custard may serve to good advantage. Regular outdoor exercise must be insisted upon while dieting. Resting with a hot-water bag on the stomach half an hour after each meal will be serviceable. Rubbing the stomach and bowels is also recommended. — Health.

New Use For Time Tables.

One public school teacher with a bump of ingenuity has put railroad time-tables to a novel use. She uses them in teaching geography. Evidently they make pretty good text-books, too, for her boys passed the mid-winter examination with a higher percentage than any other class in that particular school, says the New York Post.

"That was because they got interested," said the teacher. "It is much easier to fix a boy's mind on a time-table than on a regular schoolbook with cut-and-dried lessons. A stack of time-tables piled up on his desk, with permission to plan as many trips around the world as he likes, stimulates a boy's imagination, and is one of the best incentives in the world to an intelligent study of countries and towns."

Be sure no earnest work
Of any honest creature, howbeit weak,
Imperfect, ill-adapted, fails so much,
It is not gathered as a grain of sand
To enlarge the sum of human action used
For carrying out God's end.
—Elizabeth Barrett Browning.

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The Markets.

San Francisco Produce Report.

San Francisco, April 26, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$1 15¼@1 13⅝	88½@ 87⅛
Thursday	1 13½@1 08⅝	88 @ 86
Friday	*——@1 ——	—@—
Saturday	1 09 @ 98¼	87⅝@ 86⅜
Monday	98 @ 92½	86¾@ 84⅜
Tuesday	95 @ 92	84⅛@ 85⅜

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	47½@47⅝	47⅜@47⅜
Thursday	47¼@47⅜	47⅜@47⅜
Friday	*——@——	——@——
Saturday	47 @47⅛	47¼@47⅜
Monday	47⅛@45⅞	47⅛@46⅜
Tuesday	45½@46¼	46¼@47

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 43½@1 42⅞	$1 28⅜@1 28½
Friday	*——@——	——@——
Saturday	1 42 @——	1 28⅛@1 27½
Monday	1 42 @1 40¾	1 27½@1 27⅛
Tuesday	1 41 @1 40¾	1 27⅛@1 27½
Wednesday	1 42 @——	1 27⅜@1 28½

*Holiday.

Wheat.

The local market has been rather quiet, especially for spot wheat, with no special changes in quotable values, but tendency to slightly lower figures than had been ruling. There is not much wheat offering in the sample market, but the nearness of the new season is causing buyers to be more than ordinarily conservative in their bidding, and at the same time is making holders of wheat desirous of effecting a clean-up at an early day. There is now one ship on the engaged list in this port for grain loading, having been placed the past week at 23s 9d for wheat or barley or both to Europe, August loading. In wheat options there was a moderate amount of trading in this center and prices for both May and December wheat were at a little lower range than previous week. A prominent feature of the week was the collapse in Chicago of the deal by the Gates clique in May wheat. The sensational press had much to say of the drop in May option in the Chicago pit in one day from $1.09 per bushel to 98½c, just as though it was unparalleled, forgetting about the deals of Hutchinson and Mitchell and Harper and Leiter, to say nothing of the San Francisco deal engineered by Dresbach, in which over $10,000,000 was lost by the Mackay-Flood combine, and the San Francisco speculative market dropped at one fell swoop 70c per cental, being $1400 per contract, without a trace of transactions between the two points of $2.10 and $1.40 per cental, the figures ruling at the close of one afternoon session and the opening of 'Change the following morning. Fair dropped many millions in another San Francisco deal. While the Gates deal was progressing one of the former wheat magnates — Mitchell — was dying in the Chicago almshouse. Dresbach, the heaviest plunger ever on the San Francisco board, died penniless.

California Milling	$1 52½@1 60
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 40 @1 45
Oregon Club	1 40 @1 47½

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.43½@1.40¾.
December, 1905, delivery, $1.27⅛@1.28⅝.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.42@——; December, 1905, $1.27⅜@1.28¼.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7s0d@7s0½d	6s9d@-s-d
Freight rates	16@-s	22½@-s
Local market	$1 32½@1 35	$1 40 @1 45

Flour.

Demand is not very brisk, most buyers confining their purchases to immediate needs, as is apt to be the case when the cereal year is drawing to a close. Many mills are preparing to shut down and will remain closed until new wheat becomes available for grinding. There will be no scarcity of flour in the meantime. Prices are without quotable change.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The market has ruled quiet most of the week and has presented a generally easy tone, mainly on account of the present good crop outlook in a large portion of the State. There is not much barley offering or on hand, but demand is at present light and almost wholly on local account. Some old barley will be wanted in the early part of the new season, but with new offering at materially lower figures than now current for old, as is apt to be the case as soon as the season opens, the price of old will naturally be affected. There will doubtless be some shipping demand for new crop barley when it begins to arrive in wholesale quantity and this will tend to check the downward trend of values. One ship is now under charter for August loading and will likely take barley as main cargo.

Feed, No. 1 to choice	$1 20	@ —
Feed, fair to good	1 17½	@ —
Brewing, No. 1 to choice	1 22½	@1 25
Chevalier, No. 1 to choice	1 22½	@1 25
Chevalier, common to fair	1 15	@1 17½

Oats.

Trade in this cereal is of only moderate volume and at generally unchanged values. Offerings of common feed qualities are fairly liberal and for this sort the market cannot be termed firm. High grade oats are hardly quotable in a wholesale way and have been in exceedingly light supply the greater part of the season.

White oats, fancy feed	$1 50	@1 55
White, good to choice	1 45	@1 50
White, poor to fair	1 40	@1 42½
Milling	1 45	@1 50
Black oats	1 25	@1 45
Red, fair to choice	1 35	@1 60

Corn

Eastern is in fairly liberal stock and domestic product is offering in considerable quantity. There has been lately a good demand for choice dry Large White for shipment, and market for same has been more favorable to sellers than for Large Yellow or mixed. New Small Yellow is in moderate supply.

Large White, good to choice Cal	$1 35	@1 45
Large Yellow	1 30	@1 35
Small Yellow	1 55	@1 65
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 30	@1 35

Rye.

Recent arrivals have been mainly from outside points. There is little first-class domestic in the State.

Good to choice	$1 55	@1 65

Buckwheat.

In the absence of stocks worth mentioning, scarcely anything doing in this cereal.

Good to choice	$2 00	@2 25

Beans.

Values for good to choice beans are ruling steady, with fair movement outward. There are a good many damaged and mixed beans on the market, and it is the exception where sales of such stock can be effected at other than low figures. Seriously damaged beans are quoted down to $1 per cental.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 50	@2 75
Pinks	3 00	@3 50
Bayos, good to choice	3 00	@3 25
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	4 75	@4 90
Black-eye Beans	2 60	@2 90

Dried Peas.

There are few California Peas of any sort on market. There is some inquiry from millers for Green, and desirable qualities of this variety are salable to fair advantage.

Green Peas, California	1 50	@2 00
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The market in this center continues inactive, growers and speculative holders contending for higher figures than buyers are willing to pay. A Santa Rosa dispatch says: "The hop growers of Sonoma county who have still some hops on hand have entered into an agreement not to sell a pound of hops for sixty days under 30c a pound. There are 1400 bales of hops still in Sonoma county. The growers want to advance the price. It is understood that other counties have a similar agreement." The New York Producers' Price Current reports as follows: "A dull and dragging market has characterized the hop situation this week. Brewers show continued indifference to the situation, which is partly due to the very low offerings being made to them for futures. These are being offered at 19@20c for the 1905 crop, regardless of the fact that growers are asking 16@17c for contracts. From New York State we hear of the sale of 200 to 300 bales at 26c. The English market is reported as quiet but firm, owing to the strong holding by the pool; notwithstanding this, English hops are selling at £7 10s, whereas holders of Pacifics in London are asking £8. The German market is dull, but prices have not changed, as owing to the hand-to-mouth policy of the German brewers, but little chance of fluctuation exists. A large increase of acreage set out two years ago will come into full bearing this season." The Oregon Journal says: "In every section of the hop district the new acreage is very heavy—in many cases almost as large as the old acreage. In the Aurora district the increase is estimated at fully 40% of the entire acreage of last season. This includes also the Butteville and Champoeg districts. Late reports from the various districts say that conditions were never better for a heavy increase in the production." A meeting of Oregon growers was held in Portland yesterday for the purpose of pooling remaining stocks and advancing the price to 30c.

California, good to choice, 1904 crop	24	@27

Wool.

Receipts are of fair proportions, but they almost wholly represent purchases made in the interior by dealers. That there will be any great accumulation of offerings here from first hands the current season is wholly improbable. Dealers are keeping close watch on all wool sections and are hunting up the fleeces, instead of having growers run after them.

SPRING.

Humboldt and Mendocino	25	@26½
Northern, free	24	@25½
Northern, defective	21	@22
Middle County, free	20	@23
Middle County, defective	17	@19
San Joaquin and Southern, free	18	@20
San Joaquin and Southern, defective	13	@16
Oregon, good to choice	20	@24
Nevada	16	@23

Hay and Straw.

Market is dragging along in much the same fashion as for some weeks past. There are no heavy quantities of choice to fancy hay offering, and stock of this sort is selling in a limited way to comparatively fair advantage, but ordinary qualities are in excessive stock and are meeting with slow sale at low figures.

Wheat, good to choice	$11 00	@ 13 00
Wheat and Oat	9 00	@ 11 50
Tame Oat, fair to choice	8 00	@ 11 00
Wild Oat	7 00	@ 9 00
Barley	8 00	@ 10 00
Alfalfa	7 00	@ 10 00
Clover	6 00	@ 9 00
Stock hay	6 00	@ 7 50
Compressed	11 00	@ 13 00
Straw, ₱ bale	25	@ 50

Millstuffs.

Bran is being offered from outside points in greater quantity than immediate custom can be found for at full current figures. Middlings are in fair supply and limited request. Market for Rolled Barley and Milled Corn presents an easy tone.

Alfalfa Meal, ₱ ton	$21 00	@ 22 50
Bran, ₱ ton	21 00	@ 22 00
Middlings	25 00	@ 28 00
Shorts, Oregon	21 00	@ 22 50
Barley, Rolled	26 00	@ 26 50
Cornmeal	28 50	@ 29 50
Cracked Corn	29 00	@ 30 00
Oilcake Meal	32 50	@ 34 00

Seeds.

Little doing in any of the several kinds of seeds quoted herewith and no changes to record in quotable values. Offerings of Alfalfa include some of quite ordinary quality and for which it is difficult to secure custom at any figure.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa	8	@12½
Canary	6¼	@ 6½
Rape	1½	@ 2¼
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

There are no heavy quantities on the market, but more than can be placed at full current rates. A shipment of 150 cases was made by steamer to Belgium and 68 cases to Germany.

Extracted, White Liquid	5½	@ 6
Extracted, Light Amber	4	@ 5
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

Values are being maintained at same range previously quoted, but movement is light. Stocks are of fair volume for this time of year.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Demand for Beef is only moderate and market is easy in tone, with offerings more than ample for present needs. Veal is arriving rather freely and market for same is devoid of any special firmness. Market for Mutton is ruling quiet, values remaining quotably as last noted. Lamb is in sufficient supply for current needs. Hogs were in lighter receipt and fair request, causing the market to rule firmer than previous week.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	—	@ 5
Beef, 3rd quality	4	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 180 to 180 lbs	5¾	@ 5¾
Hogs, large, hard, over 180 pounds	5¾	@ 5¼
Hogs, small, fat	5½	@ 5⅝
Veal, large, ₱ lb	4	@ 6
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	9	@10

Hides, Skins and Tallow.

Hides are in good demand and market is firm. Quotations show an advance for Wet Salted and for Dry Kip and Veal. Current values for Pelts are being well maintained. Tallow market is steady; shipments for the week include 160,000 lbs. to England and 39,000 lbs. to Central America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11¼	—@10½
Medium Steers, 48 to 56 lbs	—@11	—@10
Light Steers, under 48 lbs	—@10	—@ 9½
Heavy Cow Hides, over 50 lbs	—@10¼	—@ 9½
Light Cow Hides, under 50 lbs	—@10½	—@ 9½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@11½	—@10½
Wet Salted Calf	—@12½	—@11½
Dry Hides	18 @18½	17 @—
Dry Kip and Veal, 11 to 16 lbs	—@16	—@14
Dry Calf, under 4 lbs	—@20	—@18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@——	
Horse Hides, salted, medium	2 75@——	
Horse Hides, salted, small	2 25@——	
Horse Hides, dry, large	1 75@——	
Horse Hides, dry, medium	1 50@——	
Horse Hides, dry, small	1 00@——	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

Trade in this department is of a light order, as is customary for this time of year. Quotations are based on asking prices and are unchanged.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6 @6½
Grain Bags, Calcutta, buyer June-July	6½@6¾
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3½ lb	30 @—

Poultry.

There were heavy receipts of Chickens just prior to Easter, largely common Old Hens and Small Broilers, causing these to meet with a weak market. Fine Young Roosters were not in excessive receipt. Market presented an easier tone for Turkeys, Ducks and Geese, although choice offerings sold to fair advantage. Pigeon market was quiet.

Turkeys, Dressed, choice, ₱ lb	$ 20	@ 22
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	5 00	@ 5 50
Hens, large	6 00	@ 6 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	6 50	@ 7 50
Fryers	5 50	@ 6 50
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	6 00	@ 7 00
Ducks, large young, ₱ dozen	7 00	@ 8 00
Geese, ₱ pair	2 25	@ 2 50
Goslings, ₱ pair	2 75	@ 3 00
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	1 50	@ 2 00

Butter.

There was a moderately active shipping demand during part of the week and asking prices were advanced 1@2c. per lb. At the higher figures the demand was less active. Shipments East have about ceased, the markets on the Atlantic side being on the decline.

Creamery, extras, ₱ lb	19	@—
Creamery, firsts	18½	@—
Creamery, seconds	18	@—
Dairy, select	18½	@—
Dairy, firsts	18	@—
Dairy, seconds	17½	@—
Mixed Store	16	@17

Cheese.

Stocks of domestic are showing some increase and the market is less firm. Shipping orders for flats are being filled at a decline of about half a cent from recent prices. Not many small cheese offering, neither is there much inquiry for this sort at present.

California, fancy flat, new	12	@12½
California, good to choice	11½	@12
California, fair to good	11	@11½
California, "Young Americas"	11	@13
Eastern	16	@17

Eggs.

There are free arrivals and only on account of active storing are prevailing values being maintained. The demand for immediate use is naturally not so active as it was just prior to Easter. Some Eastern eggs are arriving and going into cold storage.

California, select, large, white and fresh	19	@20
California, select, irregular color & size	18	@19
California, good to choice store	17½	@18½
Eastern firsts	—	@—
Eastern seconds	—	@—

Vegetables.

Asparagus was in heavy receipt and averaged lower. Tendency of the market for most kinds of fresh vegetables was to easier figures, Tomatoes being about the only exception. Choice Tomatoes were scarce; a carload of this vegetable is on the way here from Florida. Rhubarb was plentiful and cheap. Market for Old Onions was easier. Green Onions were in

fair receipt. New Red Onions will be soon arriving freely.

Asparagus, No. 1 to choice, ℔ lb	5	@	6½
Asparagus, No. 2, ℔ lb	4	@	4½
Beans, Lima, ℔ lb	—	@	—
Beans, String, ℔ lb	8	@	10
Beans, Wax, ℔ lb	—	@	—
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Egg Plant, ℔ lb	15	@	—
Garlic, ℔ lb	10	@	15
Mushrooms, ℔ lb	—	@	—
Onions, Australian, ℔ ctl	5 00	@	—
Onions, Yellow Danver, ℔ ctl	4 50	@	4 75
Peas, Green, ℔ lb	3	@	5
Peppers, Bell, ℔ lb	—	@	—
Peppers, Green, ℔ lb	12½	@	17½
Rhubarb, ℔ box	35	@	75
Summer Squash, small box	1 00	@	1 25
Tomatoes, Los Angeles, ℔ box	—	@	—

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Market was not heavily stocked with Old Potatoes, but demand was slow and there was an easier tone. Receipts of New Potatoes showed decided increase and prices were at a lower range.

Cal. Early Rose, ℔ cental	—	@	—
Salinas Burbanks, ℔ cental	—	@	—
River Burbanks, ℔ cental	75	@	1 20
River Reds, ℔ cental	85	@	1 00
Oregon Burbanks, ℔ cental	1 00	@	1 70
New Potatoes, ℔ cental	1 25	@	2 00
Sweet Potatoes, ℔ cental	—	@	—

Fresh Fruits.

Blackberries put in an appearance for the first time this season on Saturday last, a crate containing thirty small baskets arriving from Glendora, Los Angeles county. The berries were in very fair condition for this extremely early date and brought 20c per basket. Cherries were in increased supply and lower, with market weak for other than strictly choice to select; offerings were largely of ordinary qualities. Strawberries arrived freely, but were largely in poor condition, showing much unripe and dirty fruit; this sort dragged at low figures; choice brought tolerably good prices. Apples were in fair supply; a carload of 4½ and 5-tier boxes arrived from Los Angeles cold storage and were quoted at $1 per box.

Apples, fancy, ℔ 50-box	2 00	@	2 25
Apples, good to choice, 50-lb. bx	1 50	@	2 00
Apples, fair to good, ℔ box	1 00	@	1 50
Cherries, Black, good to choice, bx	1 25	@	1 50
Cherries, Purple Guigne, ℔ box	75	@	1 25
Cherries, White, good to choice, bx	65	@	90
Strawberries, Longworth, ℔ chest	5 00	@	9 00
Strawberries, large var., ℔ chest	3 00	@	6 00

Dried Fruits.

Movement is fair, considering the light spot stocks of most descriptions. The steamer Senator, sailing the past week, carried for British Columbia and Northwest Territory 73,715 lbs. dried fruit, exclusive of Raisins. The above shipments included 53,849 lbs. Prunes, 8750 lbs. Peaches, 4600 lbs. Apricots, 4516 lbs. Pears. The steamer City of Puebla, sailing yesterday for British Columbia, carried 15,500 lbs. dried fruit, including 9750 lbs. Prunes, 2500 lbs. Apricots, 2500 lbs. Peaches. There is a firm tone to the Prune market, owing to poor prospects for coming crop. Large sizes are now in very scanty supply. Some dealers are talking 6¾@7c for early deliveries of Royal Apricots, but there is no certainty of choice stock being obtainable at these prices. While the setting of Apricots is heavy in many sections, serious damage is reported from shothole fungus. There will likely be very few Pears dried this season, as the crop is light. Peaches promise a fair yield, and of Apples there will likely be no scarcity.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	5½
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	10	@	12
Apricots, Royal, good to choice, ℔ lb	8	@	9
Apricots, Royal, fancy	10	@	11
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	8	@	8½
Peaches, unpeeled, fancy to extra fancy	9	@	10½
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	10½
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4@4¼c; 50-60s, 2¼@2¾c; 60-70s, 2@2¼c; 70-80s, 1¾@2c; 80-90s, 1¾@1¾c; 90-100s, 1¾@1½c; small, 1@1¼c.

COMMON SUN-DRIED.

Apples, sliced	3½	@	4½
Apples, quartered	3½	@	4½
Figs, White, in bulk	2	@	2½
Figs, Black	2½	@	4

Raisins.

The market is quiet and values without quotable change. The steamer Senator, sailing for British Columbia, carried 9,250 lbs. and steamer City of Puebla for same destination took 5,000 lbs. The coming crop of Seedless promises to be much lighter than last year, owing to frost damage. Muscatels have also suffered from frost in some sections. Packers report some contracting at about 2¾c. in the sweat box.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3¼	@	3½c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4½c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Oranges were in liberal stock, but the proportion of choice to select was not large. For the general run of offerings the market lacked firmness. Some of superior quality commanded in a limited way from special custom a moderate advance on quotations. Lemons were held at generally unchanged figures, but offerings were more than ample for the demand, which was not particularly active. Limes were not in heavy supply and last quoted advance was maintained.

Oranges, Navels, choice to fancy, ℔ bx	1 75	@	2 25
Oranges, Navels, fair to good, ℔ box	1 25	@	1 50
Oranges, Seedlings, ℔ box	1 00	@	1 25
Oranges, Cal. Tangerines, half box	1 25	@	2 00
Oranges, Blood, ℔ box	—	@	—
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ℔ box	1 25	@	2 25
Limes, Mexican, ℔ box	4 50	@	5 00

Nuts.

Not much doing in either Almonds or Walnuts. Stocks are of fair volume for this time of year, but are mostly in second hands and are being in the main steadily held.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

The wholesale wine market is ruling quiet in this center, quotable values and the general tone remaining practically as previously noted. Dry wines of last vintage are quoted at 14@17c. per gallon, San Francisco delivery, but there is little now offering which would in a regular way command the top figure. Sweet wines of 1904 are obtainable at 25c. per gallon at wineries, packages if furnished to be returned, or at 27½c. per gallon San Francisco. The steamer Newport, sailing Saturday last, carried 54,526 gallons wine, including 50,029 gallons for New York. Receipts of wine at San Francisco last week were 221,000 gallons and for previous week were 254,925 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	101,576	3,793,497	4,623,796
Wheat, ctls	44,332	2,497,044	2,051,436
Barley, ctls	25,545	3,157,136	5,051,854
Oats, ctls	3,412	806,814	808,762
Corn, ctls	13,102	226,518	140,144
Rye, ctls	2,278	49,763	51,601
Beans, sks	4,269	594,132	676,163
Potatoes, sks	23,752	1,138,080	1,149,709
Onions, sks	4,015	122,243	140,450
Hay, tons	2,412	155,523	149,427
Wool, bales	5,093	57,200	45,762
Hops, bales	54	39,080	29,316

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	69,312	2,506,616	2,942,276
Wheat, ctls	338	804,369	903,418
Barley, ctls	7,982	1,836,963	4,039,685
Oats, ctls	508	76,682	21,102
Corn, ctls	9,303	102,877	16,492
Beans, sks	643	47,245	36,222
Hay, bales	1,621	212,213	210,086
Wool, lbs	....	830,690	2,067,233
Hops, lbs	4,796	376,533	583,336
Honey, cases	251	2,422	4,753
Potatoes, pkgs	2,009	101,278	100,456

Farmers' National Congress.

The next annual session of the Farmers' National Congress will be held in Richmond, Va., Sept. 12-22, 1905. The congress is composed of delegates appointed by the Governors of the various States on the recommendation of the agricultural organizations of each State. The president is Hon. Harvie Jordan, Monticello, Ga., and the secretary is John M. Stahl of Quincy, Ill.

TWENTY-FIVE-CENT WOOL.—Wheatland Four Corners, April 22: C. K. Dam disposed of his remaining lot of wool last Friday at the highest figure paid in this section, 25 cents per pound. There were 4500 pounds in the lot, which represents a snug sum. This, we understand, was the last lot of wool to be disposed of in this section.

IS IT INHERITED?—Watsonville Pajaronian: C. C. Hoyt of Pajaro works a mare that is naturally vicious, and if the line happens to get under her tail she will kick until something breaks. Knowing her disposition he has always tied her tail to one side to keep her from switching it over the line. By this means he has had no trouble in working her. A few weeks ago she gave birth to a freak colt. It was a tiny bit of horseflesh, only standing 26 inches high, and the peculiar part about the affair is that its tail has been and is yet curled around its hip. The curve in the tail is quite stiff, and like its mother it is very sensitive of its caudal appendage, for but a touch on this particular part will start it to kicking with all the force its tiny body can muster. Mr. Hoyt says that frequently it will back up against its mother, and as soon as its crooked tail is touched it will let go with both hind feet.

THE ALMOND OUTLOOK.—Yuba City Farmer, April 21: The general outlook for almonds in this section is that there will be from two-thirds to three-quarters of a crop. Advices from Davisville are that the crop there will be one-half of the average. In the Chico district about the same conditions prevail as here, and reports from there are that buyers are already in the field making contracts. We understand that as high as 11½ cents per pound has been offered in that section for the Hatch varieties, which would indicate that prices would be as high or nearly so as last season. It is expected that the local Almond Growers' Association will hold a meeting this spring to consider matters relative to the business of the organization.

MILCH COW KILLED BY LIGHTNING. Marysville Democrat, April 20: Tuesday of this week, while the heavy storm was in progress, a cow belonging to W. A. Wedderein, who conducts a dairy in Linda township, was struck by lightning and killed. The animal was grazing along a barbed wire fence and it is presumed the lightning struck the fence some distance away and followed it to where the cow stood.

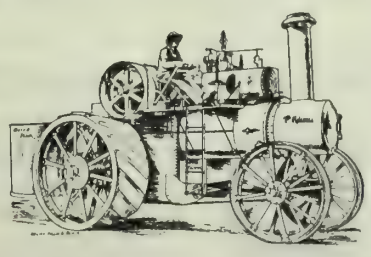
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PLANTING TOMATOES TO SUPPLY CANNERY.—Yuba City special to Sacramento Bee: R. W. Skinner of the Sutter Preserving Co. has a large force of men planting 100 acres to young tomato vines on the Spangler ranch, located about two miles south of town on the Feather river. The product of the vines will be canned at the local plant of the company. A number of ranchers and truck farmers residing along the river bottom and Yuba City slough are planting out tomato vines and will be given a market at the local plant of the Sutter Preserving Co.

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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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THE VETERINARIAN.

Some Troubles of Swine.

By Dr. C. L. Barnes, Veterinary Department, Experiment Station, Kansas State Agricultural College.

Paralysis of Hogs. — Within the past year a large number of reports have come to this office from different parts of the State of what appears to be a paralysis of the back and limbs of hogs. The young pigs are the ones most generally affected. The cause has been found to be from overfeeding young, growing pigs on an exclusive diet of corn and water. Fat is put on the pigs too rapidly, with the result that the weak bones of a growing pig can not support the rapidly put on flesh. The first symptoms noticed are that the pigs refuse their feed and walk rather stiffly, continuing to grow worse until they can barely raise themselves upon their front legs. The pigs die of starvation, as they can not drag themselves to the trough.

Treatment.—To prevent young pigs getting sick, a very small amount of corn should be fed them while nursing their mothers. Then gradually increase the amount of corn. When weaned, feed ground feed of bran, shorts, corn, and a little bonemeal mixed with sufficient milk to make a thin slop.

After young pigs are paralyzed it is best to take all corn away from them and see that they are placed at a trough of milk in which has been stirred bran and the following tonic, which is recommended by the Bureau of Animal Industry as a preventive against hog cholera and swine plague and which is also a very good tonic for hogs:

	Pounds.
Wood charcoal	1
Sulphur	1
Sodium chloride	2
Sodium bicarbonate	2
Sodium hyposulphite	2
Sodium sulphate	1
Antimony sulphide (black antimony)	1

These ingredients should be completely pulverized and thoroughly mixed. The dose of the mixture is a large tablespoonful for each 200 pounds weight of hog to be treated, and it should be given only once a day. When hogs are affected with these diseases they should not be fed on corn alone, but they should have at least once a day a soft feed, made by mixing bran and middlings, or middlings and cornmeal, or ground oats and corn or crushed wheat with hot water, and then stirring into this the proper quantity of the medicine. Hogs are fond of this mixture; it increases their appetite, and when they once taste of food with which it has been mixed they will eat it, though nothing else would tempt them.

Animals that are very sick and that will not come to the feed should be drenched with the medicine and shaken up with water. Great care should be exercised in drenching hogs, or they will be suffocated. Do not turn the hog on its back to drench it, but pull the cheek away from the teeth so as to form a pouch, into which the medicine may be slowly poured. It will flow from the cheek into the mouth, and when the hog finds out what it is it will stop squealing and swallow. In our experiments, hogs which were so sick that they would eat nothing have commenced to eat very soon after getting a dose of the remedy and have steadily improved until they appear perfectly well.

This medicine may also be used as a preventive of these diseases, and for this purpose should be put in the feed of the whole herd. Care should, of course, be taken to see that each animal receives its proper share. In cases where it has been given a fair trial it has apparently cured most of the animals which were sick and has stopped the progress of the disease in the herds. It also appears to be an excellent appetizer and stimulant of the processes of digestion and assimilation, and when given to unthrifty hogs it increases the appetite, causes them to take on flesh and assume a thrifty appearance.

Worms in Hogs.—Hogs affected with worms in the intestines run down in condition, become very thin and lank, back is arched, eyes dull, refuse feed, walk stiffly and appear lifeless. The worms may be very numerous, in bad cases completely filling the intestines. The pigs die if not treated. To secure the best results affected hogs should receive individual treatment. Twenty-four hours before administering treatment very little feed should be given them. Then give the following medicine as a drench to each 100-pound hog; larger or smaller hogs should receive a dose in proportion:

Oil of turpentine	4 drachms
Liquor ferri dialysatus	½ drachm
Raw linseed oil	6 ounces

If necessary, repeat the dose in four days. After worms have been removed, give the tonic recommended above to put the hogs in fine condition.

Tumors on Pigs.—Bunches form on the cords of pigs after castration as a result of infection from dirty instruments or hands, etc., during the operation; or from leaving the cord too long, thus increasing the liability of its becoming infected. These tumors continue to grow and in the worst cases assume the size of a man's head.

Cut down on the tumor, the same as in a simple case of castration. Separate the skin from the tumor and then follow up the cord with the hands. Cut the cord off as high as possible. The wound may be healed by the use of any of the common disinfectants. A teaspoonful of carbolic acid in a quart of water may be used once daily until the pigs are healed. Pigs should be kept in a clean pen after the operation.

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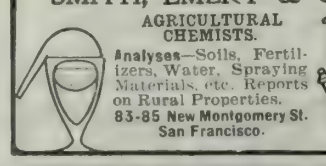
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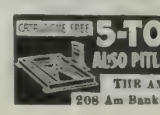
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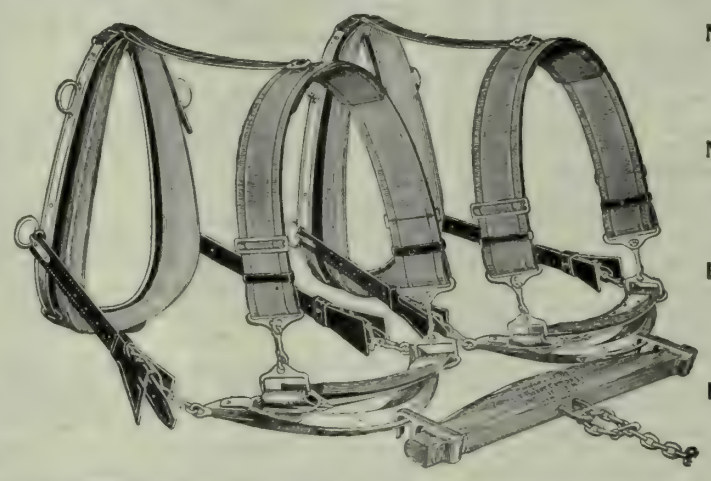


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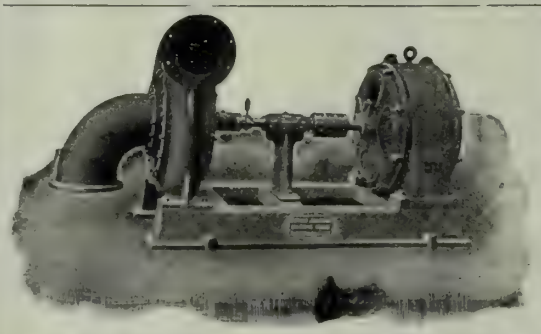
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Ownership of Water by Corporations.

Paper Read Before Tulare Grange April 15th by Emmet Barber.

"Is it wise for the residents of this valley to let the water rights of the mountain streams be acquired by private corporations?"

The water of all the streams should be owned and controlled by all the people, and not allowed to be used for power purposes until the corporations have acquired a right to the water that the people can never recover.

Once the people lose their rights they are at the mercy of the corporations, and cannot count the loss in dollars and cents, which will occur to the coming generations.

All waters in the streams should be owned and controlled by the State and nation, and laws should be enacted to prevent the title to water from ever passing to individuals or corporations.

Riparian rights are only intended for countries that do not irrigate, and should not be allowed, except in rare cases, and should never be permitted in countries where irrigation is necessary, as it allows the selfish and unprincipled to acquire rights to the great injury of the community or land owners adjacent to the stream.

The right to water should only be for use, and not to sell or hold to detriment of the user; the water was not intended for speculation or to hold out of use.

Wyoming and other States have laws passed many years ago giving the State the right to distribute all the waters, but in no cases are corporations allowed to divert the water, and acquire a title to it to the detriment of the users, but the State has full and complete control of the waters at all times.

The water should belong to the land for a just use and control by the people, and if it were stored and held until needed there would be sufficient to irrigate double the area now under irrigation, but if diverted for power purposes until corporations have acquired a right to it as property, it could be used for the injury instead of the benefit of the people.

The wisdom of the people is to cooperate together and hold to their rights as land owners the water which belongs to the land, and which will get to be more valuable in the near future, as long as we expect to irrigate from the mountain streams.

The corporations may be permitted to use the water for power purposes, but never to acquire a right to deprive the land owners of the water for irrigation purposes.

When the corporations have acquired a right they are very sure to demand of the people exorbitant and unjust rates for their services, and if once in their power it is hard to get away from them.

Now if the people of the San Joaquin valley continue to allow the corporations of the State to acquire the water right of our mountain streams, without a warning voice, it will be to their great sorrow and injury.

Our Boards of Supervisors should be warned of the great importance of placing restrictions around all franchises granted corporations, for the purposes of using the waters of the mountain streams, either for power or irrigation purposes, and no franchise should be granted without the right of the county or State to take over such plant by paying a just compensation therefor.

The people's rights should not be given to corporations without the consent of a majority, and when such consent is obtained, the franchise should be safely guarded so that there will be no ultimate loss, and when the people are prepared to own and operate the power plants, or irrigation works, for their benefit, there should be nothing in the way to prevent.

The day is fast approaching when the people must own the corporations and trusts, or they will own the people.

A Boy's Plea for the Country.

To the Editor:—My name is Philip Lester. I am twelve years old. My grandpa wanted to know about something once and when he wrote to your paper people wrote and told him about it when they read his letter. So I thought, maybe, that would do now.

My father is a carpenter and he is the best man, but we children are always sick and so we can't save any money, and I am so tired of always having sore throat, and the doctor says if I could go barefooted and run around in the sun away from the cold winds and fog I would get strong.

Papa has tried and tried to find a place to rent, but he has to work, and we don't know where to look, and once we advertised, and nobody but people who wanted a year's rent down or all of $25 or $30 a month answered.

Don't you think there is anybody who has a little place big enough to keep a cow and have a garden and a little fruit, and a house that won't leak, who would rent it for $10 or $11 a month? All of us would be very good, and we could pick fruit and do lots of things. Father would work in the city and come home Saturday night and Sunday and when work was dull.

We do hate the city so. I don't believe God ever meant boys and girls to live in flats and be shut up out of the sun, and then when you try to have a little garden have the neighbors' children pull up everything, and call you baby because you like to see things grow and fight when they are spoiled.

I don't want to stay in the city, because I mean to be a farmer like grandpa was. It was pleasant even on rainy days there. We think we could get a garden started and we would save as much as ever we could and get enough to start to pay for a place, and all of us could help. Here we can't help, and it costs so much for clothes, and always doctor bills.

Philip Lester.

Station 3, San Francisco, Cal.

We cannot undertake to print many accounts of personal wants, but Philip's plea for fresh air and sunshine strikes us in a tender spot, and we hope the Pacific Rural Press may help him, as it did his grandfather, to find what he wants.

Sonoma Pomona Grange.

The regular monthly meeting of Sonoma County Pomona Grange was held Wednesday in Santa Rosa, and reported by the Press-Democrat. There was a large attendance and much interest was evinced in the proceedings. It was an all-day session and a fine banquet was served at noon which was prepared by the ladies of Santa Rosa Grange under the direction of Mrs. Harvey Gregory and Miss Fannie Gamble.

Peter Hansen, Master of Pomona Grange, presided and the morning session was occupied mostly in listening to reports from the subordinate Granges. All showed a healthy growth in membership and a good financial condition. The members present from the fruit growing sections reported a small shortage in the peach, prune, pear and cherry crop. All the reports stated that the apples, grapes and berries are in excellent condition and the prospects for a heavy yield are good.

The legislative committee consisting of W. V. Griffith, chairman, Joe Talbot and A. E. Burnham, reported on the University farm and were directed to arrange for a mass meeting of all interested in the near future to arrange ways and means and a plan of procedure.

It was announced that the annual picnic of Bennett Valley Grange would be held on May 27, and a cordial invitation was extended to all members of the Order to attend. The meeting adjourned at 4 o'clock to meet in Petaluma, Saturday, May 13.

Among those from out of town who attended the meeting of the Pomona Grange were the following from the Granges named:

Bennett Valley—Mr. and Mrs. Peter Hansen, Joseph M. Talbot, Mr. and Mrs. John Strong, Mrs. Lena Clark, G. N. Whitaker, Thos. Collins.

Geyserville—W. V. Griffith, Overseer of the California State Grange; J. E. Metzger.

Sebastopol — H. H. Meeks, G. N. Sanborn, M. Litchfield, Mrs. E. E. Miller, James McKenzie, J. K. Howard.

Petaluma — Mr. and Mrs. C. D. Grover, Miss Nellie Grover, John Caltoft, M. D. Hopkins, Mrs. L. V. Aldrich, Mrs. H. F. Lubben, K. G. Raf.

Two Rock—Mr. and Mrs. Theo. King, Mr. and Mrs. Rollo Andrews.

Healdsburg—A. E. Burnham.

What the Old Mare Did.

Peter Jensen, an extensive stock grower of Austin, Nev., when visiting Sacramento told the Union reporter a good horse story. From one of Mr. Jensen's ranch places to Tonopah is a desert drive of 100 miles, with a single watering place intervening, and Mr. Jensen has been making this trip for several years past, carrying a little water during the longer stretch, which is about 60 miles. Not long ago he substituted a colt for one of the regular team and started for Tonopah. Descending at the watering place, which is merely a spring in the desert, Mr. Jensen proceeded to refill his water buckets. While so engaged, the colt became restless and finally caught the bridle on the end of the neck yoke. The stockman's nerve almost deserted him as the colt, thoroughly frightened, started off at a mad gallop, dragging the light wagon and the other horse along at a breakneck pace. It was 40 miles to the ranch house behind and 60 miles to Tonopah, either route stretching across a trackless desert, little traveled, and where he was accustomed to steer by the sun.

The colt continued to gallop until the other horse, an old mare long driven by Mr. Jensen, recovered from the surprise of the first rush. Then, says the stockowner, she deliberately laid down in the harness, and the colt, not being able to budge her, was obliged to stop. When Jensen reached home, in appreciation of the old mare's beneficent action, he gave orders that she should be turned out in the best pasture and never again be harnessed.

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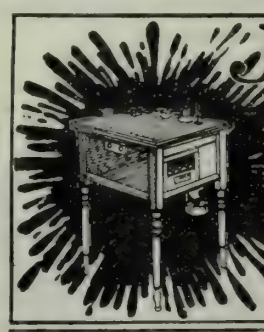

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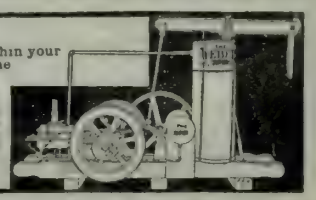
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THE FIELD.

Grasshoppers as Diet.

In the Philippines the grasshoppers are not only in great numbers, but the size of the insect is large. There are those who make a business of catching the grasshoppers during the best season for them, which is in May, June, July and later. At first the grasshoppers begin to appear in swarms, but of small size. As the grasshopper grows the proportionate increase in size of the swarms is noticeable. At first the clouds of hoppers passing overhead seem something like a hazy atmosphere; after a few weeks growth the clouds of hoppers become dark and heavy. They fly in numbers, and the day is darkened as soon as swarms of hoppers appear in any vicinity. They usually light in the pastures, where they live on the smaller insects, the grass and the vegetation in general. When a swarm of full-sized grasshoppers lights on a farm or other productive land the vegetation is almost completely eaten off. In the meantime, however, the owner of the land, with all his neighbors, have been hard at work catching the grasshoppers.

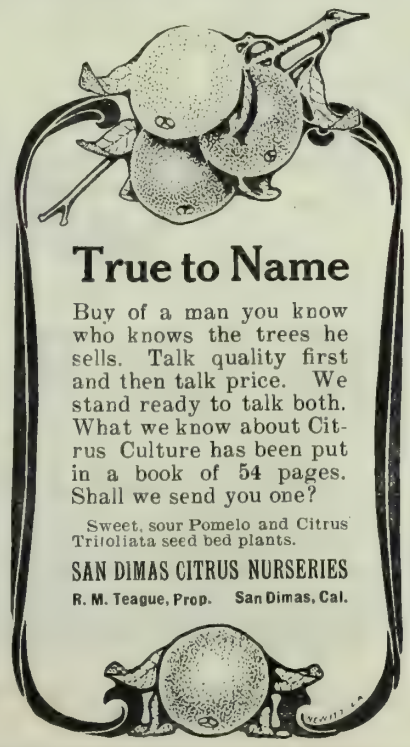
The mode of catching the grasshoppers in the Philippines is interesting. There are always two or three bell boys stationed in towers of the big church of each city, town or barrio of the Philippine group, these boys being there for the purpose of sounding the various signal bells. There are certain strikes for funerals, others for births, and at present there are signals for the approach of an army. These boys in the tower keep a sharp lookout for indications of the approach of grasshopper swarms. During the hopper season they are particularly active and announce the approach of the swarms as soon as seen, for the grasshoppers often merely pass over a town, but usually low enough to permit the natives to catch many of them. As soon as the bell boys see that there are some scattering grasshoppers in the air, as an advance guard to the main body, they sound the proper signals on the bells, and hundreds of expert grasshopper catchers, with their nets, turn out.

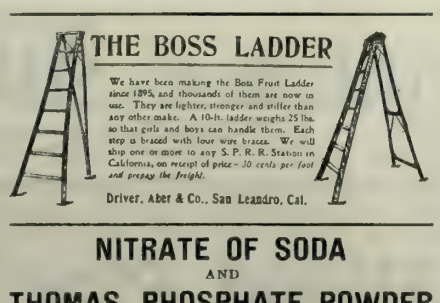
There are several methods used by the natives for catching grasshoppers. The most effective is the net. This is a large butterfly net, arranged with netting placed over a hoop, and to the latter is fixed a long handle. The native takes this handle, and, with the mouth of the net toward the grasshoppers, he rushes forth, bagging considerable numbers at each run. The grasshoppers always go in swarms, except the advance guard and the stragglers, and if anything occurs to disturb their flight they get confused and tumble into bags readily or fall into the open mouths of nets. They fly so closely that they cannot escape, as when they turn slightly out of their course they come into contact with other grasshoppers next to them.

The hopper is first so thoroughly dried out in the heat of the sun or in the bake oven that there is nothing left that is really objectionable, and a nice crispy article of food results. This tastes sweet of itself, and something like ginger biscuits. The natives usually sweeten the grasshopper more by using a sprinkling of brown sugar. Then the confectioners make up grasshoppers with sugar, chocolate trimmings and colored candies in such a way that a very nice tasting piece of confectionery is obtained. The housewife of the Philippines takes considerable delight in placing before you a nice grass hopper pie or cake. The grasshopper pie is the most wonderful dish, as the big hoppers are prepared in such a way that they do not lose their form or any of their parts. Care is taken to keep the grasshoppers intact, and they are artistically arranged on the top crust of the pie, while in the interior are some of the broken hoppers, mixed with special foods. The grasshopper cake has the grasshoppers sprinkled through it, and resembles plum or raisin cake. In some sections of the islands the natives grind the crisp hoppers into a fine powder, and this powder is used for making articles of food, and in some places it is reduced to liquid form and taken as an article of drink.

Another article of food which is relished by the natives is procured by collecting large quantities of moths from the rocks of the mountainous regions. In several spots in the mountains in Panay and other islands of the southern portion of the Philippine group moths exist so thickly in the rocky tissues that they can be scraped off into buckets by the quart. The moths seem to mass in the crevices and there hang. One could get a barrel of the moths in a very short time. The natives have not failed to investigate the worth of the moth as an article of food, and they use the insect in quantities. Their mode of catching consists in going to the hills in parties of a dozen or more, with the proper bags and articles for collecting the moths. The scraping process is used in some sections of the island, while in Negros Isle, particularly, I noticed that they adopted a somewhat different scheme. Here they spread a bamboo mat on the ground beneath an overhanging colony of the moths, and then proceed to disturb the insects with the point of a spear or piece of bamboo. The little insects lose their hold and drop to the mat. They are slow of action, and before they can crawl away the game is bagged.

The dainty natives will not eat the wings or the heads of the little moth, and so they now take steps to remove these objectionable parts. This operation consists in creating heat to such an extent that the tissues in the heads and wings become baked and crumble off. The natives accomplish this end by cutting holes in the earth, in which hot fires are burned until the earth is quite hot. Then the hot coals are taken away and the moths are put into the highly heated openings. The intense heat crisps the head and wings to ashes, so that when removed from the hole and subjected to a sifting operation through netting the powdered parts are sifted off, leaving only the body. This process also does away with the legs.—Health.





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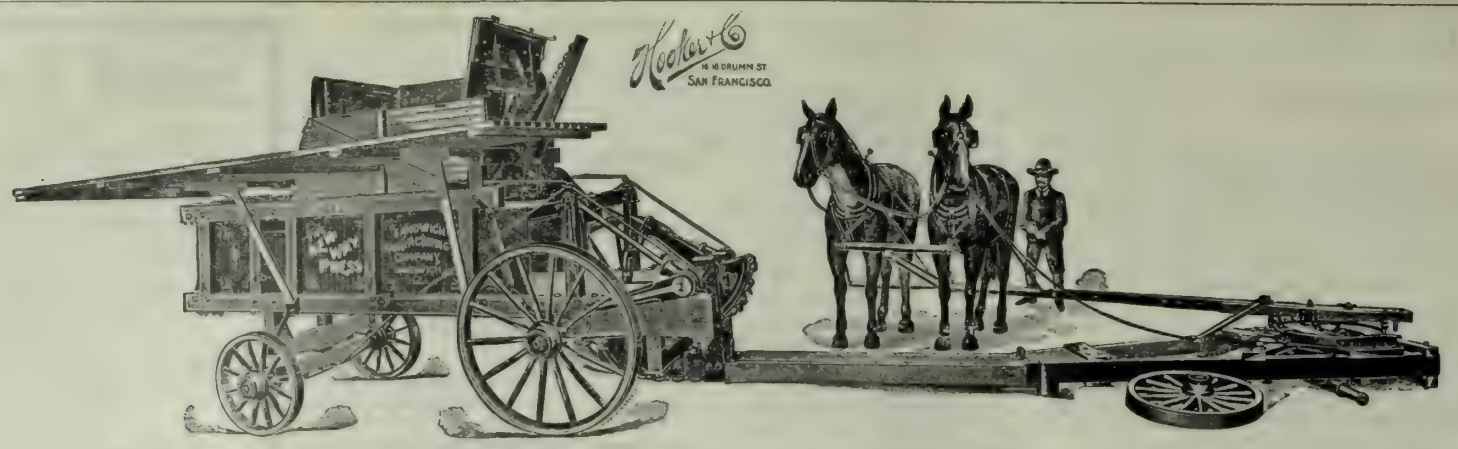
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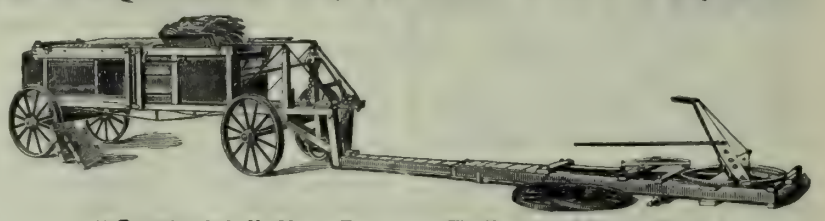
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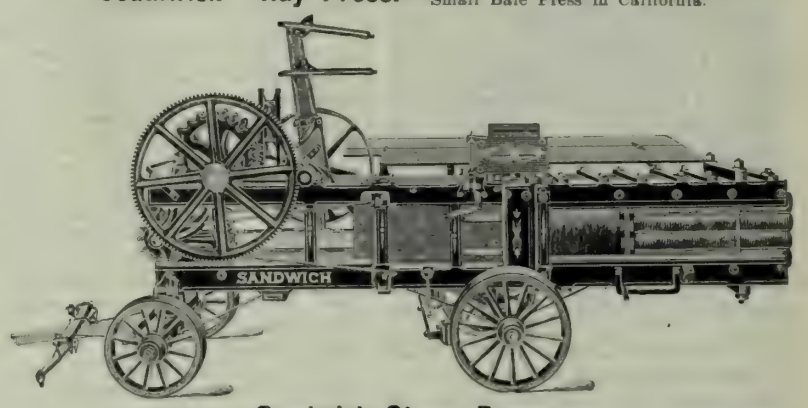
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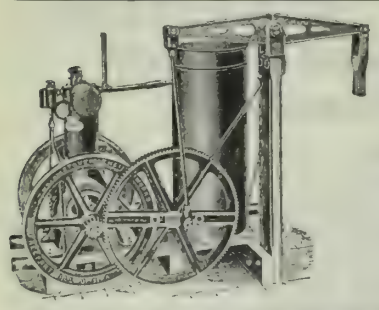


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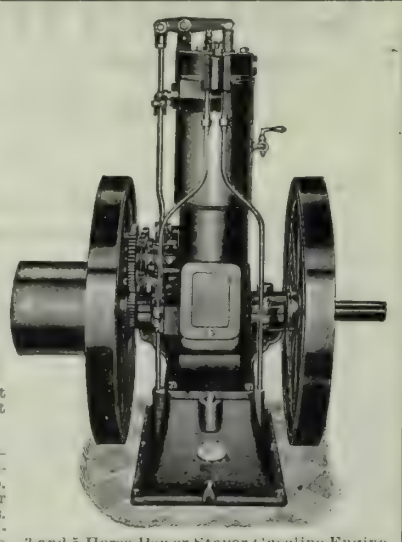
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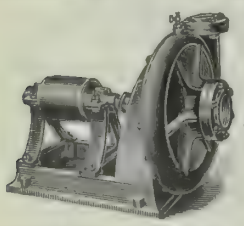
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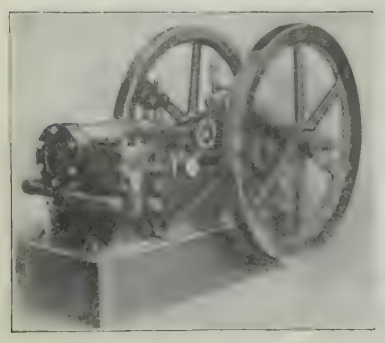
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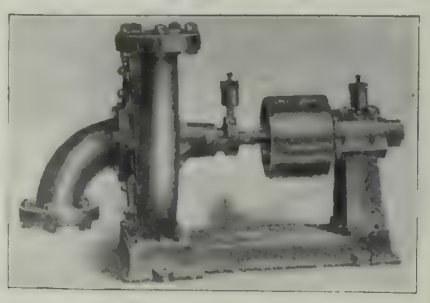
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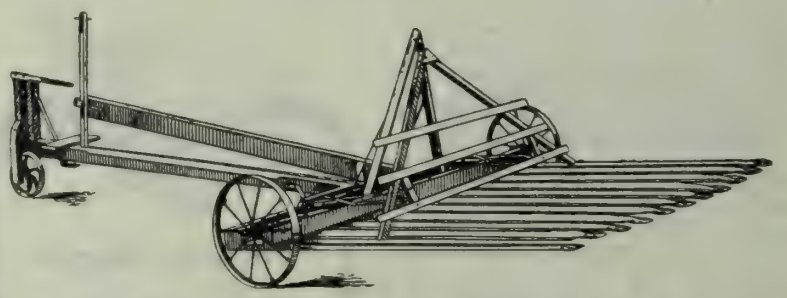
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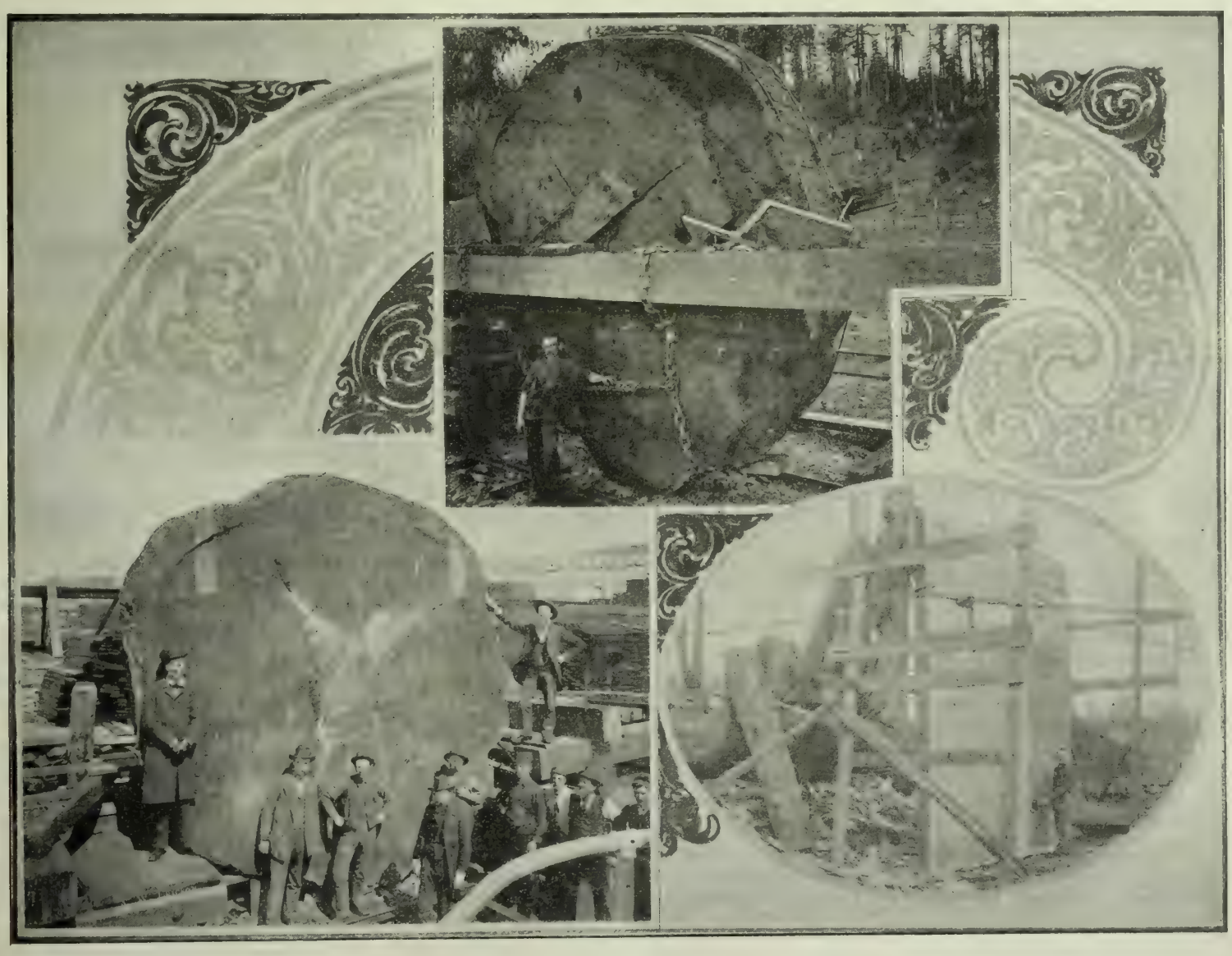
THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 18. SAN FRANCISCO, SATURDAY, MAY 6, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

The Popularization of the Redwood.

The great world's fairs, like the Centennial of 1876 and the half dozen or so which have followed, have given grand opportunities to bring the big trees of California—both of the Sierra and the coast regions—to the attention of the civilized world, and our people have embraced them in a most enterprising manner. At first the plan was to take bark sections and set them up in natural relation to show the actual girth of the trees. After that was worked out as an exhibition plan, cross sections of the wood were chosen and they, too, served a good purpose. Later still, in process of preparation. Both the cross section of the trunk and the longitudinal section in the form of a plank or slab are shown and their size indicated relative by the figures of the bystanders.

The Humboldt Souvenir has a very full and interesting historical statement of the ways in which redwood was brought to the attention of those using materials for costly and elegant interior finishing. Probably all our readers have never heard how railroad rivalry worked toward the exaltation of California redwood. One of the most notable triumphs for redwood in the various tests in fine and rich finishing work was presented at the World's Fair at should be constructed, the only point insisted upon being that it should be the most completely equipped and magnificently appointed train in the world. It would be hard to conceive of a limit to the uses of redwood, or to the possible market for it, if systematic and united effort were made to place before the people of sections where it is unknown the practicable evidences and testimonies of its merits, which may be had by diligent inquiry. The possibility for the expansion of the trade has been greatly enhanced since the freight rates from Humboldt to points east of the Rocky mountains and the Mississippi have been decreased and systematized. At



Preparation of Humboldt County Redwood Exhibits for the World's Fairs.

arge planks, designed to show size of the cut and partly polished to show desirable finish, were resorted to and distant people got the idea that these trees were not only exponents of our climate and of the wonder of our natural growths, but that the lumber which they furnished was of unique beauty and of exceptional adaptability to the higher uses of interior finish of the most costly and beautiful buildings. There followed a growth of the export trade in California redwood and its products which drew increased capital to our lumber regions and itself in turn vastly increased the export trade, bringing new development to some parts of the State and new advancement to the State as a whole. In view of the industrial importance of this growth, it seems to us interesting to reproduce from the Humboldt Souvenir of the Eureka Times a photographic plate showing some of these very influential and significant exhibits Chicago by the Pennsylvania Railroad Company. This company, in 1892, built a magnificent train of passenger coaches to run from New York to Chicago. Immediately following this move, the New York Central ordered a richly finished train built, which was accounted a finer equipment. The Pennsylvania Railroad then ordered another splendidly finished and appointed train to best their competitors of the New York Central; and again the New York Central followed suit by ordering another train to compete in magnificence and outdo the Pennsylvania Company in richness and beauty. Then the latter company, after considering the course pursued by their competitors carefully, went to George Pullman and explained the situation and what they wanted, which was to have the finest passenger train in the world to run from New York to Chicago, and it was left entirely to him how and of what materials it this time redwood shingles can be shipped from Humboldt bay to Chicago on a 60-cent rate and to New York and Boston via the Isthmus on a 67½-cent rate, being the same rate allowed to other lumber districts. These reduced rates have made it possible for redwood to be used in the Eastern States.

Wherever the possibilities of transportation place it in competition with other woods on equal grounds, the redwood scores a success without fail; and now that transportation is placing this lumber on the Eastern seaboard at figures that make its use in the construction of fine residences possible, it may be reckoned upon as certain that in the very near future the now worthless gigantic stumps will develop a value, and specially constructed mills will before long be erected to reduce them to merchantable building material, particularly for fine finishing work, since it is both durable and ornamental.

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SAN FRANCISCO, MAY 6, 1905.

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The Week.

Barring some injuries to berries and cherries and a little early hay, the widespread and heavy rain of Monday has been of immense value, helping much spindling grain out of the crust and helping a very large acreage toward some profit, no doubt. It is rather unusual to have a May rain so heavy and wide reaching, but this year is setting its own pace on the water question and most people will like the way of it.

People will also be satisfied that the first of the boodling bunch of State Senators who sold their honor for a few greenbacks has been found guilty and sentenced to State's prison. It is well to punish a legislative rogue, because it is not possible to punish the people who are responsible for getting such a rogue into a position to be voted for. If our neighborhoods will not take personal interest in local politics and insist upon character as an essential to candidacy of any kind, there is little hope that imprisoning a rogue will cure legislative corruption. The whole matter lies back of the rogue; but one rascal's punishment may hold up a few others to public decency. If you can not awaken the public conscience before the crime is committed, it is better to awaken it afterwards than not to awaken it at all.

Grain charters are unchanged and firm and ships holding for something better. Spot wheat is dull, with milling nominally 50 cents off per ton. December futures are easier, but May deliveries are unsettled and just at present rising to make it interesting for the shorts. May wheat has even been rated above spot. Barley is steady and in light supply, but the demand is not active. Feed oats are in fair supply. Six hundred tons of corn has gone to Central America, but all kinds are weak but fancy white. Desirable beans are firm. Millfeeds are weak and downward. Hay is firmer for strictly choice, but most offering is common and unchanged. There is nothing new in meats. Butter is held steady by free storing demand, but cheese is weak, owing to larger supplies and lighter demand. Eggs are held barely steady by the storage buyers. Common poultry is weak, but choice turkeys, young roosters and friers are firm and fine broilers doing a little better. Old potatoes are slow and the demand light; new are in freer receipt and better quality. New red onions arriving freely and going at 2½@3c, but prices hardly settled yet. The only old onions are the Australians. Asparagus remains high, and scant supply. Florida and Mexico tomatoes are in, and held high. Apples from storage are dragging. Oranges are quiet and few fine are offering; lemons unchanged. Cherries are in lighter receipt and firm. Strawberries are also held back by the rains. A few blackberries and dewberries are in from the south and some loganberries from Watsonville, also some raspberries and gooseberries. Dried fruit is firm; prunes are held higher because of the outlook for a short crop. Futures on apricots are quoted at 5¾@6c, as they run from the orchard. There is nothing doing in nuts—and honey is easy. Hops are held up by growers. Wool sells itself. The orders to country buyers are: "Get wool as cheap as you can—but get the wool."

With a State as large a buyer of outside beef stock as California, it seems strange that we should be shipping to Chicago, but Chicago wants beef just now and will pay high for something good. For this reason probably a trainload left Merced county April 26th at noon and was unloaded to feed at Reno the morning of the 27th. It started from Reno at noon April 28th and reached Ogden, 583 miles, in twenty hours and seventeen minutes—approximately the same time made by ordinary passenger trains, and only four hours and thirty minutes slower than the Overland limited. Moving stock practically at passenger time is all right and should be undertaken with the fruit trains also. There is a good deal of a chance for improvement and the haste of these cattle should be instructive.

The architectural feature, which seems each year to be gaining ground in displays at great expositions, will be much in evidence at the Portland Fair, which opens next month. We hear that one of the most striking exhibits will be the hop farm, with kilns and other buildings, which is being prepared by Lovdal Bros. This miniature hop farm is a reproduction on a small scale of the Lovdal property, near Sacramento. Another of the star features is the State Capitol in nuts, prepared by the Sacramento Chamber of Commerce. This structure will be 11 feet in length and about the same in height. The architecture of the State Capitol is well copied in this structure and it will command the attention of every visitor to the California State building.

The two provisions for the extension of agricultural work at the University of California, made by the last Legislature, viz., the purchase and equipment of a University farm and of a new pathological laboratory and experiment station in southern California, are receiving the active attention of the two commissions, whose duty it is to select the sites, etc. There is still time to submit propositions by those who are interested. There are some facts about the farm selection upon another page of this issue, and details of the other enterprise will appear next week.

It is announced from Los Angeles that Charles Hatfield, a "rainmaker" who has been working since December 15th last to produce 18 inches of rain for southern California by May 1st on a pledge of a number of Los Angeles merchants to pay him $1000 if he succeeded, has completed his demonstration and has been paid a large proportion of the sum promised. This payment is apparently made because the fall of rain in Los Angeles during the season ending May 1 was 18.96 inches, which far exceeds the fall of last season and is above the normal annual precipitation. It is certainly very kind of the Los Angeles merchants to pay Hatfield for our share of the water. If he made any rain in Los Angeles he also made it all over the State and the Legislature should pay him or else the amount should be raised by general subscription and not allowed to fall wholly upon a few credulous merchants of Los Angeles. But we cannot see how Hatfield can show that he made all this rain or any part of it, and if they agreed to give him the money merely because it rained so much, we can not complain against their right to give away their money as they like, even if we can not approve their judgment or common sense. It looks to us like another instance of the truth of the old proverb about fools and their money.

The Santa Clara prune growers declare a short crop and advise growers not to sell before July 1 at less than a 3c basis net to themselves.

QUERIES AND REPLIES.

A Five-Acre Farm.

To the Editor:—The following are some questions sent me from a friend in the East: 1. What kind of a living can a man make on five acres of land—good land—near San Jose, and how can he make it? 2. What would you advise a non-resident to do with the above-described land in case he could not live on it for a year or two? 3. Would you advise planting English walnuts at the above place, and do they grow well without irrigation?—A Subscriber, Hollister.

It depends upon two things: the man and the land. These two factors rule everywhere in agriculture, it is true, but the less of the land the more the man has to put of himself into it. The kind of a living a man can make on five acres depends then upon what kind of a man is doing it. If he is willing to work about all the time there is and to dispense with hired help, and is so interested and earnest that such a life will please him, he can make a good living, providing his tastes are moderate and the land is of such quality that it will justify the work and water that are required for such intensive culture. It must also be required that the man knows how to do things and has judgment to tell him what it will be profitable for him to do. We believe that it requires more of a man, in certain ways at least, to make a living from five acres than from 5000 acres. We can not tell a man how to make a living from five acres. If we could make a prescription of that kind which would fit all men and all good lands we could get a million dollars for it from any up to-date philanthropist. The best thing a man can do to determine whether he is in the five-acre-living class is to study what is being done with small areas in the region where he proposes to start in and see if he can match himself in any of his sights. We can not do that for him. If the question is not so serious as this, but is merely what to do with five acres of good land to improve its selling value or to retain it for what income it will yield, he could plant walnuts, if the land is rich, deep and not liable to standing water, and they would grow well in that section without irrigation. We doubt if he could do anything with the land by leasing it to another while the trees are growing without losing more in the growth of the trees than he would gain in income. He could do certain things profitably himself between the trees, perhaps, but it is doubtful if he could through a lease.

Weak Growth and Shothole Fungus.

To the Editor:—I send some twigs from my apricot trees. The foliage shrivels, dries up and falls off. The fruit all seems to be affected and is spotted, blackened and falls off. What is the cause and remedy?—Grower, San Bernardino county.

Your apricot trees seem to be suffering directly from an attack of the shothole fungus, which makes the spots in the leaves and also the blemishes on the fruit. There are other indications of trouble, viz: in the very slim wood growth, which might be due to lack of sufficient moisture last summer, and the small leaves and their tendency to shrivel and die, which might be caused by excess of water during the present winter. Thus the shothole fungus appears upon a tree which is out of condition from some other cause and therefore liable to more injury from fungus. This shothole fungus can be held in check by a thorough winter spraying with the Bordeaux mixture, but for satisfactory growth of trees and fruit it seems to be necessary that the trees should be better supplied with moisture during the growing season than these twigs would indicate. For such irregular growth the only thing that can be done is to see to it that the tree finds moisture and plant food in the soil to make a stronger growth.

The Detection of Glanders.

To the Editor:—Would you please inform me what the symptoms are for glanders that horses and mules are apt to get afflicted with? Please give the information how the symptoms are when it first shows, and later how the animal acts and if it can work after it gets affected.—A Reader, Turlock.

No one should have a glandered animal on his place for a moment if he values his own life or if he has any fear of a most horrible and excruciating death. A glandered animal may unfortunately work long after he is capable of communicating the terrible disease to other animals and to mankind. If your county has a county veterinarian he will identify the disease

for you; if not, you should consult a private practitioner at once. Glanders is too serious a disease to trust identification to printed descriptions.

Growing Crops on Summer Fallow.

TO THE EDITOR:—Does it make any difference in land that is summer-followed every other year, and sown to wheat the succeeding year, to plant corn on the ground when it is summer-fallowed? I mean will it raise as good wheat the next year as it would if it had not raised the crop of corn, but been plowed up and let lie?

I have 40 acres that was summer-fallowed one summer and planted to corn, and sown to wheat in the fall, and another 40 by the side of it that was summer-fallowed but was not planted to anything, just plowed up and let lie. It was sown to wheat the same time as the other 40 and the wheat on the 40 that the corn was raised on is the best wheat of the two.

On the other hand, one of my neighbors has two pieces of land that were summer-fallowed the same as mine and one planted to corn, and both sown to wheat the same time as mine. His best wheat is on the piece that was not planted to corn.

All the land was of the same kind, plowed three times, and all sown to Propo wheat. He claims that corn injures the land for wheat. What is your opinion?—A SUBSCRIBER, Dinuba.

Though there are many considerations involved in the bare fallow which is largely practiced on the Pacific coast (as pointed out by a Colusa county correspondent in the PACIFIC RURAL PRESS of April 1), in your case the main question seems to be how well was moisture retained? If a well cultivated crop of corn will take less moisture from the soil than would escape from a plowed (but not harrowed?) summer-fallow, then the growth of corn would help the following wheat because, first, the frequent cultivation of the corn would save moisture and, second, because the work for the corn crop would kill weeds and mellow the surface soil. The decay of the corn roots ought also to feed the following crop, but we do not make much of that because, if the soil is light and the rain scant, the trash of the corn crop is apt to do more harm than good.

On the other hand, if the corn is not cultivated well and the soil has to suffer the loss of the moisture needed by the corn plus what is lost from a hard or cloddy surface—then, probably, better wheat could be had without the butting in of the corn crop.

You say all things were alike in your experiment and your neighbor's, but you do not say the cultivation of the corn was the same in both cases. If you handled the corn crop better than he did, then the difference would appear in the following wheat crop providing both you and he handled that in the same way and practically at the same time. There are a good many things not included in your interesting statement.

The Peach Trouble.

TO THE EDITOR:—Shall I send some soil from my ranch in Fresno on which I have peaches growing? There is something the matter with them this year; they are so slow in leafing out; some of the trees have fruit on one side and none on the other. My man cannot find anything on the trees. This is not the shothole fungus. We don't know if it is in the soil or the climate this year. I see quite a few trees in the county in the same fix. Will you kindly let me know what is the matter with them?—GROWER, San Francisco.

The behavior of peach trees during the present spring has received very careful inquiry and the injury is clearly seen to be due not to soil conditions, but rather to unusual weather conditions and to the work of fungi favored by the peculiar temperatures and excess of moisture which have prevailed. Several fungi are involved in this work and even in cases where no shothole fungus has appeared, as you note in your letter, other fungi have been found at work and the letter of Prof. R. E. Smith, in the PACIFIC RURAL PRESS of April 8, gives an account of the trouble from this point of view. There have been some cases in which trouble has resulted from standing water in the soil, which is also due to the continuous rains of this winter, but the trouble generally is attributable to the cause mentioned. The fortunate thing about it is that the injury seems to be disappearing, that good foliage is coming out and that, although in some instances a considerable reduction of the crop will be experienced, there will probably be no lasting injury to the tree. We would like to have you take these suggestions into consideration, to make further observation as to the behavior of the trees, cutting out shoots which seem to be fatally injured and expect no farther trouble, providing other parts of the tree under very favorable temperatures begin to exhibit signs of recovery and thrift.

Pipe for Waste Milk at a Dairy.

TO THE EDITOR:—Please inform me if skim milk will have any effect on lead pipe, as I pump the skim and buttermilk through 1000 feet of 1-inch iron screw pipe to the hog pen. The iron pipe lasts from three to four years only. I have tried black, tarred and galvanized. The milk stands in the pipe when the pump is not in operation, and it is impractical to drain the pipe. I milk about 300 cows and pump the skim milk twice per day. I do not care to relay iron pipe, as it is expensive in the long run.—DAIRYMAN, Santa Cruz.

The lead pipe would be dangerous. Iron pipe well coated with paraffine paint would be more lasting than common iron pipe providing the liquid passing through the pipe was not hot. But why do you not arrange for much longer life of any kind of pipe by getting the sour milk out of it? If it cannot be drawn out by a faucet at the low point, it can be washed out by pumping water through it right after the milk. A good, big barrel full of water ought to wash out the pipe so that little acid would be left for corrosive action. It would also make the feed a little better probably by preventing the formation of a pipe full of sharp acid for the hogs to start with.

Walnut Trees Failing.

TO THE EDITOR:—We have a 5-acre orchard of Santa Barbara soft shelled walnuts, aged eleven years, nearly half of which are dying back. The limbs are not covered with leaves except near the butts, and are bare and dead-looking several feet in from and including the tips. The most of these trees looked all right last year and this condition has only been apparent since the trees have leaved out. They bore a fair crop of nuts last season. The soil where the trees are worst is a gravel soil, but is good rich land and many feet down to hardpan. I have observed for the last two seasons a peculiar condition of the leaves on some of the trees, and enclose some typical specimens. This affects the apparently sound trees as well as the ailing ones. Kindly let me know through the columns of your journal what you think this is and the cause and cure, if any.—GROWER, Gilroy.

It is a case of dieback following loss of root hairs, probably due to severe drying out of the soil last summer. As the trees have become large their requirement of water is apparently greater than the coarse soil can hold for them. Such trouble occurs in all parts of the State, and old trees fail even where they were quite thrifty when younger. The only thing we can suggest is to cut out all dieback saving lower shoots, which may still be healthy, and give the trees a good irrigation in July to give them moisture enough to go through the dry season. The spots on the leaves are not connected with the trouble.

Alfilaria for Horses.

TO THE EDITOR:—Some of our Napa farmers now know that cut and wilted green alfilaria is a dangerous diet for horses. This corroborates the experience of a Butte county farmer who nearly lost one or two valuable horses by feeding this grass, mention of which was made in a recent number of the PACIFIC RURAL PRESS. Thinking, as did the man of Butte county, that a luxurious growth of alfilaria would be relished by his horses, our neighbor hauled a load or two into his corral. The result was the death of two or three valuable horses. In this case the trouble was indigestion. Evidently, if alfilaria is fed green, or immediately after it is cut, no harm will result. But if the grass is fed in a wilted condition there is gravest risk of dire results.—A. WARREN ROBINSON, Napa.

This is evidently a matter in which the teachings of experience must govern. We believe the chief cause of trouble is excessive indulgence followed by indigestion and, of course, this is very likely to occur when the stuff is cut and fed in masses to horses in a corral and therefore, probably, over hungry for something green. Increased indigestibility after wilting does not seem reasonable because the indigestibility might be expected to increase with further drying, and yet the fact is that alfilaria hay is sometimes used in considerable quantities, but, of course, the animals will not gorge themselves with it.

Snails in the Garden.

TO THE EDITOR:—Will you tell me the best way to get rid of snails in flower and vegetable gardens? Those in the flower garden are the shell variety, the others are the brown ones. They are very plentiful and do much harm.—GARDENER, Santa Barbara.

We cannot add anything to our discourse on slugs in the PACIFIC RURAL PRESS of April 15th, nor l... any reader responded to our appeal for better warfare than there described.

Seeds Not Injurious to Pigs.

TO THE EDITOR:—I have fed Winter Pineapple melons, seeds and all, to my hogs for years. I never found anything that would fatten them faster than these melons. I have also fed pumpkins and squashes to cows and never took out the seeds. I never had a sick hog nor a sick cow, consequently I do not believe the seeds are detrimental in the least. P. N. W., Kings River, in my judgment, had better raise the melon above referred to for stock of any kind. One ton of them is worth more than three tons of citron or pie melons, and worth more than two tons of the large varieties of squashes, which contain but little nutriment, as about 1800 pounds of water are in one ton of these squashes, and very little sugar in the balance.—IRA W. ADAMS, Calistoga.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 1, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Fair weather prevailed most of the week and conditions were favorable for all crops. Grain-hay is nearly ready for harvesting and the crop is generally very heavy. Wheat, oats and barley are in good condition, making satisfactory growth; heavy crops are expected. Hops continue in excellent condition and outlook is good for a large yield. Pasturage is abundant. Grapes are beginning to bloom and give indications of a good crop. Almonds and apricots are unusually heavy in some sections, and nearly all other deciduous fruits except pears will probably yield good crops. Cherries and strawberries are going to market in large quantities. Citrus fruits are looking well.

Coast and Bay Sections.

The weather was quite favorable for crops during the week, though too cool in some places for the development of grain and fruits. Light showers fell in some sections. Grain and grass continue in good condition, with prospects of large crops. Haying is in progress and the yield is reported very good. Hops are making satisfactory growth. Pasturage is plentiful. Corn and potato planting have commenced. Deciduous fruit prospects in some sections do not appear as good as earlier in the season, but fair crops are probable. Caterpillars are said to be damaging prunes and other fruits in portions of Sonoma county. Vineyards continue in good condition and a large grape crop is expected. Cherry shipments are being made.

San Joaquin Valley.

Partly cloudy weather prevailed during the past week. Grain is making rapid growth; barley and oats will make good crops but wheat is damaged in most sections by rust, and will not come up to early estimates. The alfalfa crop is excellent, and haying is progressing rapidly in the central and southern portions of the valley, but retarded in the northern portion by the cool, damp weather. All kinds of deciduous fruits are developing rapidly; apricots, peaches, plums and prunes will be fair crops. The almond crop will be large. The outlook for the grape crop is improving in the central section, and is reported excellent in the northern. Green feed is plentiful and stock are in good condition.

Southern California

Cool and cloudy weather continued most of the week and light showers were frequent. The rain retarded hay making, but otherwise caused no damage. Warm, clear weather would improve the condition of all crops. Grain is looking well and will yield a heavy crop in most places. The hay crop will be about average. Beans, sugar beets and potatoes are in good condition and will yield more than average crops. The "army worm" is damaging gardens and vineyards in San Diego county. Green feed is plentiful and stock are in prime condition. Walnuts are backward. Oranges, lemons and deciduous fruits are looking well.

EUREKA SUMMARY. — Weather favorable. Grass, grain, vegetables and fruit are in excellent condition and making good growth. Species of aphis attacking some grain fields in Mattole section, but no material damage reported.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 3, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week.
Eureka	.10	31 37	64 04	43 10	56	44
Red Bluff	62	32.30	31 48	24 58	86	44
Sacramento	1 35	20 15	16 89	19 05	82	46
San Francisco	1.18	22 58	20 59	22 13	66	48
Fresno	.54	11 06	8 04	8 29	86	46
Independence	T	3 78	2 57	3 55	80	40
San Luis Obispo	.90	21 15	16 95	19 66	76	44
Los Angeles	.12	18 96	8 72	15 92	72	48
San Diego	.22	14 18	4 30	8 02	66	54
Yuma	T	8 69	94	2 85	92	48

THE GARDEN.

Asparagus in California.

From University Experiment Station Bulletin No. 165 by Prof. R. E. Smith.

The extent and importance of the asparagus industry in California is little realized outside the circles of those connected with the business. The crop is looked upon by many as a pleasant luxury, grown in certain suitable localities for supplying the city markets in spring. The fact is that the city markets take but a small portion of the asparagus produced in the State, and, to a large extent, the poorer quality at that. The business proper has quite a different object than supplying such markets.

Asparagus has been produced in California for many years. A small field is still in existence in Sacramento which is known to have been planted in 1852, while in the vicinity of San Jose the crop was also grown at an early period. In its present condition the business is of recent origin, mostly the growth of less than ten years, and has come into existence through the development of asparagus canning and the rapidly increasing demand for the product. Canning of asparagus on a commercial basis has been practiced for only a few years in California. Considerable difficulty was experienced at first in putting up the vegetable with uniform success, and as the market for any considerable amount of canned asparagus was entirely undeveloped in the early history of the business, conditions, even as late as ten years ago, gave little indication of the development of any such industry as now exists. The business, when once established, proving to be very profitable, both to producer and canner, large plantings of the vegetable were made, and up to 1902 the acreage increased enormously. Meantime the rust disease had crippled the canning of asparagus in other parts of the country, located principally on Long Island and in New Jersey, and with the greatly increased demand for canned asparagus the planting of the crop enjoyed quite a boom in California. This new planting took place principally in the delta country between Sacramento, Stockton and Port Costa, at the junction of the Sacramento and San Joaquin rivers, where the peaty and sedimentary soils, after reclamation by levees and pump drainage, proved especially suited for the production of canning asparagus. In 1903 there were nearly 6000 acres of asparagus in this section. The leader in this development was the Hickmott Asparagus Canning Co., and to Mr. Robert Hickmott belongs much of the credit for the present popularity of canned asparagus. With great confidence as to the future of the business he went ahead at Bouldin Island, contracting for the planting of an enormous acreage and building canneries to handle the product. The flooding of Bouldin Island in the spring of 1904, and consequent crippling of the business, was a distinct calamity to California.

Other canners were also early in the asparagus field and the California Fruit Canners' Association, after its organization, began to build up an asparagus business which is rapidly enlarging as the later planted fields come into bearing. Their cannery at Milpitas, established originally by the Oakland Preserving Co , handles most of the product of that district, which is an old asparagus growing section, while that at Sacramento was one of the first to pack asparagus, and takes almost all of the vegetable produced by the growers on the outskirts of that city. They have further an asparagus cannery at Vorden, on the great Van Loben Sels estate, and likewise pack more or less asparagus in their San Francisco canneries.

The Golden State Asparagus Co. is the third of the important asparagus packers. Their new cannery at Andrus Island is well equipped for the business, and situated in the midst of their large and increasing asparagus fields. The Goetjen and Metsen fields on Grand Island are also under the control of this company.

Hunt Bros., large fruit and vegetable canners, have recently built a small asparagus cannery at Antioch to pack asparagus from various points in the island section which they have contracted. An asparagus cannery has also been built at the Sylvester & Graves place below Stockton.

Other companies can more or less asparagus from the city markets, but these comprise all those who make a specialty of the business, packing directly from the fields. The process is clean and appetizing and the product healthful and delicious, being immeasurably superior to fresh asparagus bought in the market and cooked at home.

Asparagus is grown in gardens all over the State and commercially, in a small way, near most of the larger cities. In Orange county a number of growers are engaged in producing fresh asparagus for the early Chicago market. The warmer portions of the State do not seem as favorable to the crop, and the fine large white asparagus of the canning sections is not seen in the south. Asparagus has recently been planted in the Coachella desert country in the Salton basin, and hopes are entertained of the development of a considerable industry in that region.

There are now about 7000 acres of asparagus in California, including the flooded islands, located mostly in the river, Milpitas and Sacramento sections. Of this, about 1500 acres consists of young beds which will be cut for the first time in 1905. No extensive new planting has been done since 1902, but for 1905 the planting of from 500 to 1000 acres is contemplated. The lower figure is probably nearest the amount which will be actually put out.

Culture of Asparagus. — Asparagus is grown from seed, planted quite thick in close rows in a nursery bed, and the roots then transplanted to the permanent field. The seed is thoroughly soaked and warmed before planting, to insure quick germination. The roots may be transplanted when one, two or three years old, but in California are most satisfactory at one year, if well grown. They are dug in the winter after the tops die down, allowed to dry if kept long, and planted as early as possible in the spring. The permanent bed must be in a soil specially suited to asparagus if it is to succeed, particularly for canning asparagus, which requires a large production of high quality for profit. The typical California asparagus soils are of two classes: The sediment soils, as at Sacramento and Milpitas, composed of fine, sedimentary river deposits, and the island peat soils, composed in places, on the San Joaquin side particularly, of almost pure organic matter; or again, on the Sacramento, of mixtures of peat and sediment or clay in various proportions. The structure of the island soil formations varies considerably, some having pure peat to a depth of 30 feet or more, as at Bouldin island, others with underlying strata of clay and sediment at various depths. The soil must be fertile, naturally moist or capable of irrigation, well drained, and not forming hard lumps. The last is especially essential in growing straight stalks for canning.

The distance between the rows varies in different sections. At Sacramento, where new soil and manure are applied every year, they are 5 feet apart. This is very close, except for small fields on valuable land. At Milpitas 7 feet is the usual distance, while in the great island plantations 9 or 10 feet is a common distance. In this soft soil the crowns spread very rapidly and close planting makes a short-lived bed, the asparagus soon becoming crowded and running down in size. The distance between plants varies in the same way. Nine feet by two is advisable in the island section, and about 7 by 1½ feet on sediment soil. Where quick returns are more desired than long life, as on leased lands, closer planting is advisable, up to 4 feet by 1. This will give a large yield for a few years, but will soon run out.

The roots are planted in a deep furrow, which is gradually filled as the plants grow. In countries where manuring is customary a trench is made and filled at the bottom with manure, over which the roots are planted. The plants should be allowed to grow two years before any cutting is done. In the third year cutting should stop early in the season, not continuing over six weeks. During these first two years it is customary to grow some annual crop between the rows. This is useful in keeping the ground cultivated so long as the asparagus plants do not suffer. Careless tenants sometimes injure the latter more than the value of the temporary crop. Clean cultivation and no breaking down of the asparagus must be insisted on. Crops thus commonly grown are beans, potatoes and onions, of which the first is least objectionable.

Asparagus may be grown either green or white, according as the shoots are allowed to grow several inches above ground before being cut, or are cut as soon as the top breaks the surface. In the latter method by which all the canning asparagus is grown, the dirt is ridged up high on the rows in order to produce long, tender white stalks. These ridges are put up in early spring as soon as the ground can be worked, and kept up through the cutting season. They are made by plows, disks, hand implements and various special machines devised by different growers. Much the best of these is the modified disk cultivator devised by Mr. Boots, and in use by him and others.

The asparagus shoots are cut, as soon as the top appears, by means of a long-handled gouge, carried out of the field in baskets, washed, trimmed to a uniform length of 7 inches, packed in bulk into 60-pound boxes, a burlap and slat cover tacked on, and the boxes then sent to the cannery or market. In the East asparagus is sold in bunches — 1¼ pound in Boston, with a wholesale unit of a three-dozen-bunch box, while New York takes a 2½-pound bunch, sold at wholesale by the dozen. Boston requires green asparagus; New York and most other markets, white. Bunching is not practiced to any extent in California, except for the earliest apparagus, which is shipped East in the fresh condition.

Cutting begins somewhat in February, but is quite light until late in March, when the canneries open. The season varies in length, with a tendency for the canneries to run longer each year on account of the demand for canned asparagus. They close during the latter part of June and early in July, making a season of from 90 to 100 days.

The yield of asparagus in California is large, compared with Eastern districts. This is on account of the long cutting and growing season and the deep, fertile soil; 5000 pounds of merchantable asparagus per acre is no more than a fair average for large plantations, estimating producing fields of all ages together, while in good fields of prime age 7000 to 8000 pounds are often produced without any fertilization. By reason of these large yields and the excellent quality of the product, no other portion of the country can compete with California in canning asparagus.

After the cutting season the rows are plowed, disked or harrowed down as flat as possible, and the shoots at once grow up and produce the thick tops. These remain until late in November or December, when they become mature and are killed by frost. Then the old tops are cut, the stubble chopped out with hoes, the fields plowed, harrowed and prepared for the new crop. The beds should be cultivated and kept clean all through the summer, though too often this is neglected after the tops grow up.

In the majority of cases asparagus is grown in California on a share system with Chinese tenants, the owner furnishing land, utensils, horses and all necessities for handling the crop, while the Chinaman supplies the labor and receives 50% or 60% of the product.

THE FIELD.

Good Practice in Root Growing.

The University Experiment Station has just published a circular by Dr. G. W. Shaw, which is intended particularly for the assistance of those who are growing sugar beets for the factories. There are, however, so many suggestions which also pertain to the good growth of stock beets, carrots, parsnips and other long root crops that we take the liberty of giving the writing a wider bearing than its title claims.

Choice of Land.—It must be especially remembered that hard, impenetrable subsoils within 2 feet of the surface of the ground are not at all desirable; for the sugar beet must embed itself completely in the soil, and the taproot go well down into the subsoil which serves as the feeding ground for the root.

For the best immediate returns a soil of medium lightness, friable, permitting of ease of cultivation and penetration, should be selected. There has often been a tendency toward light sandy soils for this crop, but it is safer to lean toward the clay loam than toward the sand if the highest tonnage is desired.

In the selection of land for a beet crop, attention should also be given to the previous crop. For instance, it is not wise to select land upon which a crop of old alfalfa has been turned under the previous fall, for it will cause endless difficulty and expense by its persistent growth in the beet fields. Again, land that has been planted to corn the year previous is difficult to cultivate when planted to beets, unless all of the stubble has been carefully removed from the field. If left on the field it is sure to cause the loss of a large number of plants by clogging the wheels of the seeder, and later by tearing out plants during cultivation.

Condition of Soil to be Obtained.—The sugar beet needs a deeply loosened, well-mellowed soil, uniformly mixed, and offering the plant easily available plant-food. It should be in such a condition that the air may readily penetrate it and exert its ameliorating effect. The soil must be made free from weeds, and put into proper condition to retain moisture, as well as to dispose of a too large amount of the latter into the subsoil; and last, but not least, must possess a surface suitable for embedding, germinating and growing the seed.

To meet all these conditions different operations will have to be resorted to, according to the nature of the soil and the climatic conditions; but everywhere there are certain well-defined operations which must absolutely be attended to if a profitable crop is to be obtained.

Fall Work.—Deep preparation of the soil is a "sine qua non" of successful sugar-beet culture, nothing having been more conclusively shown than that sugar-beet culture and shallow soil preparation can never be profitably practiced for any length of time. A quick penetration of the root into the subsoil is of the utmost importance to a proper and healthy development of the plant, and to secure this the most effectively, deep plowing should be done in the fall so that the new layer of soil may be brought to the surface the better to be acted upon by the atmospheric agencies, thus rendering the plant-food more available. Further, such plowing also brings about the most favorable conditions for collecting and storing the winter moisture for the use of the plant in the early summer.

Not only should the plowing be done in the fall, but it should be deep plowing—say a depth of 10 inches at least; and should there be the slightest tendency toward a hard subsoil, it should be subsoiled to a further depth of 6 inches.

Should the land in the humid region not have been previously subjected to deep culture it would be advisable to make the regular plowing more shallow,

and substitute subsoiling to a proportionate depth, thus not turning up too much of the raw soil. In the arid regions, however, there is very little if any danger of turning up so great a depth of soil that the plant-food is not immediately available, and were it not for the purpose of rendering the soil more receptive of the winter moisture there would not be so urgent necessity of fall plowing.

If beets are put upon land which has been previously planted to alfalfa, a similar treatment to that under grain cultivation should be given, and in addition the land should be well harrowed after the shallow plowing, to bring all roots to the surface, that they may be raked into piles and destroyed. The spring treatment should be as in the other cases, except that planting should be rather late so that the tender plants may not become choked by the alfalfa.

Spring Work.—In case plowing has not been done in the fall, it should be done as early in the spring as the ground will do to handle, for three reasons: (1st) Because the sooner the weeds are encouraged to grow the more of them can be killed before planting the beets; (2d) because land plowed while the weather is cool will retain moisture much more than if plowed during warm weather; (3d) because it is much better to allow ground to settle as much as possible after plowing and before the preparation of the seed-bed, thus insuring a better and quicker germination of the seed. After the spring plowing, immediately harrow, or still better, float or drag once and leave the ground as it is until the time to prepare the seed-bed, thus allowing the weeds to sprout. Land that has been plowed in the fall should be harrowed as early in the spring as possible, and then be treated as hereinafter described. It is a very good practice to harrow the land deeply and crosswise before spring plowing, so as to turn under a fine, loose soil instead of a hard, lumpy surface, as the land will settle more rapidly and uniformly. If irrigation is to be practiced this is particularly to be recommended, as it will irrigate more uniformly than when full of holes and air spaces near the plow furrow.

If beets are to follow corn it is absolutely necessary to remove the stalks from the field to permit of profitable drilling and horse cultivation. The stalks can not be successfully plowed under, as the cultivator knives bring them again to the surface and they tear out a large number of beet plants; and further, they materially interfere with even seeding. The best way for cleaning the field from the stalk is to remove the mold board from the plow. This will loosen the roots without turning the corn stalks under. Then with a hay-rake gather them into piles, and after burning as many as possible, haul off the remainder. The same work will be found necessary where sorghum has been grown.

If beets follow grain the stubble should be plowed shallow—say 4 inches—immediately after harvest, for by this treatment the land will be prevented from baking and the weeds will be encouraged to grow, a large part of which may then be destroyed by a later and deeper plowing the same fall. A deep plowing at first would prevent their germination until they should be brought near the surface by the spring working of the soil, when they would germinate and seriously interfere with the crop and increase the cost of production. If the crop is to be grown upon a considerable scale the use of a gang-plow is to be recommended, as it both decreases the cost of preparing the land and hastens the work. Although not commonly done, the writer believes that immediately following this shallow plowing, particularly if the land is known to be foul, it is desirable to harrow and roll, or drag, the land.

If stable manure is to be used it should be applied soon after the shallow plowing, spreading it evenly over the land that it may be turned under in the deeper plowing in the same fall. For good plowing, do not attempt to turn too wide a furrow; a narrow furrow not only mellows more readily, but absorbs moisture more rapidly and is more rapidly turned.

If beets follow potatoes, or beets, or if the land is known to be free of weeds, the shallow plowing may be omitted, but in no case must the deeper plowing be neglected.

In case irrigation is to be practiced some special preparation of the field must be given attention. First of all, in plowing the land as few dead furrows as possible should be left in the field after the work is completed, as they interfere very much with the cultivation and irrigation of the land. Plowing around, which means starting at the edge of the field and plowing in circles toward the center of the field, should also be avoided, as it is not favorable for irrigation, since the land lies in two different directions, which interferes with the flow of the water.

Further, successful irrigation of a beet field can not be accomplished without a thorough grading—"leveling"—of its surface. To achieve this, there must be a fine surface, which should be prepared by harrowing and floating (dragging) the land repeatedly, crosswise and lengthwise. As soon as the surface is fine enough to be easily moved, a leveler should be used which shall drag the soil from the high places and drop it in the lower ones. The machine is a simple one and can easily be constructed by any one.

Where the retaining of winter moisture in the soil is of great importance, which is the case in all regions where it is hoped to sprout the seed without irrigation in the spring, the first work of spring should be the dragging of the land. From the settling of the soil during winter the capillary tubes have reached a high stage of development, and as soon as the surface of the soil becomes somewhat dry, there is continuous evaporation of the soil moisture through these tubes, causing an enormous loss of moisture. High ridges are particularly exposed to the action of the sun and wind, and dry out very quickly. When seed is embedded in these drier places it germinates much slower than in the more moist portions of the field, and causes an uneven stand, which proves very detrimental to the crop, for these later plants never reach the stage of development of the earlier ones. Dragging more effectually remedies this trouble than does harrowing, and results in a great saving of moisture. Such treatment, however, should not be given to the heavier clay soils. The land should now remain undisturbed for a time for the clods to absorb moisture and become somewhat softened, and to encourage all the weeds possible to make a start.

Horse Beans in Pajaro Valley.

The English flat bean, known in this country as the horse bean, is becoming important among the products of Pajaro valley, according to an interesting account in the Pajaronian.

The horse bean has not been grown in this valley for more than two years in commercial quantities. Two years ago a carload was marketed and last season about a carload and a half was sent out. Last season the farmers devoted something like fifty acres to this crop, and the splendid financial returns prompted other tillers of the soil to plant horse beans, the result being that a little more than 750 acres in the valley are devoted to this product.

In the fertile soil of Pajaro valley horse beans grow luxuriantly, returning from one and a half ton to two tons an acre. Last year growers received from 1¼ cent to 1½ cent a pound, which prices mean a net profit to the grower of about $20 a ton. The demand for this product was principally from the East, where it is used extensively as an advantageous ingredient of ground coffee, chickory, etc.

As a stock feed it also ranks high. Horses and hogs relish it and take on flesh and strength when fed upon it. Thus there is quite a call for horse beans, and prices in the past have been good. As to the future stability of the market it is impossible to tell. From present indications, the 750 acres of land devoted this season in Pajaro valley to the growing of horse beans should average a ton and a half to the acre, which would mean a total of 1125 tons. At 1½ cent a pound, the crop would be worth $33,750 gross, or a net profit to the growers of $22,500.

The planting season for these beans is from November to January and the harvest time in July. The crop is harvested like all other bean crops. In most cases the flail process is adopted, and the beans are then separated from chaff and dirt by means of a fan mill. They are then sacked ready for market.

Peanuts as a Farm Feeding Crop.

G. D. Perego of Newton county, Texas, writing to the Kansas Farmer on success he has attained in the raising and feeding peanuts, says:

"I cannot give up this crop so long as I stay on the farm, because it has so much the advantage over other crops. First, it has no insect enemy; second, when you plant you are sure of a crop, and it will stand more dry weather than any other crop; third, poor, sandy land that would not pay in any crop will make a fine crop of peanuts. I have this year about twenty acres of sandy land planted that will easily make fifty bushels to the acre without any fertilizer, that would not make over eight bushels of corn to the acre. The vines make the finest hay I ever fed when properly cured. If you pull them up in the evening, and the sun shines bright the next day, take them in late in the evening and you will have the sweetest hay you ever saw. My horses will leave alfalfa to eat peanut hay cured in this way. The peanuts are the best hog feed I ever tried. If you want to feed hogs on peanuts, have a block in your barn or crib and a sharp hatchet and you can chop off the bunches of peanuts with from a pint to nearly a quart on each root; you can chop off two bushels of peanuts while you would be shelling one bushel of corn. They will fatten hogs faster than anything else, and keep them healthy.

"Some people say there is no money in peanuts, but I am sure there is, for I get money the year round for mine. I am now supplying two stores, besides I fatten my hogs with the nuts and feed my horses and cows with the vines. Brother farmers, try them by all means. Plant the nuts in hills 2 feet apart and have the rows 3 feet apart. Keep plants clean, and you will not worry about the yield. If you plant about April 20th, they will be ready to harvest by August 20th. They are a most valuable crop."

AGRICULTURAL SCIENCE.

The University Farm.

The State Commission for the selection and purchase of a University farm is now ready to receive offers of land for such a University farm. All communications on the subject should be filed with the secretary of the Commission, Mr. V. H. Henderson, Berkeley. Proposals should be filed with the secretary of the Commission on or before June 1, 1905.

The Act provides that the land for the University farm shall be of "such size and acreage as in the judgment of the Commission may be necessary for the purposes designed; provided, however, that there should not be less than 320 acres of first-class tillable land located at such a place as the Commission may deem proper, having in consideration the purposes for which it is to be used. It must be first-class tillable land, and in its soil, location, climate and general environment be typical and representative of the best general agricultural conditions in California, and be capable of successfully producing the general crops of the State and as many as may be of all the crops and products successfully grown in California."

It is provided that "no site shall be chosen one-half of which is not susceptible of irrigation." If a system for its irrigation is not already provided, a water right must be provided in connection with the land. The Commission has been granted power to take options or bonds for deeds and to accept the whole or any part of the University farm as a gift; they may also receive gifts of water rights, canals, ditch, flume or other water rights. The Commission is given also the power of eminent domain.

The Commission desires that all proposals should contain a description of the land offered, information as to its exact location, as to its acreage, as to its physical character, as to the price per acre, as to the water rights connected with it, as to its distance from the nearest railroad town, as to climatic conditions, as to existing improvements and other similar information.

The Commission also desires a statement as to how long any offer made will remain open. Proposals should be accompanied by an offer to bond to the Commission the land offered without cost for a period of two years, upon demand of the Commission. The Commission reserves the right to reject any or all proposals as in its judgment shall seem proper. On May 18th the Commission will begin to visit lands offered as a site for the University farm.

FRUIT MARKETING.

Olive Oil Market of Malaga.

"Higher prices and half a crop" tersely expresses the present condition of the Malaga olive oil market. The yield of olives from the orchards of Andalusia (that section of southern Spain embracing the provinces of Cordoba, Jaen, Seville, Granada and Malaga) has been less for the present vintage than for any of the last four years, on account of the hot weather during the early autumn, when the olive was ripening, which caused a considerable portion of the fruit to prematurely ripen and fall.

Usually the olive crop of Andalusia is sufficient for the pressing of about 30,000,000 arrobas (127,789,000 gallons) of oil. While accurate figures are difficult to obtain, 15,000,000 arrobas (63,945,000 gallons) would probably be a fair estimate of the present crop. The olive yield of Italy, which is closely watched by Malaga exporters, is now reported to be in worse shape than that of southern Spain. Thus far, however, there has not been as much Spanish oil sold to either Italy or France as in former years.

A comparison of this season's sales of Malaga olive oil to the United States shows a decrease of one-third from those of 1903, which was probably the best season the oil exporters of Malaga ever had. The exports of Malaga oil for the last three seasons, October to February of each year, were as follows: 1903, 9240 barrels; 1904, 5750 barrels; 1905, 5823 barrels.

Malaga, Spain. D. R. Birch, Consul.

California at the Lewis and Clark Exposition.

California is evidently going to do something worth while at the coming Lewis and Clark Exposition at Portland. Mr. W. A. Beard of the Sacramento Development Association, who has just returned from Portland, informs the Sacramento Union that the California building is one of the largest and finest of the State buildings, and will undoubtedly be in the main line of travel. It is much larger than the California building at St. Louis, and its four fronts, each representing one of the old missions of this State, will command attention. The building is nearing completion and exhibit material is being moved in. The Sacramento valley hopes to have another building devoted to its own purposes.

Agricultural Review.

Butte.

Big Almond Crop. — Chico Record: A visit to the almond orchards in close proximity to town presents a scene which has not been equaled for a number of years. In some of the orchards the trees are fairly overloaded with fine, large, healthy appearing fruit, while most of the trees are filled to more than their average. The indications are that the man who has almonds this year and is not compelled to immediately sell after harvest will be on the shady side of easy street.

Stock Fared Well.—Oroville special to Sacramento Bee: Stockmen say that feed has been better this winter than ever in the history of the section, as far as white men can remember. In many instances stockmen have not fed a bale of hay this season and stock is in the best of condition.

Lose Money Paid in Land Deal.—Oroville special to Sacramento Bee: In the Superior Court here Judge Gray decided in favor of the defendant in the case of Louis Glass and Homer King vs. S. C. Peasley. Two years ago Peasley bonded some of his land to E. W. Fogg and Harry Jacobs for $25,600, and these men then turned their contract over to Glass and King, the plaintiffs in the suit just decided. It was provided that the money should be paid in four equal installments of $6400 each. King and Glass made the first payment, but none after that. When the limit set for the conclusion of the option had expired, Peasley sold the land in question to the Central Dredging Company, and thereupon Glass and King demanded the return of the $6400 they had paid to him. This he refused to do, and the suit at law followed. The Court decided against the plaintiffs. There are several similar deals in this section awaiting settlement. The plaintiffs in the case may appeal.

Glenn.

Fourteen-Thousand-Dollar Wool Sale. — Orland special to Sacramento Bee: Zike Simpson, a local sheepman, beat the record here this year in the wool crop. From 10,200 head of sheep he received 56,000 pounds of wool, which he sold for 25 cents per pound, or $14,000.

Much Foul Grain.—Willows Journal: The prospects for a big grain crop are not so encouraging as they were a month ago; much of the low and level land is full of cheat and clover instead of wheat, which will materially reduce the yield; the hill land is in much better shape and the late sown grain bids fair to make better crops than the heavy stand on the summer fallowed land.

Kings.

Large Acreage of Peaches.—Hanford Journal: There will be an immense increase in the production of peaches from Kings county four years hence, says Mr. Douglass of the firm of Douglass & Thorne. Mr. Douglass says that not only was every peach tree of good variety for drying, but many for canning, bought and set out. The great demand was for drying peaches, and the State was scoured for trees of that variety of fruit.

Mendocino.

Hop Roots are Turned to Cash.—Ukiah Republican-Press: F. C. Albertson reports that over 2,000,000 hop roots have been shipped out of this valley during the season. The price ranged between $4 and $8.50, a few hundred thousand reaching the top figure among the first lots that were sold. The great bulk was shipped to Sonoma county, where hundreds of acres have been planted this year. Some, however, went to British Columbia. Among the largest shippers were: John Cunningham, 400,000 at $5; Sanford Bros., 150,000 at $5; Hugh Cox, 200,000 at $8.50 and $5; Higgins, 75,000 at $6. A number of smaller lots amounting to 100,000 roots went at $6 and the remainder at $4. The last lot of the season was shipped by express Tuesday by John Eldred from Horst's ranches in this valley and amounted to 123,000 roots. This shipping takes into consideration none of the roots that were planted in this county. A number of ranchers increased their area and the American Hop & Barley Co. have put out a large acreage in Round valley.

Orange.

Fullerton Walnut Crop Engaged.—The Fullerton Walnut Growers' Association has closed a contract for its entire output this season on the same terms as last year, which is a straight brokerage agreement. It is too early in the season to form an estimate of the crop, but it is thought it will be as heavy as last year. This association shipped fifty-five cars last year which sold for $113,400.

San Bernardino.

Cherry Season Delayed.—Redlands Facts, April 29: Andrews Bros. have fifty acres planted to cherries and are not only the largest growers in this part of the State, but raise more of this fruit than all other growers in southern California combined. The recent frosts did not damage the Andrews cherry trees, as they are located in a sort of a cove where the frosts do not fall. However, their plum crop was pretty badly hurt. The Andrews Bros. began the cherry business about twelve years ago with twenty acres. Each year they have added to their acreage, and they intend to continue the expansion. Since this ranch was started but one disaster has befallen the crop, and that was about seven years ago. That season, Mr. Andrews says, the crop was entirely destroyed by a small bird called the tanager.

San Joaquin.

Hessian Fly Makes Its Appearance.—Lodi Sentinel, April 29: A grub, said to be the Hessian fly, has infested the grain fields of San Joaquin county, and it is said that it threatens to destroy thousands of acres of fine growing grain. Florin Swain, who is farming the Sperry ranch on the Cherokee lane, states that he believes the grub is the dreaded Hessian fly. Other farmers are also of this opinion. The pest is usually indicated by the wheat turning yellow, and a close investigation will reveal the stalks being streaked with this same color. Searching the stalks just above the roots discloses a small pupa on the grain. Under a microscope this resembles a date very closely. As many as six of them have been found in one stalk.

Tree Fruits Very Shy, but Grapes Plentiful.—Lodi special to Sacramento Bee: Tree fruit in northern San Joaquin will not be a good crop. Peaches and cherries will be but half a crop. Apricots are looking better than most other varieties, and growers are figuring on a two-thirds crop. Plums and prunes should make a full crop, but pears will fall far below the average. Grapes, on the contrary, will be the best crop this section has ever seen. Conditions have greatly favored vine fruit here, no heavy winds or killing frosts having yet appeared, and the rains have been most timely. Growers are at a loss to account for the shortage of the tree fruits.

Spraying Fruit Trees at Gardeners' Expense.—Lodi Sentinel: The report of the County Fruit Inspector, which was read at a meeting of the Horticultural Commissioners Saturday, showed that several Italians had failed to comply with the law governing the spraying of trees. The commissioners have decided to have the trees sprayed at the expense of the gardeners.

Santa Barbara.

Large Sale of Dairy Stock.—Press, April 27: The Tucker sale at the Williams dairy was conducted yesterday and called a large number of farmers and stockmen to the place. The bidding was not enthusiastic, however, and while the young stock brought good prices, the cows sold very cheap, the highest price for a single animal being $36.50, and the lowest $13.50 each for four old dry cows. Thirty-seven milch cows sold at an average of $23.86, twenty-five dry cows brought an average price of $20.23. In all, 113 head of dairy stock, three horses and one buggy were sold for a total of $2187. W. S. Parks was the largest buyer of cows. Altogether he bought thirty milch cows at prices ranging from $18.50 to $28.50 He also bought nine dry cows at $20 each. Thirteen heifers, two-year-olds, were bid in by George Mack at $17 each. Five steers went to the same purchaser for $24 50 each Donovan bought five steers at $19, seven others at $17, eleven calves and two yearlings at $5.50 each. A two-year-old bull brought $18 and a yearling $9. Two stags sold for $14.50 each.

The Bean Market. — Commercial Agent Shillingsburg of the Southern Pacific gives some interesting figures in connection with recent reports on the bean market. He states that at the present time there are about 75.000 sacks of beans in the two counties of Santa Barbara and Ventura. Of these 60,000 sacks are Limas and the remaining Lady Washingtons and Small Whites. At this time a year ago there were nearly 300,000 sacks of beans in the two counties, and in the five months from May to September there were shipped 85,000 sacks, leaving a hold-over stock of about 200,000 sacks. If there is the same demand this year, the present stock will be cleaned out entirely, and there will be a shortage of 10,000 sacks in place of the hold-over of last season. This should be encouraging to the farmers, and it accounts for the present high quotations.

Shasta.

Few Prunes. — Redding Searchlight: C. C. Hainline, of Anderson, says that reports from the prune growers about Anderson tended to show that probably not more than one-fourth of the usual crop would be harvested this season, and the cause of the failure is somewhat out of the ordinary. Mr. Hainline said that the trees bloomed prolifically, but while they were in full bloom a heavy rainstorm came and washed away the pollen. The result was that the blossoms were not fertilized and the fruit fell from the branches soon after forming. The failure of the crop is in no way attributed to the frost, the most common enemy of the prune grower.

Big Land Trade.—Redding special to Sacramento Bee: The Alexander olive orchard, near Anderson, the largest olive property in northern California, has just been traded to J. Cochran for a whole block of land near the city of Chicago. The property is valued at $120,000.

Sonoma.

Eighty Thousand Eggs. — At the ranch of Byron Purvine, near Petaluma, during March 80,000 eggs were laid by the hens, or an average of 6500 a day. The Purvine eggs always bring a fancy price in the San Francisco market.

Pests Exterminated. — Healdsburg Enterprise: A. Sbarboro states that the ravages from the lava moth at the Asti vineyards have entirely ceased. One hundred men working at night for two weeks in the Italian-Swiss Colony vineyards have entirely extirpated the pest. This is the second time in twenty-five years that the Colony has had trouble by this little worm. The damage done to the grape is not large, as the worms were checked in good time.

Stanislaus.

Killed a Bald Eagle With .22 Rifle.—Modesto Herald: G. W. Sisk killed a bald eagle last week that measured 6½ feet from tip to tip. Mr. Sisk, who resides on a ranch near Oakdale, noticed the large bird circling around for two or three days and supposed it was a hawk. He finally took a shot at it with a little .22 rifle and the eagle flew a quarter of a mile before it dropped. Monday morning when Mr. Sisk went into the field to plow he found his "hawk" was a bald eagle, the height at which it soared reducing its size and making the confusion possible.

Sutter.

Cherries Bring Fair Prices.—Yuba City Farmer, April 28: J. B. Wilkie is still shipping the early varieties of cherries and from all reports the returns are very fair. With the exception of the Giblin orchard he will handle the crops from all the orchards in this vicinity, amounting to about fifty or sixty tons, selling to local dealers and shipping. We understand the price to the growers is from 4c to 6c per pound, there being not much better than one-half a crop.

Tehama.

Cone Land Sold.—Red Bluff News: The 100,000-acre Cone estate, lying south of Red Bluff for 15 miles along the Sacramento river, has been purchased by a syndicate of San Francisco and Spokane capitalists, who propose to make extensive developments on the property and open it to settlement in small subdivisions. This great estate has been conducted for many years as a grain and stock ranch. County Surveyor Luning has charge of a large corps of engineers who have established a camp near the center of the property and are now subdividing it.

Tuolumne.

Bonus Given for Planting Apple Trees.—The Sierra Railway Co. started in some time ago to foster the growing of apples in the Sierra region tributary to its line. Young trees were offered free to all promising to set them out. Now the company is giving a bonus of $5 an acre for the planting of trees. Last week the Sierra Co. paid $110 to F. J. Ralph, who resides on a tract of land near Campbell's station, as a bonus for the planting of twenty-two acres.

Yolo.

Bronze Turkeys.—Winters Express: R. E. Baker has imported from Missouri eighteen bronze turkey eggs for G. W. Thissell Jr. The eggs are from turkeys that captured three out of four prizes at one turkey show, the hens of which weighed from eighteen to twenty-five pounds and one gobbler weighing forty-eight pounds.

Yuba.

Twenty-five Cent Wool.—Marysville special to Sacramento Bee: Of all the good prices paid for the spring clip of wool in this section, C. K. Dam has secured the best, viz., 25c per pound. The lot consisted of 4500 pounds. His was the last large lot to be disposed of in the Wheatland section.

Land Owners to Appeal.—Marysville special to Sacramento Bee: The landholders in the Brown's Valley district have announced, through their attorneys, that they will take an appeal from the decision of Judge Ross, which last week validated the bonds of the irrigation district, as well as the district itself. If the decision is accepted as final the landholders will have to raise in the neighborhood of $200,000, which would mean a heavy tax on the acreage involved.

Live Wire Kills Horse. — J. H. Murphy of Sutter county, while driving in Marysville on April 29th, lost a horse, through coming in contact with a live electric wire. When the animal fell, Murphy did not realize how the accident occurred and came very near striking the wire when he alighted from his vehicle. He was astride of the deadly current before he noticed the wire. The wire was loosed from its position by careless house movers, Murphy's second horse received a shock from the wire, but was quieted before he again came in contact with it.

VITICULTURE.

A New Viticultural Organization.

Through the good offices of the State Board of Trade an organization has been effected which will be known as the State Board of Viticulture. This body will be auxiliary to the State Board of Trade, and will use the Board of Trade rooms at will.

Recently a meeting was held at which the wine men appeared by a delegation before the State Board of Trade and represented that they needed means to enable them to take concerted action whenever it was necessary for the benefit of the wine industry. The State Board of Trade encouraged the proposition made to organize a body to affiliate with the Board, and appointed John P. Irish a committee to take the first steps to bring about what was desired.

Last week the new Board of Viticulture was formed with the following initial membership:

John P. Irish, chairman; Percy T. Morgan, San Francisco; John Swett, Contra Costa county district; C. J. Wetmore, Livermore district; E. H. Rixford, San Mateo and Santa Clara county district; Theodore A. Bell, Napa and Sacramento district; Luther Burbank, Sonoma district; William Crone Spencer, Placer county and foothill district; J. B. Lankershim, Los Angeles district; M. F. Tarpey, Fresno district; C. A. Wetmore, Stockton district; F. T. Swett, corresponding secretary; R. M. Wood, recording secretary; C. J. Wetmore, chairman of the executive committee; Percy T. Morgan, chairman of the committee on legislation and internal revenue; John Swett, chairman of the committee on pure food questions.

Horse Owners! Use

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A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

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FRESNO AGRICULTURAL WORKS

FRESNO, CALIFORNIA.

THE DAIRY.

Look Out for Dairy Inspection.

Mr. W. H. Saylor, secretary of the Dairy Bureau, announces that proceedings will begin under the sanitary dairy law which we outlined last week. The State Dairy Bureau proposes to "score," or rather to rate, the dairies and creameries of California according to their sanitary condition.

There are two objects the Bureau hopes to accomplish by means of this plan: First, it will serve as a concise manner of making out reports on the sanitary conditions as found by the inspectors, and, second, that it will work in the direction of exact standards that the creamerymen and dairymen can strive to secure and maintain. It is believed by the Dairy Bureau that such a system of comparative rating will do much to stimulate an interest in better sanitary conditions. Not only will the inspectors look into almost every detail that involves sanitary conditions, but they will also collect a large amount of statistical data for the Bureau. In other words, it is proposed to inaugurate a sort of "cow census" work among the dairymen and information in regard to the methods employed by creamerymen and cheese factory operators. By this means the Bureau hopes to find out who own profitable cows and who are content with less profit in their work.

Secretary Saylor of the Bureau has been at work devising rules and planning the work for the inspectors soon to be appointed. Two meetings of the Bureau have been held to act upon these matters. At the last meeting the schedule for rating the sanitary conditions of dairies was ordered printed and next week some preliminary inspections of some dairies in the bay counties will be undertaken to test the practicability of the plans drawn up. The Bureau has secured temporarily the services of Messrs. Peter Krog, formerly manager of the Pierce Land & Stock Co. at Stockton, H. P. Glasier of the Oakland Cream Depot and S. G. Whitney, and also Prof. E. W. Major of the University of California, who will assist the Bureau in getting the inspection work on a proper basis. These gentlemen will spend some time among the dairies and creameries together, and will afterwards be divided and each given different routes. From the results of this preliminary work the Bureau hopes to develop a safe, practical and permanent plan of inspection to place in the hands of those it engages permanently.

Accompanying this article is given a copy of the schedule for rating the sanitary conditions of the dairies—a "score card," so to speak. It was drawn up so as to correspond with the requirements of the sanitary dairy law as near as possible, and at the same time to give credits to the various sanitary features of dairying according to their relative importance. The inspectors will make out one of these for each dairy visited. A similar schedule is being prepared for creameries and cheese factories. Those dairymen and creamerymen who want to secure a favorable rating from the inspectors will do well to study them and be in proper shape when the inspectors drop in on them.

Resignation of Mr. McArthur.

W. D. McArthur, holding office here as inspector of dairy exports under the Department of Agriculture, Bureau of Animal Industry, resigned his position on the 1st inst. He was first appointed as special agent in the Bureau on July 28, 1899, and assisted the dairy division in investigating Oriental markets for the sale of our dairy products. He was appointed June 5, 1901, as special dairy agent of the Bureau to supervise the manufacture, packing and delivery of butter for the navy, this being the first effort at co-operation between these two departments. Later Mr. McArthur was appointed as special agent to inspect dairy exports. Was reappointed as special agent and expert on Dec. 24, 1901, and June 23, 1902. Was appointed the following year as dairy inspector under civil service examination, and had the territory of California, Nevada and Arizona assigned to him. His latest assignment was to all territory west of the Missouri river, necessitating much travel and absence from the coast, hence his resignation. Mr. McArthur is well known on this coast and in the East as an expert on all matters pertaining to dairying, and has received high commendation for his work from the late Major Alvord, who organized and was chief of the dairy division of the Bureau of Animal Industry. His work has also been very favorably commented on by others in authority in the Department of Agriculture, as also in the internal revenue branch of the Treasury Department.

Dairy Exports for March.

Exports of dairy products from San Francisco in March, 1905, by sea, including shipments to Alaska, Hawaii and Tutuila, were:

	Value.
Cattle, 33	$ 3,365
Butter, 84,726 pounds	18,911
Cheese, 57,238 pounds	8,432
Milk	64,787
Oleo, 13,600 pounds	1,295
Total	$96,790

DAIRY SANITARY RATING.

DISTRICT NO. ..... DATE .....

NAME.	ADDRESS.	PERFECT.	RATING.
I.—THE HERD. Fifteen Points:			
1. Health of cows as indicated by general appearance		5	....
2. Cleanliness of cows—free from adhering manure and other dirt, clean udders especially		10	....
II.—SURROUNDINGS AND GENERAL SANITARY CONDITIONS. Forty-five Points:			
1. Water—pumped from well outside of cowyard and otherwise removed from any source of contamination, or from flowing stream		7	....
2. Cowyard—well drained; solid earth, so as to prevent excessive mud in wet weather and dust in dry weather; free from manure and dead animal and decaying vegetable matter; ample room for herd; hog and calf yards separate and at sufficient distance		10	....
3. Stable—well constructed, permitting good drainage; good floor, permitting perfect cleaning; no holes or cracks; no decaying manure and urine beneath floor; free from excessive odors; well ventilated and dry		10	....
4. Manure conveyed daily to a sufficient distance		5	....
5. No decaying food in feed boxes and mangers		5	....
6. Free from cobwebs		3	....
7. Whitewashed		5	....
III.—DAIRY ROOM. Fifteen Points:			
1. Clean, dry, well ventilated and free from odors		5	....
2. Good drainage, carrying liquids sufficient distance		2	....
3. Cement floor		3	....
4. Well provided with cleaning facilities—brushes, soap, boiling water, etc		2	....
5. Pig and calf quarters at sufficient distance		1	....
6. Absence of stale milk, cream and refuse matter		2	....
IV.—UTENSILS. Ten Points:			
1. Well made, well tinned and free from cracks		2	....
2. Cleaned thoroughly, including sterilizing with boiling water		5	....
3. Separator clean		2	....
4. Churn and butter apparatus clean		1	....
V.—ATTENDANTS. Five Points:			
1. Clean clothing		2	....
2. Clean hands		2	....
3. Careful to have udders of cows clean		1	....
VI.—PRODUCT. Ten Points:			
1. Milk immediately removed from stable after drawing		3	....
2 Foremilk discarded		1	....
3. Aerated and cooled at once below 68°		3	....
4. Free from odors and solid matter, as shown by strainers and settlings in tanks, vats, etc		3	....
Totals		100	....

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Just as They Are



The cut shows them—catalog I-131 tells all about them. Notice the low supply can, bottom feed, wholly enclosed gears, absence of oil cups or holes. No other separator has these advantages.

The Sharples Co. Chicago, Ill. P. M. Sharples West Chester, Pa.



Iowa Cream Separator

will skim more milk at a wider range of temperature with richer cream and with less power than any other Separator.

NO. 1—250 TO 300 LBS. CAPACITY.
" 2—350 TO 400 " "
" 3—450 TO 500 " "
" 4—650 TO 700 " "
" 5—850 TO 900 " "

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The Home Circle.

Cautious Uncle Si.

You'll never ketch old Uncle Si:
He's middlin' wide awake.
I've seen a lot o' fellers try
An' find out their mistake.
With his opinion he ain't free,
If sech a thing he's got:
He only winks and says: "Mebbe
It is—an' mebbe not."

He don't allow that he'll commit
Himself to no extent
On things most people would admit
Wus plain an' evident.
He winks when you start in to quiz—
'Twould aggravate a saint—
An' then he says: "Mebbe it is;
An' then—mebbe it ain't."

Ask him if one an' one makes two,
Or whether black is white,
If daylight comes when night is through,
If dogs an' cats will fight;
Ast him if water runs downhill,
If fire will make things hot,
An' he'll chirp up: "Mebbe it will;
Mebbe—an' mebbe not."

—Chicago News.

A Sonnet of Maidenhood.

Sigh not for me, O rosy, guarded wife,
Outlooking—from your love-encircled nest,
Where little hands grope soft about your breast—
Upon my days, storm-buffeted and rife
With the vague fears of loneliness and strife;
For sweetly though you fare and sweetly rest,
Dear is the freedom of my upward quest
And dear the promise of my cloistral life.
I love the half-blown rose, the crescent moon;
The last green hill I would not reach and climb;
Still, still I hear the faint, alluring chime
Of dreamland, silenced in your wifehood's noon
And over me shall shine till life is gone
The great white star of girlhood's dewy dawn.

—M. Cannah, in Century.

A Poor Memory.

When Calspay came down to breakfast the other morning he found Mrs. Calspay awaiting him with a certain air of expectancy. At least that was the way it impressed Calspay. He was not an observing man in some matters, but he observed that. He also observed that Mrs. Calspay was wearing a very pretty kimono and that her morning kiss was—well, perhaps a little more fervid than usual. There was nothing in all this, however, to occasion remark.

Calspay took his accustomed place at the table and unfolded his napkin. His wife smiled at him from behind the cups. He smiled back pleasantly enough.

"Well?" said the lady, inquiringly.

"Well, what?" asked Calspay in return.

"Oh, nothing. There! I forgot whether I put sugar in your coffee or not."

"Scoop into it with a spoon," suggested Calspay. "You can easily tell."

* * * * * * * *

"Henry," said Mrs. Calspay, after satisfying herself that the coffee was properly qualified, "do you remember how long it took me to keep in mind whether you took one or two lumps in your coffee?"

"Uh-huh," replied Calspay. "Push the buttered toast over this way a little, please."

"My brothers, both of them, drank theirs without sugar," pursued Mrs. Calspay, "so I was always giving you yours unsweetened. But you were always patient and nice about it."

"I am still," said Calspay, taking a large semi-circular bite out of a slice of toast and opening his paper.

"I know you are—at times. But you didn't read horrid newspapers at breakfast then, did you?"

"Eh? Er—I beg your pardon, my dear, but I didn't catch that last observation."

"No, I suppose not. I say you didn't read newspapers at the breakfast table when we were first married."

"I—yes, my dear."

"Why, you aren't listening to what I say a bit."

Mrs. Calspay sighed. "Henry," she said, softly, "do you remember the first breakfast we ever ate together?"

"Yes," replied her husband, "perfectly. We had ham and eggs and waffles. I wish we could have waffles some morning; it seems to me we haven't had them for an age.

* * * * * *

Mrs. Calspay sighed again. "It was just such a cold, snowy morning as this, wasn't it?" she said in the same reminiscent tone.

"That reminds me that I've got to get a new pair of rubbers," said Calspay.

"Do put down that paper a moment."

"Well, what is it?"

"I said a little while ago that you didn't read the paper at the breakfast table when we were first married."

Calspay looked at her in surprise. "I didn't know you objected to it, my dear," he said.

"Well, I don't—some days."

"Give me another cup of coffee, please."

"I know how much sugar to put in now, don't I?"

"You do, but you don't always do it. That last wasn't quite sweet enough."

"I have always been glad that I was married in winter."

"Why?"

"Oh, because!"

"That's a good reason."

"And I never look out on a snowy morning like this that I don't think of our first morning together. Everything was so pretty in that hotel. And I remember how the rice dropped out and I was afraid the waiter would see it. Emily threw about a quart right down my neck. I thought it was awfully mean of her."

"Speaking of Emily, I saw that brother of hers downtown the other day," said Calspay. "He looked seedier than a slice of rye bread in a Dutch lunch. Did the plumber come around yesterday?"

"Yes," answered Mrs. Calspay.

"It was about time he did. Well, I must be getting off."

* * * * * * *

"Henry, do you know what day this is?"

"Thursday."

"No, but—"

"The eighteenth. I think I'll wear my ulster this morning, and my cap. Will you hunt the cap up for me, dear? It's not on the hall rack, I know. And I want those lined gloves, too, but I won't wait for them. Just see if you can dig up the cap in a hurry. I've got about ten minutes to make that train."

He went out in the hall and slipped into his ulster and stood waiting. in a little while she came to him with the cap in her hand. He put it on and was bending for the farewell kiss when he perceived, to his amazement, two large tears trickling down his wife's cheeks, and saw that her chin was quivering.

"Why, Edith!"

"Oh," she sobbed, "you've forgotten! I did think you would care enough for that. But you've forgotten the day—the day—"

"The day?" repeated Calspay. "The day? What day are you talking about? What's the mat—oh, by Jove, yes! I had forgotten for the moment. It is our wedding day, isn't it?"—Chicago News.

Fable of the Wise Hen.

Once upon a time (very recently) a hen went upon a strike and refused to lay. Other hens followed her example and the scarcity of hen fruit which resulted caused eggs to retail for something like 50 cents per dozen. In other words, strictly fresh eggs laid by scab hens were worth about 5 cents each in the shell. Even cold-storage eggs, which were deadly explosive and had to be handled with care, brought 30 cents. The people got together and remonstrated with the hens, but it did no good. Finally an arbitration committee waited on the hens and tried to persuade them to go back to work. The arbitration committee pointed out that only the rich could afford the eggs, but the hens refused to work. The arbitration committee then told the hens that if they persisted in the strike they would bring race suicide on themselves. Then a wise old hen arose and spoke as follows: "In the spring when us hens wish to sit the people give us porcelain doorknobs to sit on. If porcelain doorknobs are as good as eggs to sit on they ought to be as good to eat as eggs. Tell the people to eat porcelain doorknobs." The arbitration committee could not answer this argument and departed in tears.

Moral—Deceit will come home to roost.—Boston Post.

The Early Morning Cold Bath.

The early morning cold bath is beneficial only to those persons who possess sufficient vital energy and nervous force to insure a good reaction with no subsequent languor or lassitude.

If one feels greatly refreshed after one's morning bath, but two or three hours afterwards feels tired or languid, there is sufficient evidence that the practice is injurious, and should be discontinued.

Those who have an ample supply of blood and flesh, who possess a lymphatic or sluggish temperament and whose nervous force is not depleted, may indulge in their morning bath to advantage.

Those inclined to be thin, whose hands and feet upon slight provocation become cold and clammy, who digest their food rather slowly, and assimilate it with difficulty, who are nervous and are burdened mentally, all such individuals should avoid bathing during the early morning hours.

To all such persons a bath during the middle of the day or before retiring at night will prove of much greater advantage.

The bath should be followed by rest of body and brain till equable conditions of circulation are re-established.

Then there is another class of persons—those who are weak in nervous power, but who have such excitable peripheral nerves that after a cool bath perfect reaction takes place at once, losing more, however, in after effects than gaining in the first place from the bath.

This class of individuals should not bathe too freduently, and when they do bathe, should use tepid water; for these before retiring is probably the best time to choose for the bath.

Couldn't Afford a Bargain Day.

Governor La Follette of Wisconsin was describing the sharp business methods, the intense economy, of a certain company of business men.

"Those men," he said, "should live in Duckwater. Perhaps it was from Duckwater that they originally came. They have certainly all the Duckwater characteristics.

"What, you have never heard of Duckwater? Well, then, here is an illustration for you of the character of the town:

"A drummer went to Duckwater one winter, and to the leading merchant, in an effort to sell a line of cotton goods, he said:

"'These goods, sir, would make a tempting line for a bargain day.'

"'A bargain day?' said the merchant. 'We have no bargain days in Duckwater, sir.'

"'No bargain days in Duckwater? Why is that?' asked the drummer, quite amazed.

"'Because,' replied the merchant, 'if we had bargain days here nobody would buy anything on the other days, sir.'"

Latest Swindle.

The latest swindle reported being worked on country people looks easy. A nice appearing man stops at a farmhouse and informs the occupant that he has lost a valuable diamond pin. He and the farmer make a diligent search, but fail to find the jewel. The well dressed chap tells the farmer, on going away, he will give $100 for the return of the jewel. A week or so after a tramp comes in and tells the farmer that he has found a diamond pin. The farmer, after some dickering, gets the pin for $25. After waiting some time the pin is taken to a jeweler when it is found that 15 cents would have been a big price for it.

The Diet for Rheumatics.

One-half of the world is rheumatic, the doctors tell us, and the only way for those who suffer to lighten their pains and worries is to observe a certain regimen. But which? How many prejudiced, erroneous, contradictory or superannuated ideas exist on this subject!

Often predisposed to it by heredity, the sufferer from rheumatism is the one who does not perfectly assimilate his food. Eating too much, or improper food, having regard to his sedentary indoor life, his nutrition is lessened. His tissues are loaded with quantities of organic waste and residuum which have failed to oxidize and are imperfectly eliminated by the kidneys and the skin. His blood is covered as with drifting ice by urates and oxalates, in train to become crystallized in some part or other of the body. Hence a tendency to obesity, a disposition to chronic rheumatism, gall and bladder stones, gout, diabetes, neuralgia and skin eruptions, such as eczema. Failing exercise or work in the open air capable of giving a touch of the whip to the sluggish nutrition, the only course is to seek the remedy in some other direction, that is to say, by a course of diet which shall exclude foods likely to furnish poisons to tissues so inept at getting rid of them. The urates come from meat; the oxalates come mostly from vegetables.

It follows that the sufferers from rheumatism should eat little meat, and should prefer boiled meat to roast meat. The process of boiling has the effect of extracting from the muscular tissue in meat much of its hurtful properties. Naturally boiled the particles of these must not be eaten. White meats, so much recommended formerly for delicate stomachs and for convalescents, should be banished entirely from the menu. Professor Gautier has shown by analyses that such meats are extremely rich in albumen, acids and phosphorus. In this category are pigeon, veal, chicken, rabbit, kid, the fibrous and gelatinous parts of animals, i. e., feet, head, ear, etc.; also sweetbreads and calves' brains, game, pork and salted meats. In fine, eat as little meat as possible. There are some vegetables also that are not a whit better, by reason of containing oxalic acid. Thus, sorrel, spinach, rhubarb, white haricot beans and French beans, radishes and broad beans. All others are allowable, including the tomato. On the other hand, cabbage, potatoes, carrots, turnips, lentils, peas, leeks, asparagus, watercress, chicory, corn salad and salad are harmless to the rheumatic.

Among fruits the most to be recommended are grapes, oranges, lemons, apples, pears and plums. It may be objected that the fruits named are acid. Yes, but not with oxalic, but other kinds of acid (tartaric, malic, citric) which possess the property when decomposed in the system of alkalinizing "humors."

German doctors recommend lemons in cases of gout, rheumatism, and liver colic. This cure consists in imbibing within twelve to fifteen days the juices of 200 to 250 fresh lemons. Grape cures also are good in certain diseases. Sweets and confectionery need form no part of the bill of fare. Their value is not much in any case. Sugar is a source of energy useless to persons condemned to sedentary life, and butter is positively harmful. Eggs, on the other hand, are excellent food. Pie-crust is allowable, but of bread only a limited quantity. Bread is almost as harmful as meat, as containing free phosphoric acid; boiled potato is a good substitute for it. As regards condiments, salt in

very small quantity, vinegar, and lemon-juice are permissible.

Dr. Gautier, an eminent authority on the subject, is not favorable to the use of fish by rheumatic persons. In any case it should certainly be fresh, and not of the oily varieties. Carp, gudgeon, herring, trout, perch, pike, cod, skate, whiting, mullet, plaice, sole are of this class, while salmon, mackerel, turbot and shad belong to the fat fish. Avoid shell fish generally. Certain species of these give rise to eczema and skin complaints. The rheumatic subject should never imbibe alcohol in the form of stimulants. The beverage for him is water, which is excellent for purifying the blood and kidneys. Dr. Gautier allows cider, light wines, and light beer in small quantity. He should avoid altogether aerated waters, especially those from a chalky source. Milk is the natural food and diuretic of sufferers from this complaint. Tea and coffee are not harmful, but cocoa is, as containing oxalic acid.

With all these restrictions let not the arthritic suppose that he is put on short commons. He has still left a fine scope for doing himself well if so inclined, and still be quit of his gout or his rheumatism. Possibly even he is to be envied his vegetarianism, which, according to those who have practiced it, tends to make spirits mild and pacific.—Almanach Hachette, 1904.

Domestic Hints.

Salmon Balls. — Mix a cupful of mashed potatoes with a cupful of shredded boiled salmon, season highly with salt, pepper and a third of a cupful of melted butter. Roll into balls, baste with a beaten egg and roll in fine cracker crumbs. Fry in hot lard and serve with mayonnaise dressing or a cream sauce.

Lemon Cream.—Into a pint of boiling water mix two tablespoonfuls of arrowroot. Add a cupful of sugar and the juice of two lemons; boil five minutes and remove from the fire. Beat in thoroughly the yolks of two eggs, turn into a mold and when cold serve with the whites of the eggs beaten to a froth with four tablespoonfuls of powdered sugar, and spread over it.

Tomato Pie.—Line a pie plate (one of the deep kind) with a good and not too rich crust. Turn the contents of a can of tomatoes into a stewpan and set over the fire. When boiling hot, add a little flour and allow the mixture to simmer until it begins to thicken, then remove from the fire, stir until cool and turn into the pie plate. Cover thickly with coarse cracker crumbs, drop bits of butter over it and a dash of pepper, salt and sugar, and bake.

Prune Cornstarch.—Set a quart of milk over the fire in a double boiler; beat up two eggs with three tablespoonfuls of sugar, two of cornstarch, and make thin with a little milk. Add this to the milk, stir until it thickens; take from the fire, adding a little vanilla, and stir in some chopped prunes which have been soaked over night. Stir well and pour into a mold to cool.

Eggs a la Martin.—Have ready a dish that can be put in the oven and baked. It should be like a deep, ordinary soup plate, without the wide rim. It is easy enough to find plenty such at any store. Have it heated, but not too hot. Put into a small saucepan a teaspoonful of butter. Let it melt, but be careful that it does not brown. Then add a teaspoonful of flour (or more, if it is preferred thicker), and then very slowly, after the flour is well mingled, a cup of milk or cream. Then add four tablespoonfuls of grated cheese. Stir well, and when thoroughly heated pour into the dish you have ready, and with great care (so as to keep the shape) drop into the mixture four eggs. The ordinary dish will hold about four eggs and look well, but it may be possible to find larger ones. Put at once into the oven, and when the eggs are set serve at once.

Hints to Housekeepers.

Extra care should be taken not to get chilled when overtired.

If silver is washed every week in warm suds containing a tablespoonful of ammonia the polish can be preserved for a long time.

Raisins for fruit cake are much improved by cooking. Let them soak slowly and then simmer until the skin is tender.

In using flat-irons, if they are rubbed on a piece of brown paper covered with soap, and then a sprinkle of salt, they will be found to run easier and not stick.

No more soggy piecrust. Sprinkle the bottom and side crusts of the pie with finely grated breadcrumbs. They will not be noticed in the fruit and mince pies.

Don't forget to rinse the face with clear water after using soap, because you do not want any left on the face to clog the pores. Once a day is quite often enough to use soap.

Chamois is one of the few things which comes out smooth and soft from washing if wrung directly from the soapsuds without rinsing in clear water. The latter process tends to harden it.

Physicians are advocating the use of pure olive oil for weak lungs. It bids fair to take the place of cod-liver oil, and is pleasanter to take. Olives, as a food, are considered very strengthening for those with lung troubles.

Avoid the dark circle around the yolks of hard-boiled eggs by putting them to cook in cold water and allowing them to boil slowly fifteen to twenty minutes after the water comes to the boiling point.

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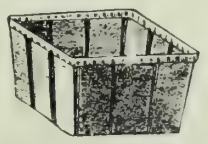
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Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
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Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.
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The Markets.

San Francisco Produce Report.

San Francisco, May 3, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	May.	July.
Wednesday	$ 93¾@ 91	85⅝@ 83⅝
Thursday	86¾@ 90	82⅜@ 83⅛
Friday	89 @ 88⅝	83½@ 82½
Saturday	89 @ 86½	83½@ 81¾
Monday	87 @ 90	82 @ 83½
Tuesday	90½@ 93	82⅞@ 84

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	May.	July.
Wednesday	47 @45⅝	47½@46
Thursday	45 @46⅛	45⅝@46½
Friday	45½@46⅜	46½@47⅜
Saturday	46⅜@45¾	46⅜@45¾
Monday	45⅝@47	45⅝@46⅞
Tuesday	47¼@48⅜	46⅜@47½

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$ ——@——	$1 27½@1 28
Friday	1 42¼@1 43⅛	1 28⅛@1 29½
Saturday	1 42¼@——	1 28¼@1 28¾
Monday	——@——	1 30⅛@1 29
Tuesday	——@——	1 28¾@1 29¼
Wednesday	1 44½@1 45	1 29⅞@1 29½

*Holiday.

Wheat.

Trading in actual wheat is of very small proportions in the San Francisco market, owing to the exceedingly limited supplies now available. There will be little doing in the sample market until new wheat begins to come forward in wholesale quantity. The bears are very confident of having things their own way in the speculative field for some time to come, anticipating a big yield of wheat and low prices. But they may be greatly disappointed. Should the harvest come up to the expectations of the most sanguine shorts, speculative values for futures have already touched as low figures as are warranted. This is not saying that speculative values cannot be crowded to materially lower levels, as all kinds of unwarranted and unreasonable things are almost every day happening where large money is involved. Manipulators are constantly watching for an opportunity to cinch the crowd. The cinching is what makes the game interesting to the heavy operator. He will go either short or long to accomplish his end. Sometimes the big biter gets bit, and it is the rare exception where the small speculative operator does not come out loser in the end.

California Milling	$1 50 @1 55
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 40 @1 42½
Oregon Club	1 40 @1 47½

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.42½@1.45
December, 1905, delivery, $1 27⅛@1.30½.

Wednesday, at the forenoon session of Exchange. May, 1905, wheat sold at $1.44½@1.45; December, 1905, $1.29⅞@1.29½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7s0d@7s0½d	-s-d@-s-d
Freight rates	16½@-s	22½@-s
Local market	$1 30@1 32½	$1 40 @1 45

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on May 1 and April 1:

Tons.	May 1.	April 1.
Wheat	*23,156	28,115
Barley	† 4,280	8,374
Oats	2,226	4,230
Corn	543	110

*Including 7781 tons at Port Costa, 13,777 tons at Stockton.
†Including 1546 tons at Port Costa, 1937 tons at Stockton.

Stocks of wheat in near-by warehouses on the 1st inst. show a decrease of 4959 tons for the month of April. A year ago there were 32,168 tons of wheat and 15,568 tons of barley in near-by warehouses.

Flour

Only moderate quantities of flour are going outward, and movement on local account is not of heavy volume. While stocks are of rather moderate proportions, they are sufficiently large, in connection with the nearness of the new season, to cause an easy tone to prevail. Values are without quotable change, but only on favorite marks are full prices obtainable, and then only in a limited way at present from close cash buyers.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Business is mostly in feed descriptions and is not active, buyers in the majority of instances confining their operations to immediate needs, not caring to stock up heavily at this late date in the season and having the impression that any changes in prices in the near future are more apt to be in their favor than against them. There is not much barley on hand and prices for old are likely to remain close to present levels until new stock begins to come forward. That market for new barley will open as low as speculative values now indicate is by no means a foregone conclusion. The harvest may not be so heavy and the pressure to realize not so great as now anticipated by the speculative sellers.

Feed, No. 1 to choice	$1 20 @ —
Feed, fair to good	1 17½@ —
Brewing, No. 1 to choice	1 22½@1 25
Chevalier, No. 1 to choice	1 22½@1 25
Chevalier, common to fair	1 17½@1 20

Oats.

Arrivals lately have been decidedly light of this cereal, and are likely to so continue until new oats are harvested. Spot supplies of common feed qualities are, however, of more than ample proportions for current needs. Market for ordinary grades of feed oats lacks firmness, and especially is this the case with Blacks. Choice to select oats of all varieties are scarce.

White oats, fancy feed	$1 50 @1 55
White, good to choice	1 47½@1 50
White, poor to fair	1 42½@1 45
Milling	1 45 @1 50
Black oats	1 25 @1 40
Red, fair to choice	1 35 @1 60

Corn

Large White is being shipped freely to Central America, Saturday's steamer taking 612 tons. Market for above variety is more favorable to sellers than for Large Yellow, inquiry for latter being mainly on local account. Small Yellow is moving rather slowly at prices asked.

Large White, good to choice Cal	$1 32½@1 40
Large Yellow	1 27½@1 32½
Small Yellow	1 55 @1 65
Egyptian White	—— @——
Egyptian Brown	—— @——
Eastern, sacked	1 27½@1 32½

Rye.

Market is lightly stocked and desirable qualities are being firmly held.

Good to choice	$1 55 @1 65

Buckwheat.

Very little offering. There has been some inquiry lately for seed.

Good to choice	$2 00 @2 25

Beans.

Good to choice beans are being in the main steadily held. There is a fair movement outward, both by sea and rail. There are a good many damaged beans on the market, with holders of the same anxious to unload, and for this sort the market is weak. Mixed beans and beans showing adobe also incline against sellers.

Pea, good to choice, 100 lbs	$3 25 @3 50
Small White, good to choice	3 25 @3 50
Large White	2 50 @3 00
Pinks	3 50 @4 00
Bayos, good to choice	3 25 @3 50
Red Kidneys	4 50 @5 00
Reds	6 00 @6 50
Limas, good to choice	4 75 @4 90
Black-eye Beans	2 70 @3 00

Dried Peas.

Market is very lightly stocked with good to choice. There have been some orders from Oregon and Washington for seed.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 50 @2 00

Hops.

The hop market is unsettled. Most of the hops on this coast have been pooled, and 30c is the price fixed by growers in the pool. Stocks in Oregon are estimated at 17,000 bales and in Washington at 6500 bales. A dealer in this State, who is also a grower, announces that he has associated with him several heavy capitalists for the purpose of engaging more extensively in the business of both growing and selling hops, making a specialty of long contracts with brewers. The same party places the coming crop in this State at about 24,000 bales. The New York Producers' Price Current says: "An exceedingly dull market has prevailed here this week. No local transactions are reported. Up State we hear of the sale of about 100 bales at 27½c purchased by an exporter. A few smaller sales of brewing hops have been made at 25c. There seems quite a demand for roots, which indicates that there may be considerable new acreage set out in this State this spring. Foreign advices show no new features."

California, good to choice, 1904 crop	25 @28

Wool.

There are free receipts from the interior, representing prior arrival purchases, and most of this wool is being forwarded East as rapidly as it can be prepared for shipment. Dealers are instructing their country buyers and agents in substance to let no wool escape them if it is to be had at any figure within the bounds of reason.

SPRING.

Humboldt and Mendocino	25 @26½
Northern, free	24 @25½
Northern, defective	21 @22
Middle County, free	20 @23
Middle County, defective	17 @19
San Joaquin and Southern, free	18 @20
San Joaquin and Southern, defective	13 @16
Oregon, good to choice	20 @24
Nevada	16 @23

Hay and Straw.

There is a slightly better tone to the hay market, more particularly for the better grades, the belief being entertained that there will be less choice hay from this year's crop than was harvested last season, and that improved prices will be realized. Most of the hay now offering is of low grade, and this sort is not moving rapidly or meeting with noteworthy competition from buyers.

Wheat, good to choice	$11 00 @ 13 50
Wheat and Oat	9 00 @ 11 50
Tame Oat, fair to choice	8 00 @ 11 00
Wild Oat	7 00 @ 9 00
Barley	8 00 @ 10 00
Alfalfa	7 00 @ 10 00
Clover	6 00 @ 9 00
Stock hay	5 50 @ 7 00
Compressed	11 00 @ 13 50
Straw, ₱ bale	25 @ 50

Millstuffs.

Bran and Middlings are offering in greater quantity than necessary for immediate demand. Lower prices for both in the near future are highly probable. Tendency on Rolled Barley and Milled Corn is to lower figures.

Alfalfa Meal, ₱ ton	$17 50 @ 19 00
Bran, ₱ ton	21 00 @ 22 00
Middlings	25 00 @ 28 00
Shorts, Oregon	21 00 @ 22 50
Barley, Rolled	26 00 @ 26 50
Cornmeal	28 50 @ 29 50
Cracked Corn	29 00 @ 30 00
Oilcake Meal	32 50 @ 34 00

Seeds.

A round lot of Alfalfa arrived this week, too late for this season and too early for the next. Market for the several kinds of seeds quoted herewith is very quiet at quotably unchanged values.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6¼@ 6½
Rape	1¾@ 2¼
Hemp	3½@—
Timothy	5 @ 5½

Honey.

The steamer City of Peking, sailing Saturday last, took 85 cases for Belgium. Movement on local account is light. Buyers are holding off, anticipating arrivals of new crop at an early day.

Extracted, White Liquid	5½@ 6
Extracted, Light Amber	4 @ 5
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

A shipment of 2,007 lbs. went forward by steamer for Belgium. Values are being maintained at previously quoted range.

Good to choice, light ₱ lb	29 @30
Dark	27 @28

Live Stock and Meats.

Market for Beef is without special change, but lacks firmness, offerings proving more than ample for current needs. Veal is in moderate receipt and desirable sizes are in fair request. No changes to record in prices for Mutton or Lamb, but the market for both is rather easy in tone, there being no scarcity of offerings. Not many Hogs arrived, but market was not especially firm. Demand was mostly for choice medium and small fat.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5 @ 5½
Beef, 2nd quality	— @ 5
Beef, 3rd quality	4 @ 4½
Mutton—ewes, 6@7c; wethers	7 @—
Hogs, hard grain, 130 to 180 lbs	5¾@ 5¾
Hogs, large, hard, over 180 pounds	5¾@ 5½
Hogs, small, fat	5½@ 5⅝
Veal, large, ₱ lb	4 @ 6
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8 @—
Lamb, spring, ₱ lb	9 @10

Hides, Skins and Tallow.

Market for Hides in prime condition is firm at current figures. Pelt market is steady, demand being fair at ruling values. Tallow is going outward in considerable quantity, Saturday's steamer for Central America taking 24,018 lbs.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11½	— @10½
Medium Steers, 48 to 56 lbs	— @11	— @10
Light Steers, under 48 lbs	— @10	— @ 9½
Heavy Cow Hides, over 50 lbs	— @10½	— @ 9½
Light Cow Hides, under 50 lbs	— @10½	— @ 9½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	— @11	— @10
Wet Salted Veal	— @11½	— @10½
Wet Salted Calf	— @12½	— @11½
Dry Hides	18 @18½	17 @—
Dry Kip and Veal, 11 to 16 lbs	— @16	— @14
Dry Calf, under 4 lbs	— @20	— @18
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

There are no changes to note in quotable values or the general tone of the market. Grain Bags are being quite steadily held.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6¼@7¼
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6⅛@—
Grain Bags, Calcutta, buyer June-July	6⅛@6¼
Wool Sacks, 4 lb	32 @—
Wool Sacks 3¼ lb	30 @—

Poultry.

Arrivals were fairly liberal, both of California and Eastern poultry, largely Chickens. For common Old Hens the market was slow and lacked firmness. Large and fat Young Chickens were in good request. Broilers sold to a little better advantage than previous week. Turkeys were in light receipt and fair demand. Ducks and Geese in prime condition did not lack for custom. Demand for Pigeons was not particularly active.

Turkeys, Dressed, choice, ₱ lb	$ 21 @ 23
Turkeys, live gobblers, ₱ lb	18 @ 20
Turkeys, live hens ₱ lb	18 @ 20
Hens, California, ₱ dozen	4 50 @ 5 00
Hens, large	6 00 @ 6 50
Roosters, old	4 00 @ 4 50
Roosters, young (full-grown)	7 00 @ 7 50
Fryers	5 50 @ 6 50
Broilers, large	3 50 @ 4 00
Broilers, small to medium	2 25 @ 2 75
Ducks, old, ₱ dozen	6 00 @ 6 50
Ducks, large young, ₱ dozen	6 50 @ 7 50
Geese, ₱ pair	2 25 @ 2 50
Goslings, ₱ pair	2 50 @ 3 00
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	1 50 @ 1 75

Eggs.

Market has developed an easier tone, especially for other than most select fresh, uniformly large and white eggs. Receipts are considerably in excess of immediate needs and the speculative demand is less active. Prices for good to choice offerings, however, are not likely to recede materially from current levels.

California, fancy flat, new	10½@—
California, good to choice	10 @10½
California, fair to good	9½@10
California, "Young Americas"	10 @11
Eastern	16½@17½

Butter.

Although there are free arrivals, there are no accumulations, the demand being good at prevailing prices. Jobbers and retailers are storing against future needs. Most of the butter coming forward is of high grade, and there is in consequence a narrow range in values.

Creamery, extras, ₱ lb	19 @—
Creamery, firsts	18½@—
Creamery, seconds	18 @—
Dairy, select	18½@—
Dairy, firsts	18 @—
Dairy, seconds	17½@—
Mixed Store	16 @17

Cheese.

Stocks of flats are showing marked increase and buyers are obtaining decided concessions. Prices will probably soon get down to a point which will stimulate speculative buying on cold storage account. Small cheese are not in heavy supply, neither is the demand for them brisk.

California, select, large, white and fresh	19 @—
California, select, irregular color & size	17½@18½
California, good to choice store	16 @17
Eastern firsts	— @—
Eastern seconds	— @—

Vegetables

Asparagus was in fairly liberal supply, but there was a good demand, both for immediate use and canning. Peas and String Beans were more plentiful and market easier. Tomatoes were on market from Florida and were held at $4@5 per crate of six baskets, as to condition. Los Angeles and Mexican Tomatoes were in moderate receipt. Old Onions were mostly Brown Australian. New Red Onions were in good supply, as compared with demand.

Asparagus, No. 1 to choice, ₱ lb	5½@ 7
Asparagus, No. 2, ₱ lb	4 @ 5
Beans, Lima, ₱ lb	— @—
Beans, String, ₱ lb	8 @ 12½
Beans, Wax, ₱ lb	— @—
Cabbage, choice garden, ₱ 100 lbs	50 @—
Egg Plant, ₱ lb	15 @—
Garlic, ₱ lb	10 @ 12½
Mushrooms, ₱ lb	— @—
Onions, Australian, ₱ ctl	5 00 @—
Onions, New Red, ₱ ctl	2 50 @ 3 00
Peas, Green, ₱ lb	3 @ 5
Peppers, Bell, ₱ lb	— @—
Peppers, Green, ₱ lb	10 @ 15
Rhubarb ₱ box	35 @ 75
Summer Squash, small box	1 25 @ 1 50
Tomatoes, Los Angeles, ₱ box	2 00 @ 2 50
Tomatoes, Florida, ₱ crate	4 00 @ 5 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Potatoes.

Old potatoes were in light supply and for good to choice the market was firm. Some Minnesota Burbanks were brought in by steamer via Portland, and were placed at $1.50 per cental. Fancy Coos Bay Burbanks were sold up to $1.70. New potatoes were in increased receipt and sold at a lower range than last quoted.

Cal. Early Rose, ₱ cental	— @ —
Salinas Burbanks, ₱ cental	— @ —
River Burbanks, ₱ cental	75 @ 1 20
River Reds, ₱ cental	85 @ 1 00
Oregon Burbanks, ₱ cental	1 00 @ 1 50
New Potatoes, ₱ cental	1 25 @ 1 75
Sweet Potatoes, ₱ cental	— @ —

Fresh Fruits.

Cherries were in light receipt, considering that this fruit has been on the market for several weeks. Choice Black Tartarian brought good prices, and Purple Guigne in prime condition sold to fair advantage. Small White and Red Cherries were not actively sought after. Gooseberries were in moderate supply, including some of the English variety which sold mainly at 12½@15c. per ℔. for choice; Oregon Improved were in the main held at $1.00@1.25 per 10-℔. box. Loganberries from Watsonville sold in a small way at $1 per drawer. Raspberries from Los Angeles brought in a limited way 25@30c. per basket. Blackberries and Dewberries from the South were quoted at 7½@10c. per 1-℔. basket. Strawberries made a fairly liberal showing most of the week as to quantity, but the quality was not in all instances desirable; for good to choice there was a tolerably active demand and prices ruled fairly steady. Apples are still offering out of cold storage, and at quite reasonable figures, considering the time they have been carried.

Apples, fancy, ℔ 50-box	2 00	@	2 25
Apples, good to choice, 50-℔. bx	1 50	@	2 00
Apples, fair to good, ℔ box	1 00	@	1 50
Cherries, Black, good to choice, bx	1 25	@	1 75
Cherries, Purple Guigne, ℔ box	1 00	@	1 50
Cherries, White, good to choice, bx	65	@	1 00
Strawberries, Longworth, ℔ chest	7 00	@	10 00
Strawberries, large var., ℔ chest	3 00	@	6 00

Dried Fruits.

Spot stocks are light of most kinds and are showing steady reduction. The steamer Ventura, sailing the past week for Australia, carried 52.080 pounds, exclusive of Raisins. Of the above quantity, the greater amount, or 44,225 pounds, was for New Zealand. Included in the shipments were 14,495 pounds Prunes for New Zealand and 5980 pounds for Australia. The latter country took 19,525 pounds Apples. The steamer Umatilla, sailing April 30th for British Columbia, took 30,750 pounds dried fruit, including 25,500 pounds Prunes, 2500 pounds Apricots, 1500 pounds Figs, 1250 pounds Peaches. Quotations for spot stock show no material change, but market in the main is decidedly firm. New crop Santa Clara Prunes are not offering under the 3c. basis. There is some talk among dealers of 5c, 5¼c. and 6½c. for standard, choice and fancy new Peaches, August-September delivery, but no business reported. Choice to fancy new Pears will likely rule stiff. New Apricots are quoted at 5¾@6c, orchard run.

EVAPORATED OR BLEACHED.

Apples, 50-℔ boxes, rings, pressed, good to choice	5½@ 6
Apples, extra choice to fancy, 50-℔ boxes	6½@ 7
Apricots, Moorpark	10 @12
Apricots, Royal, good to choice, ℔ ℔	8 @ 9
Apricots, Royal, fancy	10 @11
Figs, 10-℔ box, 1-℔ cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ ℔	6½@ 7
Pears, choice to fancy	7½@10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4@4¼c; 50-60s, 2¾@3c; 60-70s, 2¼@2½c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1½@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3½
Figs, White, in bulk	3 @ 3½
Figs, Black	2½@ 4

Raisins.

On Saturday last the raisin growers proceeded to form a stock company, with headquarters at Fresno, and abandoned the co-operative plan. The company carries one share of stock to the acre, and 35,070 acres are signed up, being 70 acres more than required. The steamer Ventura took 26,314 pounds raisins, mainly for New Zealand. Small quantities were shipped north and to the Orient.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-℔ box	85	@	——
London Layers, 3-crown, 20-℔ box	90	@	95
Fancy Clusters, 4-crown, 20-℔ box	——	@	1 30
Dehesas, 20-℔ box	——	@	1 85
Imperials, 20-℔ box	2 25	@	2 35
2-Crown Standard loose Muscatel			3¼@3¼c
3-Crown Standard			4 @4¼c
4-Crown Standard			4¾@ —c
Seedless Thompsons			—@4½c
Seedless Sultanas			—@3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4⅞c
Choice, 12-oz. Seeded			4⅝c
Bleached Sultanas, Woodland Dist., 50s			4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s			5½@8 c

Citrus Fruits.

Oranges were in fairly liberal supply, compared with the demand, which was not so active as earlier in the season, partly owing to the quality averaging lower, but in a great measure due to the presence of berries and cherries on the market. For strictly choice Navels the market was firm, and few of this sort to be had. Lemons were held at much the same figures as previously quoted, with movement slow and inquiry mainly for choice to select. Prices for Limes were without change.

Oranges, Navels, choice to fancy, ℔ bx	2 00	@	2 50
Oranges, Navels, fair to good, ℔ box	1 25	@	1 75
Oranges, Seedlings, ℔ box	1 00	@	1 25
Oranges, Cal. Tangerines, half box	1 25	@	2 00
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 25	@	1 50
Grape Fruit, ℔ box	1 50	@	2 25
Limes, Mexican, ℔ box	4 50	@	5 00

Nuts.

The market is exceedingly quiet in the wholesale quarter. Prime to choice Almonds and Walnuts are not in heavy supply and are not being crowded to sale.

Chestnuts, Italian, ℔ ℔	—	@—
Nonpareil Almonds	13	@16
Ne Plus Ultra Almonds	11	@14
Languedoc Almonds	8	@11
Peanuts, fair to prime	5	@ 6¼
Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	10	@11
Cal. Walnuts, No. 1 hard shell	11	@12
Cal. Walnuts, No. 2 hard shell	9	@10

Wine.

No new features are reported in the wholesale wine market. Offerings of good to choice dry wines are not heavy. Dry wines of 1904 remain quotable at 14@17c per gallon, San Francisco delivery. Sweet wines of last vintage are obtainable in bulk at 25c per gallon at winery, not including package, or at 27½c per gallon in a jobbing way, San Francisco delivery. Receipts of wine at San Francisco last week were 270,750 gallons, as against 221,000 gallons previous week, and 334,398 gallons for corresponding week last year. Receipts for April, 1905, were 1,094,520 gallons, and for April, 1904, were 1,541,148 gallons. The steamer City of Peking, sailing Saturday last, carried 69,528 gallons wine, including 64,124 gallons for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	77,764	3,871,261	4,711,968
Wheat, ctls	18,595	2,5 5 639	2,092,185
Barley, ctls	43,541	3,200,677	5,096 059
Oats, ctls	630	807,444	817,073
Corn, ctls	9,008	235,526	142,710
Rye, ctls	1,308	51,071	52,238
Beans, sks	6,591	600,723	680,185
Potatoes, sks	16,082	1,154,162	1,167,586
Onions, sks	846	123 089	143,294
Hay, tons	1,829	157,352	152 955
Wool, bales	6,434	63,634	49,977
Hops, bales	..	39,080	29,467

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	27,908	2,534,524	2,973,648
Wheat, ctls	483	804,852	903,6 0
Barley, ctls	15,765	1,852,728	4,052,122
Oats, ctls	62	76,744	22,725
Corn, ctls	5,560	108,537	16,924
Beans, sks	262	47,507	37,348
Hay, bales	2,591	214,904	212,495
Wool, lbs	....	830,690	2,308,263
Hops, lbs	3,018	379,551	584,816
Honey, cases	2	2,424	4,753
Potatoes, pkgs	1,421	102,699	101,746

Mr. Durst's Hop Views.

TO THE EDITOR:—I have just received telegraphic advice that the English syndicate has advanced prices on hops 10s per cwt. This means an advance of 2 cents per pound and is the first fruit of the determination by Oregon growers to hold their unsold 1904 hops until 1st of August or longer unless prices reached 30 cents per pounds or better in the meantime. This determination was agreed to by holders of 90% of the entire stock remaining in growers hands. With conditions as they are hops should be selling at 30 to 35 cents per pound.

The stocks in the United States do not exceed:

	Bales.
Oregon	17,000
Washington	8 500
California	6,000
New York	4,500
Total	36,000

This is barely a normal two months' supply. In England there are less than 30,000 packets in growers hands, or about one month's normal supply. Stocks in dealers hands the world over are practically nil. Brewers hold from one week's to ninety days' supply. We believe there is not an average of thirty days' supply in brewers hands. If stocks were as large as "bear" dealers report hops would be worth less than 15 cents per pound, and there would be little demand for them even at this price. Growers believe that perhaps every bale of hops held on this coast have been sold by bear dealers to brewers, and they are trying to force prices down so they may buy them at a big profit. Growers are going to see this fight out to a finish. It is a fight between owners of hops and bear gamblers. M. W. DURST.

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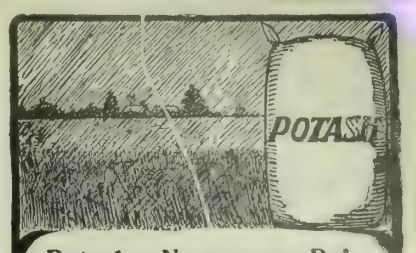
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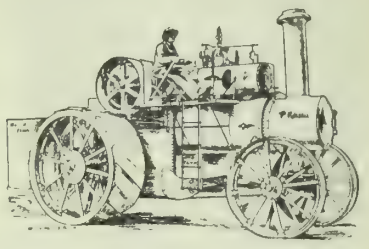
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ALHAMBRA, 230.—M., H. C. Raap; L., James Kelly; Sec., Mrs. L. T. Raap. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Martinez.

AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham. 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D. Magnon.

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A Valuable Paper.—The Pacific Rural Press of San Francisco has been designated by the State Grange Executive Committee as the official organ of the State Grange of California. The Grange has made no mistake in its selection, for the above journal is one of the most valuable in the country for the farmer, orchardist and stock raiser. All subjects are treated in an able, instructive and interesting manner and every effort is put forth at all times to advance the best interests of the State. The Pacific Rural Press has done much to upbuild the farming, fruit growing and dairying interests of California, and each succeeding year the scope of its usefulness increases. It is to be congratulated, and the Pajaronian takes occasion to extend best wishes.—Watsonville Pajaronian.

Sister Gamble Becomes Master.

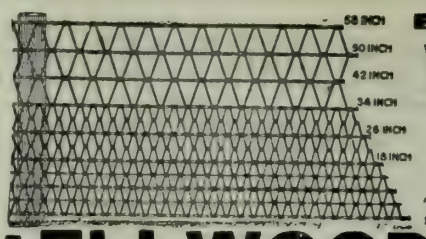
At the last meeting of Santa Rosa Grange, says the Republican, Mrs. Martha Gamble was elected Master in the place of T. J. Pilkington, resigned. Mrs. Gamble was installed in the office by Overseer Mac and called the Grange to order and began the work of the session in a business-like way.

Secretary Fannie Gambie read a communication from Bennett Valley Grange extending an invitation to the annual picnic in that place on May 27.

A contribution was acknowledged from Mark McDonald, Jr., consisting of a choice lot of California cured fruits for the county exhibit at Portland. They were two boxes of Burbank Sugar prunes, two boxes of Silver and three of selected California prunes.

A fine harvest feast was presided over by Mrs. Mary M. Gregory and Miss Fannie Gamble and enjoyed by the Grangers. A fine musical program was given during the lecture hour.

The next meeting of the Grange will be held May 6, and May 13 the members will attend in a body the meeting of Pomona Grange in Petaluma.



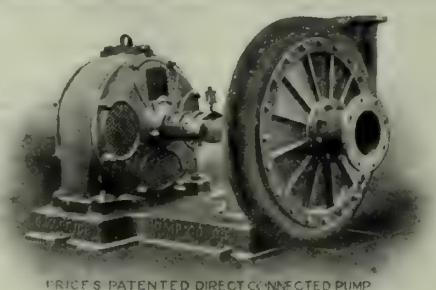
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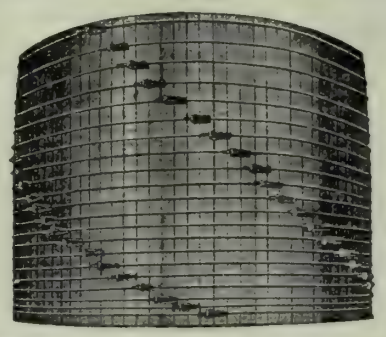
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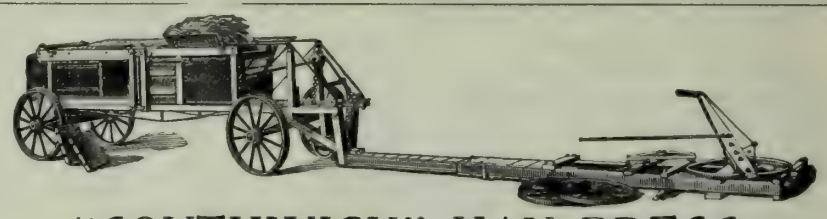
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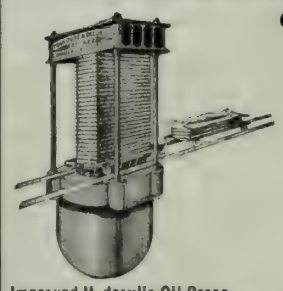


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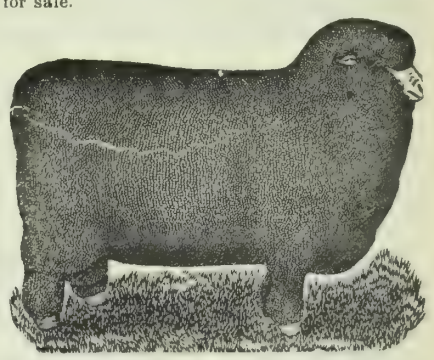
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Garget—Congestion of the Udder.

From the Veterinary Department, Exreriment Station, Kansas State Agricultural College.

Garget is a disease of the udder usually affecting heavy milkers. It may occur at any time of the year, is not confined to any particular locality, and is not contagious. The udder being a highly organized gland, any condition which affects the general health of the cow is very apt to involve this structure and show itself in the form of gargety milk. It frequently happens that a cow is affected with garget or gives bloody milk at more or less irregular intervals. Such animals should be examined by a competent veterinarian, as it is quite likely that the animal has some special disease of the udder, such as tuberculosis or actinomycosis. In that event the milk would be considered unfit for food, even during the apparently normal condition of the animal, though it may look perfectly healthy. The germs might be present in the milk and transmit the disease to the other animals using it. The presence of these germs in the milk could be demonstrated only with the microscope.

Causes.—Injuries (blows on the udder with stones, clubs, feet or horns, from projecting nails, or edges of boards, sharp or cold stones); exposure to sudden and extreme changes of weather; overfeeding on rich food, such as cottonseed, peas or beans; indigestion; sores on teats, or insufficient stripping of the udder; it also frequently happens that a newly born calf cannot drain the udder completely; overstocking of udder for an entire day or more with a view to making a show of this organ for sale purposes.

Symptoms.—Usually, the first that is noticed is the condition of the milk, which is watery, colored with more or less blood, and containing a clotted, stringy substance (casein). This is frequently followed by a white, pus-like fluid and, in many cases, a very offensive odor.

In severe cases the first symptoms to be noticed are first a chill, with horns, ears and limbs cold. This stage, which lasts from a few minutes to hours, is followed by a period of fever in which the horns, ears and limbs become unnaturally warm and the udder is hot, swells, and becomes more or less solid in one or more quarters. The muzzle is dry and hot; the temperature of the animal is raised, the pulse is full and rapid; the breathing is quickened. The cow has little or no appetite, and she does not chew her cud. The bowels are more or less costive. The amount of milk is lessened and the flow may be entirely absent in the affected portion of the udder.

In mild cases many of these symptoms cannot be recognized and the first ones noticed are the swelling, heat and tenderness of the udder. If the trouble grows worse the tenderness causes the animal to straddle with its hind legs. If the cow lies down she will lie on the well side. The above troubles may disappear in a few days and the udder resume its normal condition. If not, it changes into a chronic form in which the symptoms partially subside. The result is the udder, or the affected part of it, becomes dry or forms abscesses. In the case of drying up, the parts may become hard and remain so permanently or only until the next time of calving. If abscesses are formed they should be opened by a competent person and properly treated. Should infection take place at any time (the entrance of disease germs into the affected part) the result may be serious and may even cause the death of the cow.

Treatment.—The treatment will depend upon the severity of the case and the stage in which the disease is discovered. If the animal is cold, two ounces of ground ginger given in a pint of warm water, or any hot drink, may cut short the attack. This must be given from a horn or bottle. Blanket the animal and rub her limbs with wisps of straw, making her as comfortable as possible. Moist heat should be applied to the udder by using heated wheat bran in bags, held in place by strips extending over the loins, between the hind limbs and around the abdomen.

Should the udder be very painful and the animal feverish, fomentations of hot water, as hot as the attendant's hand can comfortably bear, should be applied for several hours, for about fifteen minutes at a time. This may be done by passing a sheet around the body with four holes cut for the teats and soft rags or bran packed firmly between it and the udder. After the fever has subsided, drench the animal with one or two pounds (depending on the age, size, condition and strength of the cow) of Epsom salts with two ounces of powdered ginger in a sufficient amount of water. When the purging has ceased, one ounce of saltpeter may be given daily. The udder will need constant attention for some time in the way of gentle rubbing with camphorated oil, several times daily; at the same time gently removing all the milk by squeezing the teat instead of pulling or stripping it. If this causes the animal too much pain, a teat tube may be used but must be boiled thoroughly for five minutes each time before using. When the udder is not tender, thorough hand rubbing several times daily, with or without the camphorated oil, will aid in bringing about a normal condition.

Where to Look for Sprayers.

People should look to their spraying apparatus in time, that the work may be properly and quickly done and with the least expense when the time comes. A good sprayer is all important. The Deming Co., Salem, Ohio, are manufacturers of this class of goods. They are an old reliable concern, and they make everything in spraying apparatus from small hand sprayers to their large gasoline engine outfit for orchard, park and field use. Their bucket, knapsack and barrel sprayers are known throughout the country with gardeners and fruit growers.



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The Deming Co. will send their catalogue to any address on request. It illustrates and describes their sprayers fully. Note the advertisement elsewhere in this issue.

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Giltner, Neb., Feb 15, 1905.

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Man Killed by a Blow From a Horse.—Santa Rosa Press-Democrat: Robert Christopher Ord, a well known Dry Creek valley rancher, met with a tragic death. While handling a stallion the animal suddenly reared and struck him in the abdomen with one of his front legs. He died shortly afterwards.

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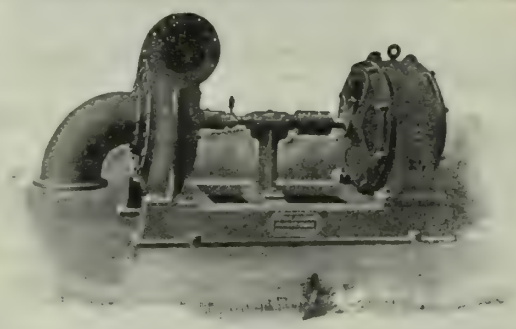


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ENTOMOLOGICAL.

Hints on Cut Worms.

Antonio Perelli Minetti of Healdsburg writes interestingly about cut worms, although he mistakenly calls them "army worms," for they are quite another caterpillar. He says:

Fortunately, the larva is of a lazy nature and does not prefer the grape vine to any other plant for its food. A number of intelligent grape growers have taken advantage of its laziness They have planted, with encouraging results, leguminous plants of small growth along the rows of vines, observing that the larva spares the vines by feeding on these plants.

Plowing them under the ground towards the end of May, a rich fertilizer is obtained, owing to their particular adaptability of appropriating the nitrogen from the air. But the most effective means, undoubtedly, is the direct hunting of these pests, searching the vineyards at night with lanterns, or in the early morning, looking for the larva about the foot of the vines, killing or feeding them to the chickens.

An ingenious Italian grape grower employed boys for the earch of these army worms. He paid 1 cent for every five worms. By night each boy had gathered several hundred.

In France, in the vicinity of Narbonne, good results were obtained by the practice of making two or three holes from 10 to 12 inches deep near the foot of the vines with a pole about 1 or 1½ inche in diameter. At the dawn of day, to hide from the light, the larva crawls into these holes. The same poles which were used in making the holes will serve very well to crush the worms.

There is still another means, but I think impracticable on account of its cost. It is this: By binding each vine with a band of oilcloth about 2 or 3 inches wide, taking care to turn in the raveled edges where it is joined, or by the application of a thick varnish around the trunk of the vine.

The larva will slip, thanks to the smooth surface of these materials, and it is the only way to keep it from reaching the sprouts of the vines.

The Jackrabbit.

Mr. Charles E. Jenny, in his interesting nature sketches in the Fresno Republican, gets on the trail of the jackrabbit. He says that in any series of notes on the fauna of Fresno county, the jackrabbit must play an important part, as the most characteristic and common quadruped of the valley. If I do not go into a more extended description of him, it is because he is too well known to everybody to require it. Correctly speaking, he is a hare (Lepidus Californicus). The early travelers across the Western plains designated him as the jackass rabbit from an unmistakable resemblance both in ears and kicking capacity, which name has become shortened to jackrabbit by popular consent. The long ears, the gray or yellow fur, the kangaroo-like hind legs and the deeply cleft upper lip are all familiar features; if not, one has only to take a drive a few miles beyond the vineyard lands to see them. In the early days of fruit culture in this valley the rabbit was one of the chief obstacles to contend with, being so numerous that the shotgun was utterly inadequate to protect the young trees and vines from being girdled. To cope with this pest the rabbit drives were inaugurated, which became so successful and such a novel feature that the story of them was told the country over. These have taken place annually until within the past few years no well organized ones have occurred. It is entirely unnecessary to describe one of these drives, so familiar are they and so widely have descriptions and photographs been published. Perhaps one of the most celebrated is that known as the G. A. R. drive of some seven or eight years ago, when careful estimates of the results placed 30,000 as the number of rabbits killed. In spite of these drives the rabbits maintained their numbers, so prolific are they in breeding, vanishing only before the advance of cultivation and consequent removal of convenient hiding places for their forms. Beyond this pale the rabbits are as thick as ever, but they will doubtless at length be driven into the foothill region, where human settlement will never be very thick. It is still no uncommon sight to see the rabbits in vineyards near Fresno, and rarely even to-day one is driven by dogs through the streets of the city. Such an event happened within a year, occasioning considerable excitement among the human and canine population who witnessed it.

The extreme vicissitudes of rabbit life have made it one of the most alert of animals in scenting danger. The mobile nose-pad works and quivers as he sits on his half-raised hind feet, the long ears rigidly erect. These latter express the many emotions of the animal. They are held half-way back when he hops around or lopes carelessly across the plains. When running fast he carries them pretty straight, but when an extra spurt is called for, or when shot at, he throws them flat along the back. The jackrabbit is noted for his high rate of speed, which has brought many troubles on it, for it has become a sport to course it with greyhounds in its native habitat and the captive rabbits artificially within enclosures. The food of the rabbit, which has caused it the chief enmity of man, is the bark and tender shoots of young plants and vines, as well as leaves and roots.

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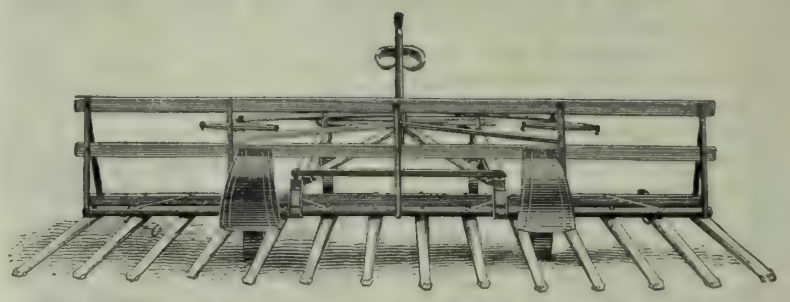


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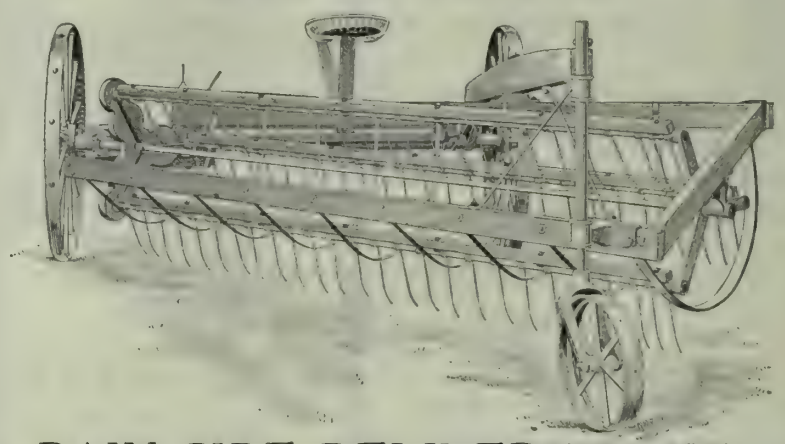
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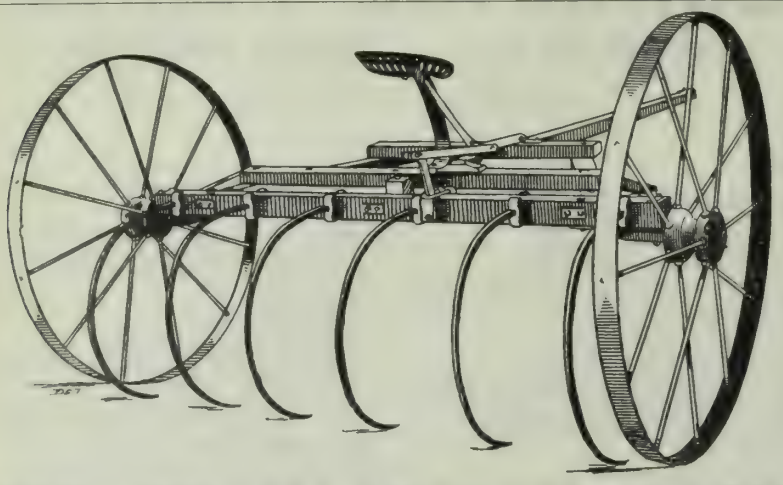
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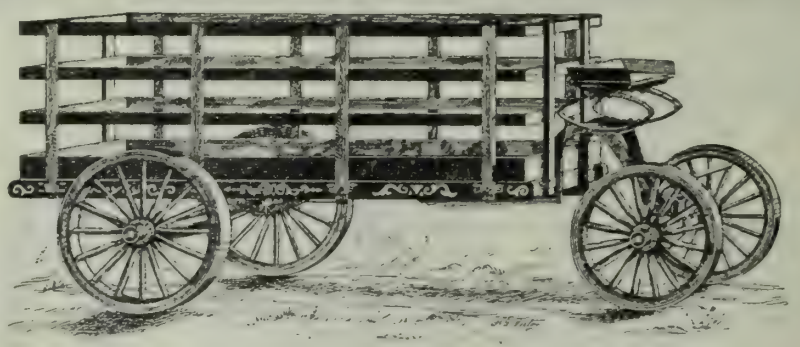
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Vol. LXIX. No. 19. SAN FRANCISCO, SATURDAY, MAY 13, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Sierra Scenes.

It is some time since we took a look at the mountain regions of California, and this seems an opportune moment. The scenes indicate the style of country threaded by the State highways projected from California across the mountains into eastern California and Nevada. The first picture is located on a line for the Tioga extension, which was finally rejected for that purpose, but the view is none the less charming. The scene is west of the Mono Lake basin and near the eastern boundary of the Yosemite National Park. The foreground shows an expanse of sagebrush which is of such uniform height and aspect that it impresses one as a cleared field covered with crop of some kind. It looks particularly like a seed crop of some vegetable, and this is generally the case when the new-comer gets his first view of a stretch of sagebrush, though more experience leads him to think quite differently of it. The soil under such a stretch of sagebrush is usually sandy and full of fertility when moisture is supplied—in fact, many expanses lying well for irrigation have already transformed into fine alfalfa fields, and such area is being rapidly extended both in northeastern California and Nevada.



Meadow and Tamarack Trees Near the Headwaters of the Tuolumne River.

In the second picture the scene is in the same region as the first except that it is east of the crests of the Sierra Nevada and near the headwaters of the Tuolumne river, which flows westward into the great San Joaquin valley after having wearied itself with tossing about through the gorges and rock-set rapids of the mountains and foothills. Near the headwaters of several of our great mountain streams there are lovely meadows, one of which is shown in part in this picture. On such spots during the summer there is a splendid growth of grass which is eagerly sought for by the grazers who have now to operate for the most part under the regulations of the Forestry Service of the United States Department of Agriculture, which is reducing the whole use of forest lands to a rational basis as rapidly as possible. In charge of a vast area of this forest is Mr. C. H. Shinn, whom many of our readers know. Mr. Shinn is not only a forest lover, but an executive officer who is excellently forwarding the enlightened forest policy of Mr. Gifford Pinchot, who heads the Government Forestry Service.



A Sagebrush Slope in the Sierra Region of Mono County, California.

One very interesting feature of the second picture is the glimpse which is given of the tamarack or "lodge-pole pine." Lodge-pole pine is valuable for one reason—because it grows on high mountain slopes, and also on old "burns," where other trees find difficulty in obtaining a foothold. It readily adapts itself to most diverse soil conditions, but thrives best where there is considerable moisture. Its roots accommodate themselves to the shallow soil common in the localities where it grows. At a very early age this tree produces cones in large quantities, and after it is ten years old the seeds are generally fertile. The cones sometimes open and distribute the seeds as soon as they are ripe, though more commonly they remain on the trees for years with their seed carefully preserved beneath the scales. In many cases squirrels cut off the closed cones and hide them away in the ground. If a fire occurs before the seeds are eaten, it will cause the cones to open and set them free. As a rule, however, the cones of many seasons remain on the trees until a fire comes along and, by heating them, liberates the seeds, when a dense growth of seedlings follows.

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SAN FRANCISCO, MAY 13, 1905.

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The Week.

From a producer's point of view the rain-makers are overdoing it—giving too much for the money paid them by the Los Angeles merchants, or, in other words, they are slopping over. Last week we counted the gain to grass and grain greater than all the injuries to fruits, hay and other products, but now with the rain, hail and low temperature, directly injuring many things and inducing rusts and blights to an unusual extent, it is the general conclusion that this un-Californian style of a month of May is not altogether welcome. Of course such visitations always seem worse at the moment and it may be that many recuperative influences will immediately follow, but there is at present some drawback upon everything but pasturage and landscape verdure—they are great and will hold later than usual for the benefit of the Portland Fair multitude which will soon be streaming through California. It ought, however, to be a year of good prices for most produce, which is a comfort so far as it goes.

Spot wheat is quiet with slack demand and little offering. Futures sagged, but are steadier now. Chicago has fluctuated, but is not much changed. Charters are stiffening and there is more difference being made between wheat and barley. The asking value for barley goes from 23s 9d to 25s with wheat figures at 23s. Spot barley is steady and December a little weaker. Beans are firm and tending upward. Bran and middlings are dragging as before. Fine hay is firm and low grades weak, expecting large amounts of damaged hay and much poor being carried over. Veal is firm and hogs steady and other meats quiet. Butter is holding its own and storage continuing. A government call for 150,000 lbs. in tins is out. Cheese is slow and weak with large stocks, and at the same time a carload of eastern has sold at the highest price for many years, 17c laid down here. Eggs are fairly steady and storing going on. Old choice poultry and large young are steady; small stock is quiet. Receipts are not heavy. Potatoes are in moderate supply; 175 carloads are coming from Minnesota and Colorado and selling at about the same prices as our river spuds. New potatoes have been in less supply as the weather has not favored digging. The same is true of new red onions, which have recovered value somewhat while there have been new receipts of 1160 crates of Australian. Receipts of damaged cherries have been free. Strawberries are also worse for the rain; gooseberries are firm for choice. Contra Costa growers ask $35 per ton for this season's apricots, quality guaranteed first-class. Good oranges are firmer and lemons unchanged. Dried Fruit is firm, especially prunes, which are helped by large shipments to Germany and British Columbia and by the outlook for a light crop. Honey is moving out and the crop prospect is not so good. Hops as before are asking 30c without buyers. Wool is as stiff as ever. Many country sales are reported on other pages.

There is one thing which has turned our way and that is, in the face of a good many oranges in California, there is a marked shortage in Europe, which, to a limited extent, we may supply directly and which may indirectly advantage us by pushing oranges from the West Indies to Europe instead of landing them at our Atlantic ports. The United States Consul at Lyon, France, writes to the Department of Labor and Commerce at Washington that the fruit dealers of Lyon have received reports from Italy, Spain, and the south of France to the effect that the orange crop is almost a complete failure. The most optimistic opinion is that there will be about one-fourth of a crop, and even that will be poor, the oranges being without odor and almost juiceless. A dealer in Lyon states that he has sent all over Spain and Italy, and does not know where to look for oranges, unless he can get them from the United States. The supply generally comes from Marseille to Lyon and other parts of France. A dealer at Lyon has received a letter from his wholesale house in Marseille, in which the writer says that he usually buys 16,534,500 pounds of oranges a year, but that this year he can not hope for over 1,102,300 pounds. This state of things has been known for some time and has probably influenced the trade somewhat already, and may have a greater effect upon the mid-summer movement of late oranges from this State. The European orange growers are also complaining of new insect pests. They will have to get in and fight for the crop, as the Californians do. It seems hard for the south Europeans to realize the new conditions brought into the citrus fruit trade by the development in California.

But while we are doing respectably in fruit development we are not doing as well as we ought in the United States in the production of wool. The statement just comes that Australia shipped to us, during the year 1904–05 to March last, wool to the value of $6,123,256. Think of buying all that wool with such adaptations for wool production as exist in this country. The Australian crop should go to Europe, not to the United States. But we seem to have become sour-balled on wool and ate up our sheep, or turned them into other breeds which would eat better, while the Australians kept right along improving their fine wool, buying the best wool sheep in all parts of the world to improve their grades, and here we are with wool at famine prices in this country because we got leary on sheep. Of course there will be a rush to recover now and a more rational view of the sheep will prevail, but meantime we shall be paying Australians many millions for that which we can grow for ourselves. Of course it will not be so easy to produce a vast clip in this country as it was a quarter of a century ago, and the reward will consequently be all the greater to those who can do it under present conditions.

Mr. S. H. Gerrish, in a letter to the Sacramento Union, takes exception good-naturedly to our comments upon the delight which the Women's Council expressed at receiving a gift of trees from Washington, and to this we, of course, do not object. But Mr. Gerrish goes too far, and in his gallantry knocks California unjustifiedly. He writes:

> The fact that these trees could have been procured here does not in the least cheapen the gift. The ladies were as well aware that any tree could have been bought here in California, but to assert California is the best place to grow trees savors of the old brag of bygone days. We grow them well here; so they do elsewhere, and the soil is the one thing that has to be considered in the matter, the atmosphere the world over has the same gases in its makeup and the moisture and dryness is the only difference in this world's climates to be regarded in tree growth.

Mr. Gerrish overlooks the most important consideration of all and the one which clearly distinguishes California as superior in the growth of young trees from seed. The soil is not the one thing to be considered; horticultural art can remedy any inferiority which there may be in Eastern soil. The real things are these—the length of the growing season which gives a California seedling about twice the chance to make stature that an Eastern seedling has; also the character of the California air and sunshine which are distinctly different. Mr. Gerrish does not know probably that Eastern nurserymen are growing things in the State for the Eastern trade, because growing conditions are so much better; also that some of our largest nursery establishments are working in special lines, growing plants for wholesaling to Eastern distributors, because they cannot grow such large stalwart plants in two Eastern summers as can be produced here in one. Our only ambition in this connection is to teach Californians to know California better and to restrain our well-disposed city ladies from disclosing their own lack of information and from giving California away in the eyes of the world by seeking gifts of this kind at the East. The very men who grew the trees which were shipped to this State must have laughed in their sleeves at the enterprise. They know they cannot compete with California grown tree seedlings.

QUERIES AND REPLIES.

Going for Unique Products.

TO THE EDITOR:—I have the idea of going into forestry, putting in principally Catalpa speciosa; also some slower growing, harder and more costly woods. While these are growing I would raise chickens, geese, ducks, wood ducks, wood cocks, partridges, pigeons, swans, peafowls, magpies, etc., some such collection of birds which are in demand, but not much produced; also some animals, possibly deer and others which are rather rare, a few of each and much variety, none that a 4-foot wire net fence would not turn and none that would injure the forest plantation. My idea is that in five or six years I can begin to get returns and from then be on a paying basis, and to maintain Nature's balance by peopling the forest in some such way as indicated. Bees would be one of the details, and for them and the others I would plant largely. If I can grow fish and water fowl I shall do that. I shall hire all the work done and sell the product on the ground. — PROJECTOR, Southern California.

Your propositions are very interesting, but we fear that we can be of no service to you in the direction indicated. First, because of lack of information concerning the growing of animals and birds of the wild game class; also, because we are sure that any such undertaking would make such requirement of time and investment that no one who is short of means and desires speedy returns for his effort should pay any attention whatever to such lines of production. In the first place it is very unsafe to start an enterprise for a product of which a demand is not visible, because the difficulties of the enterprise are usually supplemented by the necessity of developing demand for the product, and both together make the undertaking very uncertain of award. The way to secure quick returns with a minimum of investment lies in turning out products which are in regular demand, but of which the supply at certain times of the year particularly becomes short. For example, we know a case in which a man can make a crop of cabbage on a small town lot return more profit than many a considerable acreage of lemons. The investment was nothing to speak of. Success lay in the fact that the man put much of his own time into growing the crop and brought it into marketable condition when local demand for fresh vegetables was sharp. The same thing applies to many other kinds of vegetables, to small fruits, to poultry products, and this is the kind of special production which promises best with least requirement of capital. We do not know of any satisfactory literature on the subject of growing rare animals and birds of the class which you indicate in your letter.

Curl Leaf on Nectarines.

TO THE EDITOR:—I send a small box of leaves taken from a nectarine tree three years old. The growth has appeared within the last week, and I would thank you for an opinion upon it.—GROWER, Yreka.

Your nectarine leaves are affected with the fungous disease known as curl leaf. This disease is most abundant in wet, cool springs, and is more abundant this year than ever. Judging by the specimens, the trouble will not be severe enough to do a great amount of injury. There is no treatment which can be at present applied. In places where the curl leaf appears regularly, and is severe enough to destroy a

good part of the leaves, a winter spraying with Bordeaux mixture, according to the formula which is enclosed, should be undertaken just before the growth starts.

Lime for Heavy Soils.

TO THE EDITOR:—Your suggestion about digging "ordinary builder's lime" into my adobe puzzles me, for I do not understand whether it was quick lime or not. I have read that lime should be applied after it is slaked by water, as it is better than air slaked—so I suppose you mean slaked lime too. But slaked lime is merely powdered chalk, is it not? I should think that for excess of acid one would apply the chlorine in the quicklime. I have also read advice to slake it by covering with moist soil. The writer too mentions "stone lime." What other kind is there?—AMATEUR, San Diego.

Ordinary builder's lime is stone lime and this lime slaked quickly with moisture is not simply "powdered chalk," because powdered chalk is the carbonate of lime, and inert, while freshly slaked lime is a hydrate of lime with caustic properties and productive of marked change in the physical condition of heavy soils to which it is applied. It is true that slaked lime becomes carbonate after long exposure to moist air; consequently there might be a sample of slaked lime which actually was of little more value than powdered chalk. There is no chlorine in quicklime. The addition of the chlorine makes a chloride of lime, which is an entirely different material and has very different uses. Slaking the lime by covering with moist soil is a good process, and is recommended probably because of the extra labor required to slake the lime with water before making application to the soil.

Killing Bermuda Grass.

TO THE EDITOR:—I have a Bermuda grass lawn which I desire to change to blue grass. Can you suggest an effective method of killing the Bermuda without disturbing the soil to any great extent? I remember reading about fumigating fruit trees under canvas for the destruction of scale, caution being given against subjecting the trees to a preparation of over strength, as the prescribed treatment for too long action injured or possibly destroyed them. I draw the conclusion that it might be possible to cover the lawn with canvas and subject it to a similar treatment to the extent of destroying all life. Or would covering and subjecting to a steam jet do as well?—GARDENER, Bakersfield.

There is no experimental information along the lines of killing Bermuda grass which you suggest, and it is not safe to make any conclusion as to the success of such methods without trial. It must be said, however, that the chances are against the methods proposed, because the Bermuda grass roots quite deeply and will come again from the lower roots, although the surface growth may be utterly killed. It is the experience at the East that, although Bermuda grass is quite susceptible to frost, unless you get an actual freezing of the ground to a depth of a couple of feet the grass will reappear. The same thing would be true if the top growth were killed with hydrocyanic acid gas, or with steam, as you suggest. The probability is that, although you could kill the surface growth, the plant would not be eradicated. Still, nothing but actual trial will demonstrate the fact, and we should be very glad to hear of the results of any experiment which you might make.

California Bulb Growing.

TO THE EDITOR:—The Department of Agriculture is much interested in the study of American bulb growing and desires to secure all possible information on the subject. We are already in touch with all the active bulb growers, but would be very thankful for any information that may be furnished us in regard to experiments on the growing of bulbs of any kind in America, whether such experiments have proven successful or not, and we should like to enter into correspondence with all persons who have conducted such experiments, and would be pleased if you would give this notice a place in your columns.—A. J. PIETERS, United States Department of Agriculture, Washington, D. C.

We hope all our readers who are interested in bulb growing will communicate with Dr. Pieters at the address given. It is an open secret that the Washington department desires to promote commercial bulb growing in California and has certain experiments in that line under way. Readers of the PACIFIC RURAL PRESS can help greatly by sending Dr. Pieters accounts of what they have done and the results of their doing.

Bacteria for Beans.

TO THE EDITOR:—Please give information about bacteria for beans; how to get them, how to use them—in fact, all about them, as I would like to try them.—READER, Ryde, Sacramento county.

We have covered this subject quite fully in the various publications made in these columns during the last few years—the nature of the bacteria, their life on the roots of leguminous plants, their service in gathering atmospheric nitrogen, etc. If any reader desires to refresh his memory he can send to the United States Department of Agriculture at Washington for "Soil Inoculation for Legumes," Bulletin No. 71 of the Bureau of Plant Industry.

We explained recently that the bacteria are no longer distributed by the Government and that they can be bought from the leading dealers in seeds with instructions as to their use. It requires more experimentation to show exactly what can be done with them. If the bacteria are naturally present in the soil, it is doubtful if the addition will accomplish anything. It is wise to try them everywhere, for leguminous plants, but not for other crops, and note the results before larger investment.

Leaf Lice on Fruit Trees.

TO THE EDITOR:—Enclosed you will find some insects which infest all kinds of fruit trees in this vicinity. Will you kindly state in the PACIFIC RURAL PRESS what they are and the best method to destroy them?—J. C. A., Lone Pine.

The insects are leaf lice, or aphides. They can be easily killed by spraying with soap suds, in which a little kerosene has been strongly beaten. For systematic use of course a regular kerosene emulsion should be prepared, but for a few trees almost any soapy solution, with very little oil added, will be effective. They are easy to kill if you can hit them with the wash; to do that you need a spray pump or at least a garden syringe.

Killed the Trees Himself.

TO THE EDITOR:—Your account of the cause of dieback of lemon trees in the PACIFIC RURAL PRESS of April 29 was shown to the party that had the blighted trees. After talking with him a little he informed me that he had sprayed his citrus trees with coal oil a month or so ago because some one told him it was good for scale insects. No wonder the leaves turned yellow and young wood wilted and finally died.—GROWER, San Lorenzo.

It does seem too bad to nearly kill trees with kerosene and then call upon us to explain the injury by reference to erudite considerations of plant physiology. We have, however, the comfort of the reflection that our reasons would account for the trouble if the oil can had been kept out of the situation. The owner of the tree was probably told to use kerosene emulsion, which would have been all right, but he did not know the difference between kerosene and the emulsion thereof. Perhaps he does now.

Planting Walnuts.

TO THE EDITOR:—In your number of April 15th I read a letter from J. Luther Bowers' pen about the way walnut seed should be planted, "with the sharp points exactly straight down." It seems to me that he knows nothing about planting nuts. What do you think about it?—EXPERIENCED PLANTER.

We did not notice the statement or we should have suggested another view. It seems to us that to plant nuts with the point down is the least desirable way. It requires the shoot to make a complete turn, and in ground inclined to be heavy and wet at the time the shoot will fail to make the turn. We should sprout the nuts in a sandwich bed of nuts and sand and then plant in place or in nursery row with the shoot up, or at least on one side. We believe the best way to plant a nut is to place it on its side.

Hungarian Brome Grass.

TO THE EDITOR:—What is the success of Hungarian brome grass (Bromus inermis)? Will it grow on dry land without irrigation?—ENQUIRER, East Los Angeles.

Hungarian brome grass is a very good winter grower in California and will retain its verdure during a good part of the dry season, providing the situation is naturally moist or furnished with irrigation. It will not maintain its life during the dry season on ordinary uplands, where we would most of all like to have it grow. For these reasons this grass has not justified our anticipations for it.

Wheat and Cheat.

TO THE EDITOR:—Please inform me if any grain turns into cheat, and if cheat will grow from its own seed.—A READER, San Juan.

No grain will turn to cheat and cheat will grow from its own seed. Discussion of this subject is barred.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 8, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cold and cloudy weather prevailed, with heavy rains at the beginning and close of the week, and conditions were unfavorable for all crops. Standing grain and cut hay were considerably damaged by the rain, and pasturage appears to be the only thing benefited. The actual damage to the grain crop can not yet be estimated, but some reports state that the prospect for large crops is very poor, and in some places the yield will be light. Hops are in fair condition, but need warm weather and sunshine. Stock are doing well. The rain seriously damaged cherries and strawberries and probably injured other deciduous fruits. The outlook for a large fruit crop is not as good as earlier in the season. Orange trees are making excellent growth and are heavily laden with buds.

Coast and Bay Sections.

Conditions during the week were generally unfavorable for all crops. High winds prevailed in some sections and heavy rains fell at the beginning and close of the week, causing considerable damage to grain, hay and fruit. Continued cool weather retarded development of fruit and growth of grain. At the present time the outlook for heavy crops is rather discouraging, but much depends on weather conditions following the heavy rains of Saturday night and Sunday. In portions of the southern districts the rain seems to have been beneficial, especially to grain and pasturage. Hops, sugar beets and beans are in fair condition, but these crops, as well as grain and fruit, need sunshine and warmer weather. Reports are very conflicting as to the probable yield of deciduous fruits, but fair crops of most varieties may be expected.

San Joaquin Valley.

Partly cloudy weather prevailed during the past week, with moderate rain on Monday and heavy rain accompanied by high wind Sunday and Sunday night. The rain in the first part of the week did some damage to cut hay, but otherwise was beneficial. The storm of Sunday is believed to have caused considerable damage to grain, fruit and hay, but it is too early to obtain estimates of the damage. Rust appears to be confined to early sown grain and the reports of damage are very conflicting. Pears will be about half a crop on account of blight. Garden truck was greatly benefited by the late rains. Irrigating water and green feed are plentiful and stock are in excellent condition.

Southern California.

Continued cool weather and high winds, with fairly heavy rainfall at the beginning and close of the week, made conditions very unfavorable for most crops, though late sown grain and pasturage was benefited. Vineyards and orchards were also improved by the rain, but some damage was done by winds. Grain prospects are fairly good in most places, though there are reports of damage by rain and wind, and that the unusually heavy rains have caused a rank growth of weeds, choking the development of grain quite seriously. Haying is in progress and some damage was done to cut hay by the rain. The "army worm" pest is disappearing. Deciduous fruit prospects are fair, and citrus fruits are in excellent condition.

EUREKA SUMMARY.—Present rain greatly benefited gardens in the interior, as high north winds had taken all the moisture out of the top soil. Fruit growers expect very heavy crops. Strawberries are in market.

LOS ANGELES SUMMARY.—Rain softened the surface of the soil, which had become hard and dry, and lodged some grain. Corn and beans are doing well, but suffering from worms in some places. Cantaloupes from Imperial valley will soon be ready to ship.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 10, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	1 10	32 41	61 04	43 71	60	42
Red Bluff	1 06	33 38	31 48	24 89	76	44
Sacramento	1 32	21 79	16 87	19 25	76	46
San Francisco	87	23 45	20 59	22 22	60	48
Fresno	1 02	12 08	8 04	8 39	76	42
Independence	03	3 83	2 59	3 59	68	34
San Luis Obispo	1.33	23.48	16 95	19 76	66	38
Los Angeles	.50	19 46	8 72	16 04	68	42
San Diego	.05	14 23	4 30	8 05	64	50
Yuma	.00	8 69	94	2 86	88	50

THE FIELD.

Destruction of Coyotes.

From Advance Sheets of a Bulletin of the Biological Survey of the U. S. Dept of Agr., by David E. Lantz, entitled "Coyotes in Their Economic Relations."

The coyote problem is a serious one. Various methods of dealing with it have been in vogue since coyotes first began to like mutton. None of the methods have been entirely satisfactory, and some are signal failures. All of them combined have resulted in a partial check on the increase of coyotes in most parts of their range. Poison has probably killed the greatest number of adult animals, and in some parts of Mexico has almost destroyed some of the species, but no such success has attended its use in the United States.

Poisoning.—Strychnine has always been a favorite weapon of hunters for wolf pelts and bounties. A half century ago hunters on the prairies killed the buffalo for its pelt, and added to their income by killing the wolves that followed the daily slaughter. A little strychnine inserted in the skinned carcass of a buffalo enabled them to secure many pelts of the gray wolf and occasionally one of the coyote; but not often the latter: he was regarded as much too shrewd to be taken by ordinary methods of poisoning. Besides, the pelt was small and not sufficiently valuable in comparison to warrant special efforts to secure it. Even in 1819 Thomas Say, who first gave a scientific name to a coyote, found this animal more abundant than the gray wolf. Yet the number killed for their pelts has never been great.

As an illustration of the coyote's shrewdness in avoiding poisoned baits, a farmer in Oklahoma gave the writer the following experience: After butchering some hogs he poisoned a hogskin and left it with other offal for a coyote that nightly prowled about his premises. In the morning everything but the poisoned skin had been cleared away. He left it two more nights, but it remained untouched. Thinking that the animal would not eat the poisoned bait, he buried it. That night the coyote dug up the pigskin and ate it, falling a victim to its deadly contents. Since then the farmer says he has never failed to poison coyotes when he buries the bait.

Another method of poisoning coyotes is to insert the strychnine in small chunks of meat that can be easily swallowed. Success by this method depends largely upon the condition of the animal as regards hunger, and may be helped by making what is known as a "drag" in the neighborhood of the bait. A small animal — a bleeding dead rabbit is good — is dragged over the prairie and the morsels of bait left at intervals along the "drag." Two days previous to a general coyote hunt in Oklahoma a steer badly affected by "lumpy jaw" was killed, opened, and left in the middle of the area to be hunted. During the first night coyotes howled all night in the vicinity of the carcass, but failed to touch it. The second day a hind quarter was separated from the carcass and dragged in a circuit of a mile or two, the drag coming back to the carcass. During the following night the coyotes picked the bones of the carcass bare. Thus gorged with beef, they were in a condition favorable for their slaughter in the drive of the following day.

In the use of strychnine for wolves, the dry crystals of strychnia sulphate are generally preferred. They should be inserted in the bait with a knife blade, and the meat should be handled as little as possible. It should be remembered that if precautions are not taken there is a greater probability of killing dogs than wolves. The entire neighborhood should know of the intended attempt, and all valuable dogs should be confined until the operation is finished and uneaten baits disposed of.

Trapping.—Coyotes are not easily trapped. Some skill and a good knowledge of their habits are requisites for success. They travel in rather well-defined paths and usually hunt against the wind. Having a keen sense of smell, they easily detect the tracks of man, and if they have had previous experience of traps or guns they are suspicious of danger. In the wildest parts of the country remote from settlement they are more readily trapped. The chances for successful trapping decrease with their familiarity with man, so that there is little probability that the process will ever have much effect on their numbers.

The writer knows a Kansas trapper who is quite successful in capturing coyotes in a rather thickly settled part of that State. He uses steel traps and sets them along hedges in places where the animals are accustomed to pass through openings. No bait is used and the trap is partly concealed by dead leaves or grasses. He claims that both the direction of the wind and of the animal as it approaches the opening have much to do with the chance for success.

Field naturalists of the Biological Survey usually have experienced little difficulty in securing coyotes in traps. A No. 3 steel trap is generally used. A suitable place is selected along a narrow path or trail and the trap sunk in the ground level with the surface and concealed with fine grass, leaves, or other materials that will harmonize with the surroundings. At the same time care is taken that the material used shall leave the jaws of the trap free to spring clear of the covering.

The trap should be fastened to a bush or stake, or if these are not available, to a clog. For the last a pole lying on the ground is best, since it may be utilized without moving it or disturbing the surroundings. If the trap is anchored to a bush or small tree the chain must be securely fastened with snap or wire. A stout stake over which the ring will not slip, driven out of sight into the ground, is better. Every part of the trap and chain is covered, and the ground left in as natural and undisturbed condition as possible.

Any kind of fresh meat will do for bait—rabbits and other small rodents are often used, but larger baits seem to be more attractive. It is also of advantage after setting the trap to make a "drag" of the bait for a quarter to a half mile, at the end of a rope from the saddle horn, and finally to fasten it to a bush or stake close to the trap, or cut it into bits and scatter all around the trap so that not all can be reached by the coyote without walking over the trap. The skill of the trapper and the situation of the trap will determine the best arrangement. The suspicion of the coyote is lessened apparently after following the bloody trail of a well-planned drag.

Before setting the traps many trappers rub their feet and hands on a skin or some strong-smelling meat or carcass to conceal the human odor. Oil of anise or rhodium is sometimes used for the same purpose. Any strong odor is likely to attract the attention of the coyote and allay suspicion. Care must be taken not to spit on the ground or kneel or throw down any clothing in the vicinity of the trap. A good plan is to set a line of traps and leave them for a day or two, and then go the rounds with a horse and drag, and bait the traps without dismounting.

Hunting.—Many ranchmen find dogs an efficient help in guarding against coyote depredations. For this purpose the small varieties are useless, since the coyotes do not fear them. Beagles and larger foxhounds are too slow. Staghounds, Russian wolfhounds, greyhounds and their crosses are to be preferred; and at least three are needed to successfully chase and safely kill a coyote. These dogs soon learn to hunt wolves, and are seldom known to harm sheep. Ranches on which they are kept are comparatively free from depredations of wild animals, while others within a few miles are by no means exempt. Of course, the keeping of these dogs on small farms would hardly be practicable.

In the open country where there are few fences, hunting the coyote with horse and dogs is an exciting sport. Fox chasing, although less meritorious in purpose, may have some advantages as sport, because the quarry is not always in sight and the skill of the hounds is pitted against the cunning of the fox. In the chase of the wolf, as in coursing hares, the race is straight away and without cover; and when the quarry is overtaken the fight is won only because of the overpowering numbers of the pursuers. The ordinary greyhound can easily overtake a coyote, but is usually unable to kill it alone.

Coyote drives, in which the entire community engage, have become a popular feature of rural sport in some parts of the country. Such drives have been held in Kansas, Colorado, Idaho, Oklahoma and Texas; but the methods employed depend largely on the local topography. The writer was present at the second annual wolf hunt which took place November 24, 1904, in the large Pasture Reserve near Chattanooga, Okla.

On Thanksgiving morning the weather was perfect, and a large number of people from the surrounding country collected in the village of Chattanooga. A little before noon the men who were to drive the wolves went out of town and headed for their positions in the Pasture. As there were less than 150 men, the area covered by the drive was not so large as had been planned. The drivers were separated into three divisions. The south division, which was under the immediate charge of the commander of the hunt, Mr. J. W. Williams, proceeded about 7 miles south of Chattanooga. The eastern and western divisions were under the charge of other captains and had their stations about 4 miles to the southeast and southwest of the town. The area covered by the drive was somewhat over 6 miles square.

On the north side were the spectators, occupying a position about 1½ mile from the town and extending over nearly 2 miles of front, from which the land sloped gently to the south. The spectators came from town in every sort of farm vehicle and numbered fully 500.

In front of the line of vehicles some fifty men on horseback held in reserve nearly 100 dogs, mostly greyhounds. Guns of all kinds were ruled out of the final "round-up," and only lariats, dogs and clubs were permitted as weapons.

The line of spectators was formed at 1 o'clock, but it was fully an hour before the driving divisions were heard or seen. In the south a beautiful mirage occupied the distant valley—a white sheet of water bordered by trees. It was on the surface of this mimic lake that we first saw the riders galloping by twos. Soon after we faintly heard their distant shouts; and when the shouts began to come clearer, the coyotes also came up the valley by ones and twos, and at length by threes and fours before the swiftly moving horsemen.

When the first wolf was still a half mile distant, the dogs were released and riders and dogs dashed to the front to head off the animals. Hemmed in in front and rear, they broke to the right and to the left, and many made good their escape through the thinner lines of the east and west divisions.

The sport was fast and furious for a short time, but when a little later the dead and captured wolves were brought together in the town, they were found to number only eleven in all. Two of them were roped by cowboys during the drive and killed with pistols. Two were dragged to death at the end of lariats. Seven were caught by the dogs in the round-up, and two of these were brought in alive. Many escaped, but it is impossible to estimate the number.

Such hunts have considerable influence in decreasing the number of coyotes and also afford an agreeable break in the monotony of frontier life. Their purpose, however, is never admitted to be that of sport, but to kill coyotes.

AGRICULTURAL ENGINEER.

How to Use Portland Cement.

Care at all times should be taken in mixing concrete to use only clean, sharp sand (free from loam or soil) with pebbly grit, old broken bricks, stones or slag. Portland cement, either in casks or bags, must always be kept perfectly dry till used, damp being very injurious, causing it to become lumpy and useless. Brickwork and bricks or stones should always be well wetted or soaked in water before using.

When cement plaster is used for facing brickwork the joints should be deeply cut out and well sluiced and wetted with water, after which it may be plastered, taking care to always keep the edges wet and face damp till finished, and to prevent its drying too quickly. Good results will be found from damping the surface again with a whitewash brush and water, as drying slowly makes better work with more certain results.

Strong Portland cement is heavy, weighing 90 pounds to the cubic foot. Weak cement is lighter, but weight is an unsafe test for cement.

Strong Portland cement is of a blue-gray color and sets slowly. Weak cement sets quickly, has too much clay in it, and is of a brownish color.

The cleaner and sharper the sand, and the less water used in mixing the cement, the stronger it will be.

	Thickness		
	1 in.	¾ in.	½ in.
1 bbl. cement will cover	36 feet	48 feet	72 feet
1 bbl. cement and 1 bbl. sand will cover	72 feet	96 feet	144 feet
1 bbl. cement and 2 bbls. sand will cover	108 feet	144 feet	216 feet

Concrete.—One barrel Portland cement, two barrels clean, sharp sand, five barrels broken stone or hard burnt bricks or clean gravel or shingle will yield about 20 cubic feet.

Foot Roads.—One barrel Portland cement, one barrel clean, sharp sand, three barrels finely crushed firebricks or hard common bricks laid 2 inches thick on a firm foundation of 4 or 6 inches thick of broken stone, well rammed and ground-drained well.

Coating Iron Ships.—Equal parts Portland cement and clean, sharp sand or finely ground bricks, and laid about 1 inch thick.

It having been frequently found that samples of Portland cement taken from the same bulk have exhibited varying results as to strength and color (the cause thereof being the different methods of mixing employed), the following suggestions will be found valuable to consumers:

1. The cement should be perfectly cool when used. If heated it will become outwardly scorched, and consequently be of a bad color.

2. Cold and clean water should be used in mixing cement to the consistency of common mortar, as hot water will injure the strength and color. Too much water will make it soft and useless.

3. Care should be taken that the sand used with the cement is of good quality—sharp, clean and well washed from all earthy substance—or the best cement will show inferior results.

4. The cement should be used as quickly as possible after it is mixed. The practice of partially mixing and afterwards remixing is most objectionable, as it destroys its setting properties. It should be allowed to dry naturally, artificial heat being highly injurious to cement.

5. The work should be first well wetted, and when the cement has commenced to set the process should not be disturbed, as if so it cannot be renewed.

6. For stuccoing, the walls should be well cleaned and wetted, and the first coat ought to contain three to four parts sharp river sand to one of cement. When hardened for the second coat, two or three parts of finer sand should be used to one part of cement.

7. For mouldings, use equal parts of cement and fine, sharp river sand.

8. For flooring granaries and maltings, level and well ram the floor, fill up to the required thickness

with one part of cement to three or four parts of shingle or broken bricks, and finish off with a float. If the surface is required smooth, it should be overlaid by a thin covering of equal parts of cement and fine sand. When the cement has set, it will benefit by covering the floor with water for several days.

9. For reservoirs, gas or water tanks, use one part of cement and two or three parts of sharp, washed sand for the brickwork, and coat the inside with pure cement.

10. For breakwaters and harbor works, blocks may be formed in moulds to any size required (at the harbor works, Dublin, they are made 350 tons each) by mixing six parts of coarse but clean gravel with one part of cement, into which may be inserted about one-fourth rubble stone. Blocks thus made must be allowed to become thoroughly set before they are disturbed. They will then resist the action of the sea, and become harder and stronger with age.

11. As to storage, great care should be taken in selecting a place for the storage of the cement. If exposed to damp or heat, all cements will rapidly deteriorate in quality. Where a perfectly dry place is available, it will be found advantageous to empty the cement out of the sacks or barrels, allowing it to remain on the floor for a time, exposed to the dry air before using it.

The longer it is setting the more its strength increases. Neat cement is stronger than any admixture of it with sand.

Cement mixed with equal quantity of sand in a year has approximately three-fourths the strength of neat; mixed with two parts of sand, one-half the strength of neat; mixed with three parts of sand, one-third the strength of neat; mixed with four parts of sand, one-fourth the strength of neat; mixed with five parts of sand, one-sixth the strength of neat.

The cleaner and sharper the sand the greater the strength.

Very strong Portland cement is heavy, of a blue-gray color, and sets slowly. Quick-setting cement has generally too large a proportion of clay in its composition, is brownish in color, and turns out weak if not useless.

The stiffer the cement is gauged—that is, the less the amount of water used in working it up—the better.

It is of the greatest importance that the bricks or stones with which Portland cement is used should be thoroughly soaked with water. If under water, in a quiescent state, the cement will be stronger than out of water. Cement kept in water is one-third stronger than that kept out.

Blocks if kept in water should be stronger.

Salt water is as good for mixing cement as fresh.

Whenever used under water, care must be taken that the water is still, as otherwise a current, whether natural or caused by pumping, will carry away the cement and leave only clean ballast.

Concrete.—Much harm is done, time wasted, and annoyance caused by the habit of inexperienced persons picking and poking cement samples of work before it has had time to get strength. To such persons quick-setting, light-weight cements would appear to promise good results, but it is now well known by every one practically acquainted with the use of cement that the well-burned, heavy, finely-ground, slow-setting cements are the best for concrete purposes.

The water used for mixing concrete should be clean. It is possible to destroy much of the strength of cement by using dirty or polluted water. Sea water has not been found to be injurious, but it is supposed to delay the setting. Respecting the quantity of water to be used, there is more danger to be apprehended from using less than from using more than the right quantity. The correct quantity is, of course, sufficient to convert the cement into a thin paste, that shall completely coat and cause to adhere all the particles of the aggregate.

Concrete mixed by hand is preferable, as it is important to have the materials all mixed dry before mixing with water. Crystallization, or setting, begins at once with the addition of the water, and as little time as possible should be spent in thoroughly mixing and placing into the mould or apparatus after water has been added. There are many various concrete mixing machines, most of them being unnecessarily complicated, the best being a plain revolving cylinder, working horizontally. Concrete mixed in machines is generally over-mixed after the addition of water.

The only liability to defects in cementing on concrete walls or floors is where two coats are used, and when idle and ignorant workmen, to save themselves trouble, use too large a proportion of cement for the thin finishing coat. Then, in consequence of the variation in the contraction of the two coats, the outer one is liable to show fine surface—or, as they are often called, sun—cracks, and even in some cases to peel off. Of course, this liability, being known, can be easily provided against.

THE APIARY.

The Catalpas and Their Honey.

As catalpas grow well and have been considerably planted in California, our readers will be interested in some statements about the tree which a California inquiry drew out from the Ohio Experiment Station through the mediumship of Gleanings.

Dr. Frederick D. Webley of Santa Rosa wrote in this way: "Prof. W. J. Green states that the hardy catalpa does not produce as much seed as the other varieties. The inference is that it does not produce as many flowers and therefore does not yield as much honey. Is that correct? If the hardy variety is as profitable to the bee keeper for its yield of nectar as the others, its qualities as a timber tree, producing wood that is both light and tough, make it intrinsically more valuable. What is the honey value of the other varieties—native, Japanese and foreign—and what are the distinguishing features of each? Where can seed be obtained? In Santa Rosa we have a free-flowering variety, used as a shade tree, and growing well in the streets and avenues and producing a fair amount of honey of average quality. The seeds of this variety I inclose and I should be glad if you can tell me what it is."

In response to this, Mr. C. W. Waid, assistant horticulturist, writes as follows: "I know very little about the comparative methods of the different species and varieties of catalpa for honey-producing purposes. I will give, however, so far as I am acquainted with them, the characteristics of the different species.

"Catalpa speciosa, also called the Western or hardy catalpa. The tree is upright in growth, with very large leaves and an abundance of bloom, although not as free a bloomer as the C. catalpa. The individual flowers are larger and more showy than any of the other species. The speciosa blooms at Wooster from the middle to the last of June. The bark of the older trees is furrowed, somewhat like the walnut, but not so marked; the younger trees also show this characteristic to some extent. The fruit pod is from 12 to 18 inches in length and ½ inch or more in diameter. The seeds are broad and the filaments—hairy projections at ends—extend out straight.

"Catalpa catalpa, also called C. bignonoides and Southern catalpa. The trees of this species are low-branching, with long crooked limbs. The flowers are somewhat more profuse than on the speciosa, but not in the same proportion as the fruit. The flowers of this species apparently set a larger per cent of fruit than the speciosa.

"The pods are from 8 to 12 inches in length and less than ½ inch in diameter, as a rule. The seeds are not so wide as the speciosa and the filaments are drawn toward a point at the ends.

"While there are trees that are clearly defined in all of their characteristics, as either the speciosa or the C. catalpa, there are also trees which have some of the characteristics of both. This makes the matter of identification more complex; and, because of the apparent crossing or variation in type, it is not safe to determine a variety by the seed alone, unless the characteristics be very clearly defined and are representative of one of the species.

"Catalpa ovata (Kæmpferii) is a Japanese species, but has not been grown very generally in this country. The flowers have a yellowish cast, which in itself is sufficient for identification of the species. The fruit pods are very long and very slender. The seeds have the appearance of very much reduced speciosa seeds.

"The seeds which Dr. Webley sent are of the speciosa type. He should be able to determine for a certainty from the above description whether they are speciosa or not, in which case he will need no other seed."

The Latest Book on Bees.

It is very interesting that a single one of several treatises on bee keeping should, through its several editions, reach a total issue of 100,000 copies. This fact shows that not only the live stock business which is founded upon the smallest of our domestic animals, the bee, is not only of very great importance, but that those who are engaged in this business are, in proportion to their numbers, the greatest readers of all the round of agriculturists. The latest book on bees is the 1905 edition of the "A B C of Bee Culture," originally written by A. I. Root of Medina, Ohio, and now largely rewritten by his son, E. R. Root. It contains over 500 double-column octavo pages. It is not an A B C in the sense that it is written for beginners only, but an exhaustive cyclopedia for the veteran as well, covering every subject relating to the practical management of bees. Neither time nor money is spared to bring it clear up to date in every department of the rapidly advancing pursuit. The edition for 1905 was revised and rewritten after the reviser had traveled some 10,000 miles among bee keepers in various parts of the United States to study the methods and practices in vogue among the most successful honey producers. Photos were taken by him and the major part of all the material gathered has been incorporated in this volume. The articles are prepared in such a way that they fit every locality in the United States. The subject of swarming, for instance, has been modified to fit the peculiar conditions as they exist in Texas, California, and the far West, as well as in the eastern and central States of the North. The book can be ordered through the Pacific Rural Press at $1.25 per copy.

THE POULTRY YARD.

Suggestions for Combinations With Fowls.

To the Editor:—Too many Californians carry their eggs in one basket. This fact was recently brought to the notice of the writer by an orchardist whose crop of fruit, from which he expected to derive a fine income (his only dependence), was greatly decimated by the frosts of April. He has had a like experience every few years in the past, and now thinks it policy to engage in raising poultry in conjunction with his fruit culture. And he is not the only orchardist similarly situated whose thoughts are in this direction, for others are giving this subject much careful consideration.

Fowls and Fruit.—No doubt there are many fruit growers in all parts of this State who will find it profitable to engage in egg farming. The culture of fruit is well supplemented by poultry raising, and well-shaded orchards can be made to bring in a double income when this combination is made. Fowls thrive in such an environment if colony houses are used, and if they are so arranged as to be easily moved from place to place, the ground will be greatly enriched by the droppings of the fowls.

A well managed poultry plant located in the orchard will greatly augment the income of the proprietor. The fowls will need careful attention and considerable time will have to be bestowed upon them. But the returns will far more than repay all expenditure, whether in time or money.

Poultry raising is a very profitable companion business to dairying. This is not theory. It has for some years been clearly demonstrated by quite a large number of the residents of Sonoma county. When one has an abundance of milk to give the fowls, the expense of feeding is materially diminished; besides, fowls thrive upon a partial milk diet.

Growing Demand for the Best.—It is to be noted that there is a greatly increased, and increasing, interest taken in poultry raising in all parts of this State. Reports from many sources indicate that breeders of standard poultry have done a much larger business in selling eggs for hatching this season than in any previous year. All things connected with the poultry business indicate that more and better fowls will be produced in California in the future than have been in the past. Furthermore, there is a greater demand for the better strains of all fowls. There is no good reason why in every county of the State the very best poultry should not be raised.

Duck Growing.—There is money to be made in raising Pekin ducks. This is a great business in many of the Eastern States. On a small scale, comparatively, these water fowls are raised in this State; but there are many localities where they might be profitably reared. Carefully fed, they can be placed on the market at an early age, and the capital invested can be frequently turned. There are many persons who think the profits of this business far greater than that of egg farming.

Fat Fowls.—Crate-fattening fowls for the market is extensively practiced in the old country and to some extent in the Eastern States and in Canada. If any considerable attention has been given to this branch of the poultry business in any part of our State we are not so informed. But this method of fattening fowls is attended with profit and the attention of our poultriers may well be given to this feature of the business. The demand for fowls thus prepared for the market seems to be very large in England, where extensive sales are continually made. The writer is in correspondence with the proprietor of a large poultry plant in Canada who finds it profitable to ship fowls thus fattened to England. If this be so, there must be good money in the business.

But we of California, as a whole, pay exclusive attention to raising poultry for the eggs they produce and find the business profitable. But, without doubt, nicely fattened fowls, young or old, would be in great demand if a good supply were furnished our large city markets.

Capons.—One sometimes wonders why more persons do not engage in caponizing chickens. A good capon will satisfy the most fastidious epicure and will always command good prices. The business has attained small proportions on this coast, but more attention might well be bestowed upon it.

Fertility.—It is worth while to strive for the greatest degree of fertility in eggs intended for hatching. There is a wonderful discrepancy in eggs from different yards in this particular. We obtain what we hope and have reason to expect will be a very fine lot of eggs, paying a goodly price, and sometimes find that they were infertile. Of course, many things enter into this matter of fertility, as, for instance, proper mating, the supply of cocks in a flock, food, etc. Just a few remarks upon the latter phase of the question. The writer has attained a very successful percentage of fertility, running away up into the 90s, owing in good degree, without doubt, to a system of dry feeding. One other thing is carefully looked after, and that is a goodly supply of roosters. It is far better to have half a dozen more than is really necessary than half as many too few.

A. Warren Robinson.

Agricultural Review.

Alameda.

NURSERY BUSINESS AT NILES.—Oakland Enquirer: William Barry, secretary of the Alameda County Horticultural Commission, has just completed the compilation of his annual report. In part his report reads: "The season for the handling of nursery stock is about closed; the output has been continuous since November 15, 1904. To date the volume of business done in nursery stock has been considerably above the average of many years, the sales of both fruit and ornamental stock having increased about 50% in this year's sales. The number of plants and trees handled at this station for an average year has ranged from 750,000 to 1,000,000, while this year it must have reached nearly 1,500,000. The number of certificates issued by men this season from November 15th to date is 1604, the highest number issued by me in any previous season has been about 1000, showing conclusively the enormous increase in the output compared with previous years."

Butte.

WOOL RETURNS.—Oroville Register: Senator Shippie's sheep of this county we are told averaged 5½ pounds of wool, and the price was about 20 cents per pound, giving a little over $1 for the wool from each sheep.

Fresno.

SELECT THEIR OFFICERS.—A Fresno dispatch dated May 6 says: The board of directors of the Raisin Growers' Co., which will handle the output of the raisins of the valley, to-day elected an executive committee, consisting of M. Theodore Kearney, M. F. Tarpey and A. J. Jordan of Fresno, W. B. Nichols of Dinuba and C. M. Blowers of Hanford. Thomas Lynch was elected manager and Arthur Goodfellow secretary. A telegram was sent to M. Theodore Kearney, president of the company, who is in Europe, demanding his immediate return to share in the work and responsibilities of promoting the interests of the company.

Glenn.

CREAMERY RETURNS.—Orland Register: Charles Templeton furnishes the following record for three months, January, February and March. During January two cows were milked and $18.54 received; three cows in February netted $23.59; during March three cows netted exactly $27.23. Mr. Templeton, in addition to the money received, is raising seven calves and six hogs.

HEAVY WOOL CROP.—Willows Journal: Zike Simpson, an Orland sheepman, beat the record here last year in the wool crop. From 10,200 head of sheep he received 56,000 pounds of wool, which he sold for 25 cents per pound, or $14,000.

Kings.

SHEEP FOR CHICAGO.—Hanford Sentinel, May 4: Two special trains loaded with sheep were sent from this county this week to Chicago, and to-day there was another special train sent out to San Francisco. It contained twelve cars of cattle and four of sheep.

ONE THOUSAND ACRES OF HAY.—Conductor A. Cameron states that the hay crop over at the Pleasant Valley Stock Farm at Stanley is a sight to behold. They now have about 1000 acres of hay cut and in the shock.

SUCCESSFUL SALE OF COWS.—The auction sale of dairy stock by W. P. McCord at the Crowell ranch Tuesday was a success, and good cows brought good prices, a bunch of some sixty averaging about $42 per head. Some sold for over $60 and the lowest price brought was about $30. The stock were of good character and the people wanted them.

Lake.

TALL OATS.—Lakeport Bee, May 3: E. Howard brought in yesterday a bunch of wild oats pulled out of the ground in Crescent Park, nicely headed out and measuring 8 feet 7 inches high and grown without irrigation. Mrs. M. J. Reese brought a sample of Brazilian oats, not yet headed out, 3 feet 9 inches tall.

Napa.

POULTRY BUSINESS INCREASING.—St. Helena Star: Garner & Bannerman say that during April they shipped from St. Helena 752 fowls and 3405 dozen eggs. When these shipments are added to those made by individual producers and by merchants, it can readily be seen that the industry is assuming large proportions. More people are going into the poultry business daily.

Mendocino.

CREAMERY RETURNS.—Point Arena Record: Notwithstanding butter decreased in price during March, the returns of the local creameries for the month were very satisfactory. The prices paid for milk were as follows: The Mayflower creamery, owned and operated by Frank Avilla, paid $1.14 for milk, which heads the list for the month of March. The Point Arena creamery was a good second, having paid $1.10. This creamery has the distinction of paying the highest price for milk of any creamery on the coast. In February it paid $1.20 and on a former occasion went as high as $1.26. The Manchester creamery proved a profitable source of revenue to its patrons the same month, having paid $1.04. The prices above quoted are on a 4% butter fat test.

Monterey.

CROP NOTES.—Salinas Index, May 4: The acreage of sugar beets in the immediate vicinity of the factory will not be as large as last year, it being the policy of the Spreckels Company to rotate crops and not plant beets on the same land every year; otherwise the soil would be exhausted of the elements necessary to produce a good crop of beets. Common barley will be more extensively grown than for several years past, and the yield will be large if the rains do not knock it down. Summer-fallowing has been practiced pretty extensively this year. A larger acreage has been planted to beans and potatoes than ever before in the history of the county, the uplands producing early potatoes and earlier beans. The apricot orchard planted by the late Judge Thompson at Agenda is heavily laden with fruit, and the almond trees at Reed's are almost breaking down beneath their burdens. The nuts are large and of the softshell variety.

CATTLE KING CHARGED WITH VIOLATING LAW.—Dr. Keane, State Veterinarian, on May 3rd, at Salinas, swore to a complaint charging Henry Miller, the cattle king, with a violation of the State quarantine law. It is alleged that Miller recently brought a number of cattle across the quarantine line from Firebaugh, Fresno county, to his Peach Tree ranch in Monterey county, which is outside the quarantine district. It is claimed that Miller has been in the habit of crossing the quarantine line with cattle without the least regard for quarantine regulations.

Orange.

MOUNTAIN LION STEALING CATTLE.—Anaheim Gazette: A mountain lion has been making ravages among cattle in Trabuco and Bell Canyon districts. On the ranch of S. T. Miller a number of young heifers and calves have been taken, and other owners report similar losses. Several days ago traps were set, but the lion succeeded in escaping them and secured his usual prey from the farmers' herds. A number of small parties have gone out to track the beast and in every instance have returned unable to find its lair. Now the mountain ranchmen, thoroughly aroused, are preparing to organize a big hunt to put an end to the marauder.

Placer.

THE FRUIT CROP.—Republican: Ed Katzenstein of Newcastle says in relation to the fruit crop this year that the crop of plums will be excellent, that of peaches good and of cherries light. There will be no pears to speak of. The cherries will be about half a crop, but prices promise to be good. Newcastle will probably ship 1200 carloads of fruit this season.

San Benito.

HAY PROSPECTS.—Hollister Bee, May 5: The Lathrop Hay Company's immense hay warehouse is nearing completion. This building will have a storage capacity of 5500 tons. There may be some question about all the warehouses being filled with hay this season, as there are varied conditions which may affect the hay crop, and it is a little early yet to determine the result at this time. There is a cry of rust; others claim it is not rust; but there is one condition that must be admitted, and that is a blight in wheat. Wheat hay will be scarce in this section on that account. This blight does not seem to affect the red oats or barley. Within the past few days we have had 1½ inches of rain. This has spoiled the hay already cut, but the general opinion is that the benefits will far exceed the damage done, and summing up the situation as it looks to-day, wheat hay will be very scarce, but there will be about the usual crop of hay, however. It may not come up to that of last year.

San Diego

BRAWLEY CANTALOUPES.—The cantaloupe growers of Brawley have contracted for 70,000 crates. The yield this year will far exceed that of last and will probably be earlier. The first shipment last year was made to San Francisco May 20th, the melons bringing 50c each. The first carload was shipped to Chicago, where the melons brought $5 to $8 per crate.

San Joaquin.

RAISING FLAX.—Lodi Sentinel: A sample of flax straw is on exhibition at the Chamber of Commerce which was grown on the Shippee ranch near French Camp, by the Flax Fiber Association. The seed was sown December 1st, and the straw pulled April 27th. Such a stand as this straw represents would yield about three and a half tons per acre. The straw is pure Dutch or white blossom variety. The seed was imported from Holland last summer. Four other varieties were also imported at the time, and show equally fine results.

LARGE SIZED OATS.—D. J. Thomas, whose place is near Lockeford, has some remarkably fine samples of red oats. They are of very rank growth, being over 6 feet high, and were grown on summer fallowed land.

Santa Clara.

FRUIT GROWERS.—San Jose Mercury, May 6: At the annual meeting of the Santa Clara County Fruit Exchange to-day the old board of directors was practically re-elected, as follows: Colonel Philo Hersey, president; F. H. Babb, F. G. Rogers, C. F. Wyman, J. T. Grant, J. A. Wetmore, S. H. Shelley, C. P. Bailey, W. M. Herold.

Shasta.

SHEEP INDUSTRY PROSPEROUS.—Redding Searchlight: Sheepmen are preparing to move their flocks to their summer ranges. Joe Sowvlen reports that the flocks belonging to James Fitzpatrick passed his place last week on the way from the winter range in Yolo county to the summer range near Goose Valley, in northeastern Shasta county. Mr. Sowvlen, who himself pays taxes in Shasta county on 2080 head of sheep, estimates that Mr. Fitzpatrick drove 4000 head to summer range. He states that Mr. Fitzpatrick realized a profit of $10,000 from his flocks during the past year. His estimate is that the wool alone would sell for $5000, and that no less than $5000 was realized from the sale of mutton sheep, the market having been very satisfactory. M. Sowvlen is devoting his entire attention to sheep raising, and has been very successful. He will not move his flocks to summer range for several weeks. His range is situated in Modoc and Lassen counties. Among other successful sheep raisers of Shasta county are Sard Wilcox of Red Bluff, James Barry of Cottonwood and Jo Hufford of Basin Hollow.

HALF A CROP OF PRUNES.—J. A. Hubbard of Anderson entertains a more hopeful view of the prospects for the prune crop this year along the Shasta county prune belt than the reports that have heretofore been heard. He estimates that at least one-half the usual crop will be harvested.

Solano.

DEMONIO YEARLINGS SALE.—Dixon Tribune: This feature of the May Day celebration was altogether successful, and the third annual sale of standard bred yearlings from the Suisun stock farm must be accounted most satisfactory to Messrs. Rush & Haile. At the time Auctioneer Harris took the stand the weather had not developed a threatening aspect, and the sale ring was crowded. There seemed to be very little difficulty in obtaining bids for the promising youngsters which had been exposed to view of intending purchasers on the grounds since early morning. At times the bidding was unusually brisk, especially on a brown colt, dam Minerva by Guy Wilkes, which was eventually knocked down to H. Muzzy of Birds Landing for $250. M. D. Cooper of Elmira showed some anxiety to possess this youngster, but the selling figures overstepped his limit. A sorrel filly, dam Venice by Gossiper (2:14) was eagerly sought after and some lively bidding was indulged in until Muzzy silenced all opposition with a bid of $300. Altogether thirteen animals were sold.

Sonoma.

FRUIT NOTES.—Santa Rosa Farmer: J. E. Keeler has received the 17-pound crates he will use for shipping loganberries, strawberries and blackberries. It snugly holds fifteen 1-pound baskets, gives fifteen pounds selected berries and is tight at the corners with ample ventilation on the top, bottom and sides. A white paper on top of the berries keeps them clean Seven and one-half pounds of raspberries are safely shipped in half-pound baskets in a smaller crate. With the requisite care exercised in picking and handling, the berries stand up well when shipped by express and give good satisfaction.

ONE OF THE FEW FORTUNATES.—Healdsburg Enterprise: W. E. Richards, one of the well-known Upper Dry creek ranchers, is one of a few who report a large prune crop this year. He states that his trees are heavier loaded this year than ever before. He has been busy thinning for some days. He has six acres of prunes.

Stanislaus.

INCREASING HAY STANDARD.—Modesto Standard: The prospect of a large crop of hay the coming season is causing the holders of old hay a lot of worry, as there cannot be any doubt but what the prices of the hold-over feed will decrease quite sharply the next few weeks. Large quantities of green feed are also having some effect on prices and business in the hay line is almost at a standstill, the local dealers report. Some of the farmers who held their hay for higher figures have thrown it on the market in San Francisco and caused a slump there, though it is understood that the large dealers are making every effort to hold up the prices.

MERINO SHEEP FOR ALFALFA.—Modesto Herald: Frank Gomes, a well-known farmer and sheepman on Dry creek, near Modesto, has decided to dispose of his quite extensive holdings of ordinary sheep and invest in 600 Merino ewes and a few bucks that he will keep on the place. He is tired of following his present flocks from plain to mountain and pasture to pasture. He estimates that he can support 600 Merinos on a hundred acres of alfalfa and will put in that acreage and fence and cross fence it. Each ewe, he says, will yield him $5 a year.

SHIPMENT OF FINE CATTLE.—Oakdale Leader, May 5: John and William Fahey, prosperous cattlemen of Cloudman, shipped 100 steers from this place Wednesday, which it is claimed were in all respects the finest lot of cattle ever before shipped from Oakdale. For the past several weeks the shipments of cattle from this place have been heavy, and we daresay that the markets below have received from no other portions of the State finer beef cattle than have been the shipments from this point, which have come principally from Tuolumne county, the Frankenheimer ranch, north of the Stanislaus river, and in the vicinity of Knight's Ferry.

Yuba.

GOOD PRICE FOR SPRING WOOL.—Marysville special to Sacramento Bee, May 6: Unprecedented prices ruled at the sale of the spring clip of wool conducted by the Yuba and Sutter County Wool Growers' Association in this city yesterday. The lowest figure accepted by the producer was 22c per pound, while in three instances the wool brought 27c per pound. The latter price was paid for the clips of J. F. Gatjens, 691 pounds; J. J. Casey, 207 pounds; and William Kneebone, 458 pounds. The Marysville Mills paid 26¾c for Coppin & Sons' clip of 1510 pounds. The next highest figures were secured by R. L. Alderman and W. J. Davis, who got 26½c and 26¼c respectively. Other lots sold were J. W. Peckham, W. J. Sanford, R. McMurtrie, and Edson Bros., all 26c; C. P. Gillette, Wm. Hoke, Wm. Smith, and F. B. Lewis, at 25½c and 25¼c; Joe. Welsh, R. L. Alderman and Eli Davis at 25c; R. L. Alderman at 25⅝c, and F. H. Graves at 25½c; Cline Bull at 24½c; A. B. Sanford and Charles Porter, 24c; W. L. Finch at 23½c; and Abbott Orchard Company, 22c. The maximum figure, 27c, is nearly 10c per pound higher than paid at this time last season. The two largest lots sold were those of F. H. Graves, 16,448 pounds, and Wm. Hoke, 11,173 pounds, which brought 25½c and 25¼c, respectively.



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CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a HUMAN REMEDY for Rheumatism, Sprains, Sore Throat, etc., it is invaluable.

Every bottle of Caustic Balsam sold is Warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

THE DAIRY.

Cleanliness of Creameries.

Secretary W. H. Saylor of the Dairy Bureau has published an outline of the manner in which the State Dairy Bureau proposes to proceed in its efforts to get the creameries of California cleaned up and conform with the new law of the State. A similar course will be adopted toward cheese factories and other factories of dairy products.

The inspectors of the Dairy Bureau will visit, if possible, every creamery and factory in the State and will check up the sanitary condition of every feature relating to the plant that has any sanitary significance. As in case of the dairies a schedule for rating the sanitary conditions, a "score card," so to speak, has been devised for the use of the inspectors, which is given below. It is based on a perfectly sanitary creamery or factory, being credited with 100 points, divided according to the relative importance of the various features in a plant that are affected by the sanitary conditions. These reports will be sent to the office of the Dairy Bureau, which plans to use them for publication in some way that will show the public who maintains sanitary creameries and factories and who have the dirty ones.

This, of course, will not be the only method the officers will have to induce creameries and factories to clean up, as they also have recourse to criminal proceedings, for a creamery to receive dirty or otherwise unfit milk or cream makes the owners liable for violating the law and prosecution under it as well as the patron that delivers it. It is, however, needless to repeat here what is required in order to comply with law, as this part of the law has already been published in a former issue. Creamery and factory operators should study carefully the accompanying schedule and be prepared when the inspector puts in his appearance and secure a good rating, and in the future keep their creameries up to the rating given them. A reputation for being dirty, once it is attained, is not easy to overcome, and when this reputation is based upon an official investigation it sticks all the worse. This is the object of the rating system. The officers of the State Dairy Bureau are of the opinion that the best way to arouse an interest in improving the sanitary conditions of our dairies and creameries is to awaken self pride, which they believe the rating system will do.

Other New California Dairy Laws.

By the acts of the last Legislature, California must have one of the finest outfits of dairy laws in the Union and it has a competent agency in the Dairy Bureau to enforce them. We have already given several of the new laws and continue with others:

Law Relating to Testing Apparatus.—It shall be the duty of the State Dairy Bureau, now existing under the laws of this State, to enforce the provisions of section 381a of the Penal Code and cause the prosecution of persons whom it knows, or has reason to believe, are guilty of violating the provisions of said section of the Penal Code. It shall be the duty of the district attorney of each and every county in the State to attend to the prosecution of all persons within his district against whom the State Dairy Bureau shall enter complaint for violating the provisions of said section of the Penal Code. Said State Dairy Bureau shall from time to time inspect and examine as to their accuracy, or their adaptability to give accurate results, all glassware, measures, scales, weights and other apparatus used in creameries, and factories of dairy products where milk and cream are purchased, to determine the amount or percentage of fat in milk or cream. Said State Dairy Bureau shall supply at cost, and not oftener than once in a year, to every creamery, or other factory of dairy products where milk and cream, or either, are purchased, upon application not more than two tubes or bottles and one pipette of the forms used with the Babcock test, which it shall first examine as to accuracy, and if accurate, or adapted to give accurate results under the usual method of operating the Babcock test, said State Dairy Bureau shall certify to this by marking durably and permanently upon each and every piece of apparatus supplied the letters "D. B." Said State Dairy Bureau shall also, upon payment at the rate of $1 for each dozen, test or examine into the accuracy of all test bottles or tubes and pipettes sent to it direct from any creamery, or other factory of dairy products where milk or cream are purchased, and if found accurate, or adapted to give accurate results, the letters "D. B." shall be marked upon each piece of apparatus examined. The State Dairy Bureau shall pay all money received for making such tests for examinations into the State Treasury and the same shall become a part of the appropriation for

(Continued on Page 302.)

CREAMERY SANITARY RATING.

NAME. ADDRESS.	PERFECT.	RATING.
I.—BUILDING.		
1. Large and roomy	5	
2. Good drainage system in working order, carrying sewerage sufficient distance	10	
3. Ample light and ventilation so as to keep interior dry	5	
4. Walls well constructed to permit thorough cleaning	5	
5. Floor and walls perfectly clean; rooms free from objectionable odors; no decaying milk or cream in crevices or about factory	5	
6 Windows clean	1	
7. Free from flies	5	
8. Hog yard, privy vault, slaughter house, manure or other dirt not in close proximity to factory	5	
9. Well provided with material for cleaning such as brushes, soap, etc	4	
10. Absence of refuse matter, old rags, paper, packing material, soiled clothes, etc	5	
Total	50	
II.—MILK AND CREAM RECEIVED.		
1. Sweet, cooled below 70°	8	
2. Free from objectionable odors and gas	9	
3. Free from solid matter as shown in strainer and tank settlings	8	
Total	25	
III.—UTENSILS.		
1. Thoroughly washed and sterilized	3	
2. Churn clean and sweet	3	
3. Testing glassware clean	2	
4. Plant well provided with full line of necessary creamery utensils	4	
5. Skim milk and butter milk vats clean, and area surrounding same free from decaying milk	2	
6. All milk pipes, pumps and other conveyances clean and free from objectionable odors	2	
Total	15	
IV.—EMPLOYES.		
1. Clean in appearance, wearing laundried clothes, etc	10	
Total	100	



THE DEERE IMPLEMENT CO., Agents, San Francisco, Cal.

DAIRY AND CREAMERY SUPPLIES ARE OUR SPECIALTY
AND WITH THE DE LAVAL SEPARATORS
we are placed in an advanced position to furnish the latest and best goods for every branch of the Dairy and Creamery business. The newest, the latest and the best always in stock. Our complete Catalogue mailed free.
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Won the Gold Medal at the St. Louis Fair. If you or a friend need some means of getting around, write for our catalogue of the best chairs made.
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Los Angeles Representatives, SWEENEY SURGICAL MANF'G CO., 212 S. Hill Street.

The Home Circle.

Suppressed Chapters.

Zenobia, they tell us, was a leader born
and bred;
Of any sort of enterprise she'd fitly take
the head.
The biggest, burliest buccaneers bowed
down to her in awe;
To warriors, emperors or kings, Zenobia's
word was law.

Above her troop of Amazons her helmet
plume would toss,
And every one, with loud accord, pro-
claimed Zenobia boss.
The reason of her power (though the part
she didn't look)
Was simply that Zenobia had once lived
out as cook.

Xantippe was a Grecian dame—they say
she was the wife
Of Socrates, and history shows she led
him a life!
They say she was a virago, a vixen and a
shrew,
Who scolded poor old Socrates until the
air was blue.

She never stopped from morn till night
the clacking of her tongue;
But this is accounted for. You see, when
she was young
(And 'tis an explanation that explains, as
you must own,)
Xantippe was the central of the Grecian
telephone. —Carolyn Wells.

The Patchwork Quilt.

Written for the PACIFIC RURAL PRESS by BERTHA F. DAVALL.

"Good mornin', Mis' Peters. Glad to see you. Come right in. My, how the wind blows! Almost blown to pieces, are you? Yes, I guess so—and cold, too. Come right up here to the fire and take this rocking chair. Yes, that chair is mighty restful, as you say; it has a terrible squeak and no amount of ile seems to cut it, but I'm fond of a squeaky chair, 'specially when I'm alone, 'cause it breaks into the stillness and kind o' seems like somebody a-talkin' to me. You see those letters cut into the wood there on the arms? Well, Jimmy did that—the scamp—one time when I was teachin' him his A B Cs. He wouldn't learn 'em, and he said he wouldn't, and took to buttin' his head against the wall. But he soon found out that that was a-hurtin' him lots worse than it was me, and so, when my back was turned, he copied the whole alphabet onto the arms o' that chair with his jackknife.

"You ask me what I've been doin' to-day? Well, just as you came in I was a-mendin' this old crazy quilt. It's almost gone, you see, but I'm goin' to rescue it for a little more usefulness. What do you think? I caught Sapphira packin' it slyly off to the rag bag this morning when she was a-makin' the beds. And—oh, dear!—it just vexed me so that I walked up and grabbed it and, sez I, 'Sapphira Smith, I suppose that's jest the way you'll be a-treatin' me! When I get old and worn out and not very useful, nor overly handsome, you'll jest pack me off to some garret, out o' sight, and leave me there to die.' It hurt the poor child's feelin's terrible, and I don't wonder. Means well; she's thoughtless, that's all. Oh, yes, Mis' Peters, I'll go right on with my mendin' and you'll not hinder me a particle. Yes, that is a pretty piece—that old rose silk. That's a piece of my aunt's wedding dress, the only nice dress she ever had before or after. Uncle was a queer fellow—he was—not overly ambitious. Many times I've heard him say, 'Well, Mother 'Arth shall never suffer from my scratchin' her face.' And he kept his word and never did a stroke of work he could get out of.

"I always admired that gray calico with the little moss rose in it, as far as the cloth itself is concerned. But, my, what a strikin' thing it was when it was made up! Mis' Bell, one of our neighbors back East, had a dress of it. She always was fond o' gay colors. We always tried to imagine the worst and sort o' prepare our minds for a shock whenever we heard she had a new dress, but I must confess we gasped when she first came out in that calico. Mis' Bell was about the best physician in our part o' the country, and her medicine was easy to take. Whenever we heard of anyone who was kind o' out o' sorts—got the blues and feelin' depressed in general—we jest packed 'em off to see Aunt Roxie, as we called her, and in less than an hour they'd be clean out o' the Valley o' Despondency and a-refreshin' themselves with wholesome laughter, which would return for months after, whenever they thought of Aunt Roxie and her sayin's. She had a way o' mixin' her words up in a most surprisin' manner. She always called dedicatin' anything decoratin' it, and she hatched her chickens in an insulator instead of an incubator. One time she was speakin' to me about what a terrible way physicians have nowadays of takin' folks up after they are dead and 'tantalizin'' 'em to find out whether they were poisoned or not. These aren't half as ridiculous as some o' her sayin's, though. You'd die a-laughin' to hear her.

"What did you say about that piece with clocks in it? Odd? Yes, so it is; never see much like it. It strikes me that that is just like the one that used to wear it. You never see many such saintly women as she is, either. She has been so disappointed in her children, too, poor soul! There's Will—smart as far as education goes, but common sense is entirely left out in his makeup. He was always ponderin' over some crazy scheme, such as a glass hen roost, with a flagstone roof. (Flagstones were awful cheap and plenty where we lived then—in Pennsylvania.) He was a-goin' to have shades to draw down in the middle o' the day, so as to fool the hens and make 'em think it was night. After a while he would pull the shades up and the hens would think it was morning and would come down from the roost and go to layin' again, accordin' to his theory. It was remarkable how Will's hens used to thrive on next to nothin'. He did experiment with some of 'em, reducin' their feed gradually, you know, till they could live on nothin' at all. But they always up and died sudden from some sort o' disease that it didn't describe in any o' his chicken doctor books. Will had great faith in the nourishin' properties o' the air, and firmly believed that if a hen could be protected from the ravages o' disease she could be made to lay two or three eggs a day, and at the same time the cost of her diet be reduced to a minimum. Yes, he was a great schemer—Will was. If there was one thing more than another that Will was proficient in it was plowin'. When he was seen a-gettin' out his plow and other riggin's we neighbors all stopped work to see the fun go on, while the men sort o' stood around, ready to applaud or to help pick up the pieces when the smash came. Will had powerful lungs, and he always tried to use 'em to a good advantage; so, havin' given a mighty shout, he'd now start the horses off across the field. But the horses bein' of uneven dispositions, one would plunge ahead while the other would hang back and sort o' brace himself in his tracks. However, after much slingin' o' clods and yellin' at the top o' his voice, Will would finally succeed in gettin' 'em started at a tolerably even gait. But the ground was soft and Will and the horses both sunk into the mud; so, as he reckoned, they wouldn't sink so deep if they moved faster, he yelled louder and slung more clods, till the horses broke into a gallop. Bein' sort o' stubborn beasts from associatin' so long with Will, they didn't choose to slow up, and so they went a-tearin' across the patch, with the plow kind o' scrapin' gently along the surface o' the ground, a-hittin' the high places and with Will a-plungin' and a-stumblin' along, screechin' and hollerin' like a loon. To add to his discomfort, from various parts sech comments as these were heard: 'Say, Will, can't I holler a little for you?' 'Whoa, now, Billy; go easy, Jake.' Poor Will, flushed and perspirin', couldn't even cease from his mad career to shake his fist at his invisible tormentors. But all on a sudden affairs were brought to a standstill 'cause o' one o' the horses strikin' an extra soft place and fallin' all in a heap. Will, too angry for words and too nigh exhausted for yellin' any more, now stood by while some o' the men extracted the struggling horse from the broken harness, and he then succeeded in leadin' the team, a-reekin' with sweat, into the barn.

"You say you must be goin' now, Mis' Peters? Dear me; you haven't stayed any time at all! Come over again when you can stay all day, and we'll have a real nice visit. Have a cup o' tea before you go? No? Well, goodbye, then. Oh, yes, I'll be over soon enough. Goodbye."

Exercise in Digestive Disorders.

One of the most common symptoms of poor digestion is lack of energy, with no desire to exercise. To one in perfect health exercise is a pleasure, and not a burden; but to the poor dyspeptic the thought of a mile walk is anything but pleasant. Each step is torture, for he can hardly lift his feet. His arms hang limp at his sides, and perhaps feel numb and lifeless. Again, he may have queer sensations in any part of the body—pain in the shoulders or between the shoulder-blades; may be pain or a sort of "dead" feeling in the legs one day and somewhere else the next. No two days alike, and yet always miserable, and the more so if he tries to do anything.

So the poor sufferer goes on from day to day, trying this remedy and that, the rest cure, the diet cure, but all of no avail. On a cool morning even in midsummer he feels a terrible chill.

His hands are cold, his face drawn and pinched, yet he has not life enough to work and warm himself up, as he could easily do if he would make the effort.

This one thing above all others he needs—exercise—and yet it is the last thing he thinks of attempting. He needs exercise because his whole body is filled with poisons from putrifying foods. He may obtain some relief from the use of a strong tonic, which so excites his heart that for the time his blood circulates more rapidly, and some of the poisons are carried off, but he is left only weaker and weaker after the effects of the various drugs wear off, so that he almost gives up in despair. Vigorous exercise in the open air will do all that the drugs will do in exciting the heart to greater action, and much more besides, leaving none of the bad results.

In order to get the best results, exercise in these cases must be vigorous enough to cause free perspiration; for in this way alone, as a rule, will the heart's action be increased enough to carry off the accumulated poisons from the tissues. Many make a mistake in not exercising with enough vigor to get thoroughly warmed up, and so lose much of the benefit that would be sure to follow in due time if they would persist in taking sufficient exercise to cause free perspiration each day or several times a day.

Exercise not only increases the heart's action and the action of the lungs by making one breathe much deeper, but it aids directly in the digestive processes themselves by shaking up the food as it lies in the stomach and intestines and helping to move it along.

This is especially true of such exercises as running, and all arm exercises. Too much cannot be said in favor of arm work in these cases. Shoveling, hoeing, sawing, hammering, lifting, carrying heavy objects in the hands, and numberless kinds of ordinary work in which the hands and arms are brought into use, are all good forms of exercise. The lady who sits at home and does fancy work or entertains company while the work is being done by some one else would often have more roses on her cheeks and would need no cosmetics if she would spend several hours every day washing and ironing or baking and sweeping. If to this she will add long walks in the fresh air and sunshine she may save many doctor's bills.

Exercise not only aids digestion, but at the same time improves the action of the bowels, relieving constipation, and thus removing the obstruction which so often prevents recovery from digestive disorders. If you wish health, work for it.—Health.

Buncoed

The man who is persuaded to buy a substitute for the famous

WILLIAMS' SHAVING SOAP

Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."

The J. B. Williams Co., Glastonbury, Conn.

You want to kno how to get my lam chimneys.

(1) Your grocer sells them, if he is fit to be your grocer; may be he don't.

(2) If you'll write me, I'll send you my Index; that tells everything.

MACBETH, Pittsburgh.

GLENN RANCH,

Glenn County, - - California.

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IN SUBDIVISIONS.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Eibe.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California

5 Miles 5 Miles 5 Miles

Within a radius of 5 miles from the Stanford University, I offer for sale some of the choicest land and best bargains in the valley. A few mentioned, viz:

16 Acres—Full-bearing orchard—almond, peach, cherries, and family orchard; nicely fenced; abundance of shrubbery, house, barn, etc. Price $7000.

10 Acres—As pretty a cottage home as you could wish to see; choice residence section; everything kept in prime condition. Price only $5250.

17 Acres—A picturesque country home; house six rooms; splendid view; running stream. Price $7000.

Splendid roads to these properties; healthful climate. Write for particulars.

JOHN F. BYXBEE, Palo Alto, Santa Clara Co., Cal.

TENTS!

IRRIGATION HOSE, ETC.

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Domestic Hints.

Creamed Potatoes With Cheese.—Peel about five ordinary-sized potatoes and cut into small cubes. Crisp in cold water, drain and boil until tender. Drain off the water, sprinkle over them a little salt and pepper, add a generous half cup of milk, a tablespoonful of butter and cover with grated cheese. Brown quickly in the oven and serve at once.

Banana Cream.—Remove the skins of a half dozen bananas, cut in halves and set to cook in a double boiler with a cupful of milk. When tender, mash through a strainer; add two tablespoonfuls of gelatine dissolved in a little milk, one-half cupful of sugar and any desired flavoring. Turn into a mould and set away to harden. Serve with whipped cream.

Cocoanut Lady Fingers.—Beat very thoroughly together a cupful of sugar and a half cupful of butter, add two eggs, previously beaten; stir in a cupful of sweet milk and a cupful of flour, a teaspoonful of cream of tartar, one-half teaspoonful of soda, and one of vanilla. Cut in lengths, roll in sugar, and bake in a quick oven. Dust with powdered sugar.

Beef and Poached Eggs.—Cut some fillet steak into small rounds, brush over with salad oil and grill until done. Fry some little rounds of mashed potatoes, and place a piece of steak on top of each. Then poach some eggs, trim them round nicely and place on top of the steak. Place a little horseradish and butter on top of the egg, or a little plain butter if preferred, make a thick brown sauce, chop up the remainder of the cuttings from the eggs and put in it. Pour round each little mound, and serve.

Delicate Cake.—From a new cook book this recipe for old-fashioned white cake, or delicate cake, is taken. Cream together one cupful of butter and two of sugar; then add slowly a cupful of sweet milk and the whites of eight eggs beaten to a stiff froth. Finally, mix in three cupfuls of sifted flour, in which has been mixed three teaspoonfuls of baking powder. Stir as little as possible. Flavor with one teaspoonful of almond extract. Sometimes a cupful of blanched and chopped almonds is added at the last. When such a cake is iced and ornamented with whole blanched almonds, an orthodox christening cake is produced.

A short time ago some men were engaged in putting up telegraph poles on some land belonging to an old farmer, who disliked seeing his wheat trampled down, according to the veracious Register of Great Bend, Kan. The men produced a paper by which they said they had leave to put the poles where they pleased. The old farmer went back and turned a large bull in the field. The savage beast made after the men, and the old farmer, seeing them running from the field, shouted at the top of his voice: "Show him the paper! Show him the paper!"

"Manchow, the tallest man on earth" is creating a great sensation at the London Coliseum. He is twenty-five, was born in Trans-Caucasia, measures 9 feet 8½ inches in his stocking feet. He was 6 feet 5 inches tall when nine years old. He eats six times as much as an ordinary man, but drinks only moderately. He weighs 448 pounds.

Doctor Yourself

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Sweet sour Pomelo and Citrus Trifoliata seed bed plants.

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THIS IS THE YEAR TO PLANT. This is the time to plant.

A fine stock of Valencias. Phœnix Canariensis Palms in seed bed by the thousand.

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"PRIMUS" BLACKBERRY.

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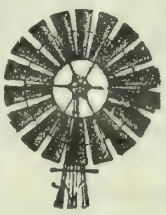
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Total number of students and graduates, Feb. 1, 1905, 755,000.
Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
Cost of preparation of textbooks and instruction papers, not counting printing, revisions, etc., $1,000,000.
Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.

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SAN FRANCISCO OFFICE,

J. W. HENDERSON, Superintendent,

1310 MARKET STREET, SAN FRANCISCO, CAL.

The Markets.

San Francisco Produce Report.

SAN FRANCISCO, May 10, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 84¼@ 83⅝	80¼@ 79⅝
Thursday	83¾@ 82⅞	79⅝@ 78⅞
Friday	82⅝@ 81½	78½@ 79¼
Saturday	83¼@ 82⅞	79 @ 78⅝
Monday	83⅛@ 84¼	78½@ 79⅝
Tuesday	84¼@ 83¾	79⅝@ 78¾

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	47¼@46¾	47¼@46⅝
Thursday	47 @46⅝	46¾@46¾
Friday	46⅝@47	46¼@46¾
Saturday	47 @47½	46¾@47
Monday	47½@47½	46⅝@47¼
Tuesday	47⅝@46¾	47⅛@46¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 45 @——	$1 29¼@1 29
Friday	1 45¾@——	1 28⅝@1 28¼
Saturday	1 45¼@——	1 28¼@1 28⅛
Monday	1 45 @——	1 28¼@1 28
Tuesday	——@——	1 28¼@1 28⅛
Wednesday	——@——	1 28¼@1 28⅛

Wheat.

Inactivity continues to prevail in the local market for wheat. Spot stocks are light as are also the receipts. Most of the wheat arriving is from Oregon and Washington, and is going mainly for domestic feed, there being no ships now on berth loading grain, and little inquiry from millers. For a month or two to come there will necessarily be much the same quiet condition as now exists. Owing to there having been an abundance of rain this season, many interested parties are looking for a big crop of California wheat. Ship owners are expecting an active demand for vessels and are advancing asking rates, some already contending for 25s, usual European trip. Chartering for new crop loading is reported up to 22s 9d for wheat and no ships obtainable at present under 23s. While there has been plenty of rain, it does not follow that the crop will be heavy. Rust has been doing serious damage in some sections as has also the Hessian fly. Some of the wettest winters in the State have been followed by comparatively light yields of wheat.

California Milling	$1 50	@1 55
Cal. No. 1 shipping, alongside	——@——	
Cal. No. 1 wheat	1 40	@1 42½
Oregon Club	1 40	@1 47½

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.45½@1.45.
December, 1905, delivery, $1 29¼@1.28.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $——@——; December, 1905, $1.28¼@1.28½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	7s0d@—s-d	6s7½d@6s8d
Freight rates	16¼@—s	22½@—s
Local market	$1 27½@1 32½	$1 40@1 42½

Flour.

There has been a fair outward movement the past week, including a shipment of 4,937 barrels to Siberia. In previous years considerable flour has gone from here to Asiatic Russia, but the above has been the only movement in that direction from this port for a long time. Demand on local account is only fair, most buyers operating as lightly as possible, anticipating an easier market as soon as the new season opens.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Offerings of this cereal are light and the demand is limited. Trading is mostly in feed descriptions, or the barley is taken for feed purposes, and in consequence the quotable range of values is rather narrow. Prices lately obtainable for brewing barley have shown little difference from figures demanded and realized for choice feed. Chevalier is not salable at any advance over the ordinary variety of barley, in the absence of any foreign inquiry for this sort. There was a time when Chevalier commanded a big premium from English maltsters, but during the past few years they have been using other barley. The lowest freight rate asked on barley cargoes to Europe is now 24s. 3d., as against 23s. asked for wheat. Why this greater difference than ever before is not explained. The figures seem out of proportion with the difference in bulk of the two cereals.

Feed, No. 1 to choice	$1 20	@ —
Feed, fair to good	1 17½	@ —
Brewing, No. 1 to choice	1 22½	@1 25
Chevalier, No. 1 to choice	1 22½	@1 25
Chevalier, common to fair	1 17½	@1 20

Oats.

Movement is not brisk and is mostly in ordinary feed qualities, there being few oats of any other sort now on market. Quotable values are without particular change, but for common grades of oats the market is not showing any special firmness, particularly for Blacks, which are offering rather freely and are not much sought after for feed purposes.

White oats, fancy feed	$1 50	@1 55
White, good to choice	1 47½	@1 50
White, poor to fair	1 42½	@1 45
Milling	1 45	@1 50
Black oats	1 25	@1 40
Red, fair to choice	1 35	@1 60

Corn

The movement of this cereal to Central America continues of fair proportions, two steamers sailing on Saturday last taking 9275 centals. There is a moderate demand on local account. Spot stocks of domestic are not heavy, but there is considerable Eastern offering. Values are fairly steady.

Large White, good to choice Cal	$1 32½	@1 37½
Large Yellow	1 27½	@1 32½
Small Yellow	1 55	@1 65
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 27½	@1 32½

Rye.

Some of very good quality is offering from Utah, but tolerably stiff prices are asked.

Good to choice	$1 55	@1 65

Buckwheat.

Market is almost bare of this cereal, and values in consequence are poorly defined.

Good to choice	$2 00	@2 25

Beans.

Good to choice beans are in fair request, with no heavy quantities seeking custom and market presents a firm tone. That there will be any weakening in values for first-class beans during the balance of the season does not appear probable, and stiffer prices may rule.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 50	@3 00
Pinks	3 50	@4 00
Bayos, good to choice	3 25	@3 50
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	4 80	@5 00
Black-eye Beans	2 70	@3 00

Dried Peas.

Green Peas in prime to choice condition are in fair request. For the Niles variety there is little inquiry at present.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

Growers and dealers on this coast continue apart in their views, and there is in consequence little doing. Growers contend that supplies of hops are barely sufficient for normal requirements during the balance of the season, and are mostly holding out for 30c. per lb. or better, but buyers have not yet put in an appearance at the figure quoted. In consequence of the existing dullness, values at present are poorly defined. The New York Producers' Price-Current says: "We learn of the sale of a few hundred bales in this State at 25@26c. On the market there has been a little increase in the demand, owing probably to shorts covering for early May delivery, and about 250 bales of Pacifics have changed hands at 25@26½c. The German market is quiet, owing to lack of local and export demand, and prices have received a setback of about 2c. In London the pool seems to be willing to sell at going prices and not put an arbitrary price upon their goods. Dealers can therefore buy from the pool without going into primary markets."

California, good to choice, 1904 crop	25	@28

Wool.

The market continues strong. At the pool sales held at Marysville on Friday last the prices realized are reported at 24@27c. per lb., three lots going at top figure. Now that dealers have secured most of the clip, they are talking very bullish, but while they were doing their heaviest buying in the interior, they claimed it was impossible to give out quotations, and the newspapers chirped the same tune.

SPRING.

Humboldt and Mendocino	25	@28
Northern, free	24	@27½
Northern, defective	21	@23
Middle County, free	22	@24
Middle County, defective	18	@20
San Joaquin and Southern, free	19	@21
San Joaquin and Southern, defective	14	@17
Oregon, good to choice	22	@26½
Nevada	17	@25

Hay and Straw.

For common qualities of hay the market is weak, offerings being mostly of low-grade. Choice to select stable hay is being held back by most owners for better prices than are now quotable. Prospects are that choice hay will meet with a firmer market. The rains this week did great damage to new crop hay, especially in the region tributary to San Francisco. Large quantities were so badly damaged as to be practically worthless.

Wheat, good to choice	$11 00	@ 13 50
Wheat and Oat	9 00	@ 11 50
Tame Oat, fair to choice	8 00	@ 11 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 10 00
Alfalfa	7 00	@ 10 00
Clover	6 00	@ 9 00
Stock hay	5 00	@ 7 00
Compressed	11 00	@ 13 50
Straw, ₱ bale	25	@ 50

Millstuffs.

Demand for Bran and Middlings is light, causing market to present a weak tone. Were it not for the fact that many flouring mills have temporarily closed down, prices for mill offal would now be lower. Quotable values for Rolled Barley and Milled Corn are without special change, but for either kind the market is not firm.

Alfalfa Meal, ₱ ton	$17 50	@ 19 00
Bran, ₱ ton	21 00	@ 22 00
Middlings	25 00	@ 28 00
Shorts, Oregon	21 00	@ 22 50
Barley, Rolled	26 00	@ 26 50
Cornmeal	28 00	@ 28 50
Cracked Corn	28 50	@ 29 00
Oilcake Meal	32 50	@ 34 00

Seeds.

The arrival noted last week of Alfalfa Seed, and so printed in the daily papers in the produce receipts, on investigation proved to be Alfalfa Meal. There is Alfalfa Seed on the market, however, and no call for it at present. Market for other seeds below quoted is quiet, values remaining nominally as before.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
	Per lb.	
Alfalfa	8	@12½
Canary	6¼	@ 6½
Rape	1¾	@ 2¼
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

Small quantities are being shipped outward. Business on local account is light. Spot stocks are of fair volume for this time of year. Prices are without quotable change. Owing to recent unfavorable weather, this year's yield is likely to be much smaller than was generally estimated in the early spring.

Extracted, White Liquid	5½	@ 6
Extracted, Light Amber	4	@ 5
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

There is a moderate movement at generally unchanged values. Some beeswax is arriving from Mexico, the product of wild bees, and although not especially attractive in appearance, is said to be given the preference over domestic by European buyers.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Beef is in very fair supply and demand only moderate. Mutton is selling at quotably unchanged figures. Veal is showing reduced receipt and for desirable sizes the market is firm at current values. Prevailing prices for Spring Lamb are only fairly maintained. Market for Hogs is steady, with arrivals rather light and mostly dairy fed.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	—	@ 5
Beef, 3rd quality	4	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@ 5¾
Hogs, large, hard, over 200 pounds	5¾	@ 5½
Hogs, small, fat	5½	@ 5¾
Veal, large, ₱ lb	4	@ 6
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	8½	@ 9½

Hides, Skins and Tallow.

Market for Dry Hides is firmer, while for Wet Salted there is a slightly better tone. There is an active demand for Longwool and Medium Pelts, with arrivals of this description light. One steamer took Saturday last 98,800 lbs. Tallow for London, and another steamer same day cleared with 32,500 lbs. for Central America.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	—@11½	—@10½
Medium Steers, 48 to 56 lbs	—@10½	—@10
Light Steers, under 48 lbs	—@10	—@ 9½
Heavy Cow Hides, over 50 lbs	—@10	—@ 9½
Light Cow Hides, under 50 lbs	—@10½	—@ 9½
Stags	7 @ 7½	6 @ 6½
Wet Salted Kip	—@11	—@10
Wet Salted Veal	—@12	—@11
Wet Salted Calf	—@13	—@12
Dry Hides	18½@—	17 @—
Dry Kip and Veal, 11 to 16 lbs	—@16	—@14
Dry Calf, under 4 lbs	—@21	—@19
Pelts, long wool, ₱ skin	1 25@2 00	
Pelts, medium, ₱ skin	90@1 10	
Pelts, short wool, ₱ skin	50@ 75	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	3¼@3½	

Bags and Bagging.

Values are quoted decidedly steady for bags and bagging of every description, with business of fair volume for this time of year.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6¾@—
Grain Bags, Calcutta, buyer June-July	6¾@6¾
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼lb	30 @—

Poultry.

Prices showed little change from those of previous week. Receipts were only moderate of both domestic and Eastern. Young Chickens, medium size to full grown and in fine flesh, sold readily and in some instances commanded an advance on quotations. Turkeys showing first-class condition brought in a limited way good figures. No very active inquiry for Ducks or Geese, but there was no excess of offerings of choice stock. Pigeon market was rather quiet.

Turkeys, Dressed, choice, ₱ lb	$ 21	@ 23
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	6 00	@ 6 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	6 50	@ 7 50
Fryers	5 00	@ 6 00
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ₱ dozen	5 50	@ 6 00
Ducks, large young, ₱ dozen	6 50	@ 7 50
Geese, ₱ pair	2 25	@ 2 50
Goslings, ₱ pair	2 50	@ 2 75
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	1 50	@ 1 75

Eggs.

Large quantities are going into cold storage and current values are thus being well maintained. The Navy Department is in the market for about 200,000 pounds choice May and June butter, which must be pasteurized, sealed without solder in 3-pound tins, carried until called for and the quality guaranteed for one year.

California, select, large, white and fresh	19	@—
California, select, irregular color & size	17½	@18½
California, good to choice store	16	@17
Eastern firsts	—	@—
Eastern seconds	—	@—

Butter.

Market for domestic is weak, stocks being ahead of the demand, and there being little disposition to place supplies in cold storage at full current figures. Eastern markets are strong, choice Eastern costing 17c laid down here.

Creamery, extras, ₱ lb	19	@—
Creamery, firsts	18½	@—
Creamery, seconds	18	@—
Dairy, select	18½	@—
Dairy, firsts	18	@—
Dairy, seconds	17½	@—
Mixed Store	16	@17

Cheese.

Quotable values and the general tone of the market have not changed materially since date of last report. More eggs are coming forward than are required for immediate use, but the ice-houses are taking the surplus.

California, fancy flat, new	9½	@—
California, good to choice	9	@ 9¼
California, fair to good	8½	@ 9
California, "Young Americas"	9½	@10½
Eastern	17	@17½

Potatoes.

Old potatoes are arriving from Minnesota and Colorado. It is said about 175 carloads of 15 tons each, or about 52,000 sacks, are being imported at a cost little if any more than ordinary River Burbanks are now selling for in the local market. This imported stock will be used largely for seed, owing to scarcity of domestic. New potatoes are in fair receipt and are meeting with a moderately firm market.

Cal. Early Rose, ₱ cental	—	@ —
Salinas Burbanks, ₱ cental	—	@ —
River Burbanks, ₱ cental	75	@ 1 20
River Reds, ₱ cental	85	@ 1 00
Oregon Burbanks, ₱ cental	1 00	@ 1 50
New Potatoes, ₱ cental	1 25	@ 2 00
Sweet Potatoes, ₱ cental	—	@ —

Vegetables.

Asparagus arrived rather freely, but No. 1 to choice was in good demand, both for canning and immediate use. Choice Peas were plentiful and cheaper. Tomatoes moved slowly, both domestic and imported, at the prices asked. New Red Onions were in increased receipt and lower. Old Onions from Australasia were steadily held; further consignments of 1610 crates arrived Monday.

Asparagus, No. 1 to choice, ₱ lb	5½	@ 7
Asparagus, No. 2, ₱ lb	4½	@ 5
Beans, Lima, ₱ lb	—	@ —
Beans, String, ₱ lb	4	@ 7
Beans, Wax, ₱ lb	—	@ —
Cabbage, choice garden, ₱ 100 lbs	50	@ —
Egg Plant, ₱ lb	—	@ —
Garlic, ₱ lb	10	@ 12½
Mushrooms, ₱ lb	—	@ —
Onions, Australian, ₱ ctl	5 25	@ 5 75
Onions, New Red, ₱ ctl	1 25	@ 1 75
Peas, Green, ₱ lb	2	@ 3
Peppers, Bell, ₱ lb	15	@ 20
Peppers, Green, ₱ lb	10	@ 15

Rhubarb ℔ box	40	@	75
Summer Squash, small box	75	@	1 25
Tomatoes, Los Angeles, ℔ box	1 25	@	1 75
Tomatoes, Florida, ℔ crate	2 75	@	4 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

At a recent meeting of Apricot growers held at Oakley they decided to demand $35 per ton for guaranteed first-class fruit. Some papers stated that they were asking $15 per ton, which is incorrect. Cherries were in fairly liberal receipt this week, but it was the exception where they did not show more or less damage from rain, few being suitable for shipment, and for the general run of offerings the market inclined in favor of buyers. Strawberries in most instances were also off in quality in consequence of the rainy weather, causing a tolerably wide range in prices, with market firm for choice to select. Large Gooseberries in fine condition were in good request, but demand for small was not active. A few Raspberries arrived from Placer county. Blackberries and Raspberries were on market from Southern California, but not in sufficient quantities to warrant regular quotations.

Apples, fancy, ℔ 50-box	2 00	@	2 25
Apples, good to choice, 50-lb. bx	1 50	@	2 00
Apples, fair to good, ℔ box	1 00	@	1 50
Cherries, Black, good to choice, bx	75	@	1 00
Cherries, White, good to choice, bx	30	@	65
Cherries, loo-e ℔ lb	4	@	8
Gooseberries, English, ℔ lb	12½	@	—
Gooseberries, other kinds, drawer	35	@	60
Strawberries, Longworth, ℔ chest	7 00	@	11 00
Strawberries, large var., ℔ chest	4 00	@	7 00

Dried Fruits.

Shipments of dried fruits outward the past week have been of quite liberal proportions for this time of year, prominent among them being the forwarding of 887,567 lbs. Prunes to Germany per steamer Sesostris. The steamer Senator, sailing May 5th, took for British Columbia and Northwest Territory 52,475 lbs. dried fruit, exclusive of raisins, and including 8,000 lbs. Apricots, 2,250 lbs. Peaches, 3,750 lbs. Plums, 1,125 lbs. Pears, 500 lbs. Nectarines, 1,375 lbs. Figs. A Mexican steamer took 7,300 lbs. assorted. Market shows a generally firm tone, with tendency to better prices, particularly for Prunes of both last and coming crop. The recent rains did serious damage to orchards, mainly in the middle counties. Tolerably heavy yields of Apples and Apricots are looked for, but these varieties were thinned out greatly in some sections by the recent storm. There may be a fair yield of Peaches, taking the State as a whole, reports being good in some parts and poor in others. Dealers are quoting Peaches of coming crop at 5½c. for August-September shipment. Plums are reported light in all parts of the State. Pears make the poorest showing of all fruits; not only will the crop of the State be very small, but the quality in most sections will be of low average.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5¼@ 6
Apples, extra choice to fancy, 50-lb boxes	6½@ 7
Apricots, Moorpark	10 @12
Apricots, Royal, good to choice, ℔ lb	8 @ 9
Apricots, Royal, fancy	10 @11
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	8 @ 8½
Peaches, unpeeled, fancy to extra fancy	9 @10½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	7½@10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes: in bags, 4 sizes. —@—c; 40-50s, 4@4¼c; 50-60s, 2¾@3c; 60-70s, 2¼@2½c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s. 1½@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3½
Figs, White, in bulk	3 @ 3½
Figs, Black	2½@ 4

Raisins.

In quotable values there have been no changes announced. Present offerings are largely lower grades. The steamer Senator, sailing 5th inst., carried 11,246 pounds for British Columbia and Northwest Territory. Minor shipments were made to various points.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85 @—
London Layers, 3-crown, 20-lb box	90 @ 95
Fancy Clusters, 4-crown, 20-lb box	—— @1 30
Dehesas, 20-lb box	—— @1 85
Imperials, 20-lb box	2 25 @2 35
2-Crown Standard loose Muscatel	3¼@3¼c
3-Crown Standard	4 @4¼c
4-Crown Standard	4¾@ —c
Seedless Thompsons	—@4½c
Seedless Sultanas	—@3 c
Fancy, 16-oz. Seeded	6 c
Choice, 16-oz. Seeded	5 c
Fancy, 12-oz. Seeded	4⅞c
Choice, 12-oz. Seeded	4½c
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c
Bleached Thompsons, Woodland Dist., 50s	5½@8 c

Citrus Fruits.

In the Orange market additional firmness was developed for good to choice fruit, with offerings of this description only moderate and the demand fairly active. The smaller sizes of Navels were most in favor and commanded the best figures. Lemon market was without particular change, supplies being ample for immediate demand, which was only fair. Limes were not in very heavy stock and were held as last quoted.

Oranges, Navels, choice to fancy, ℔ bx	2 25	@3 00	
Oranges, Navels, fair to good, ℔ box	1 50	@2 00	
Oranges, Seedlings, ℔ box	1 25	@1 50	
Oranges, Cal. Tangerines, half box	1 25	@2 00	
Lemons, California, select, ℔ box	2 25	@2 50	
Lemons, California, good to choice	1 50	@2 00	
Lemons, California, fair to good	1 25	@1 50	
Grape Fruit, ℔ box	1 50	@2 25	
Limes, Mexican, ℔ box	4 50	@5 00	

Nuts.

Business is mostly of a light jobbing character and at generally unchanged figures. Stocks of both Almonds and Walnuts are nearly all out of first hands.

Chestnuts, Italian, ℔ lb	—@—
Nonpareil Almonds	13 @16
Ne Plus Ultra Almonds	11 @14
Languedoc Almonds	8 @11
Peanuts, fair to prime	4½@ 5¼
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	10 @11
Cal. Walnuts, No. 1 hard shell	11 @12
Cal. Walnuts, No. 2 hard shell	9 @10

Wine.

The wholesale wine market remains virtually as previously noted. Dry wines of last vintage are quoted at 14@17c per gallon, San Francisco delivery. There is not much choice dry wine offering from first hands and common qualities are not readily placed. Sweet wines of 1904 are quoted at 25c per gallon in bulk at wineries and 27½c in a jobbing way in this city. The steamer San Jose, sailing May 5th, carried 50,771 gallons and 29 cases, including 44,486 cases for New York. Receipts at San Francisco last week were 389,125 gallons and for preceding week were 270,750 gallons. It is reported that a number of associations and corporations are using spoiled raisins in the manufacture of sweet wines, in violation of Government regulations.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	91,528	3,962,789	4,781,582
Wheat, ctls	45,634	2,561,273	2,117,588
Barley, ctls	34,772	3,235,449	5,193,032
Oats, ctls	1,751	809,195	824 618
Corn, ctls	3 557	239,083	145,330
Rye, ctls	1,440	52,511	53,476
Beans, sks	12 650	613,373	687,900
Potatoes, sks	10,432	1,164.584	1,193,993
Onions, sks	1,422	124 511	143.834
Hay, tons	1,851	159,203	155,533
Wool, bales	5,261	68,895	54,185
Hops, bales	53	39,133	29,487

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	58,316	2,592.840	2,991.036
Wheat, ctls	145	804,997	903,866
Barley, ctls	3,411	1,856,139	4,060,795
Oats, ctls	2.803	79,547	22.848
Corn, ctls	12,590	121,127	17,049
Beans, sks	834	48,341	37,544
Hay, bales	9,344	224 298	213,956
Wool, lbs	....	830.690	2,345,187
Hops, lbs	2,748	382,299	585,790
Honey, cases	86	2,510	4,768
Potatoes, pkgs	326	103,025	102.779

THE RANGE.

Rules for Grazing on the Yosemite Reserve.

A strip of grazing land which has been excluded from the Yosemite Park is attracting the attention of cattlemen, but owing to the proximity of the park the Federal Government, to which the land belongs, will not allow the owners of herbs to pasture them there except by permission, and there are certain rules of precedence which virtually exclude the valley cattle. Chas H. Shinn, supervisor of the Northern Division Sierra reserve, makes the following statement for the guidance of cattlemen:

Reserve grazing is always given to small land owners—residents of the reserve—as "preferred applicants." Those who own lands in, but do not live within, the reserve, and those whose homes are near the reserve are then considered. Last of all come those men whose homes are more remote and whose cattle are not mountain cattle.

In the present case the territory taken from the park is of limited area. Overstocking will only result in causing the Government to cut down on the number allowed next year. Those who go in must not let their cattle trespass on Yosemite Park to the east. Those who do not receive a permit must not allow their cattle to enter at all, nor must those having permits allow any in excess of the number allotted them.

I have been asked in especial about "drifters." The rules of the reserve are plain and clear on this point. Rangers finding cattle in the reserve without a permit will notify me and also the owner. The owner will take them out (within a limited time set by the ranger) and so report. The Government is not required to take out trespassing cattle, but only to notify the owners and to begin court proceedings whenever thought best.

It will take some time to get permanent camps chosen for rangers and to start free timber permits for applicants, but the plan of the reserve work includes the full utilization of all the resources of this new territory—its timber, grass, water and minerals.

THE VETERINARIAN.

A Case for a Doctor.

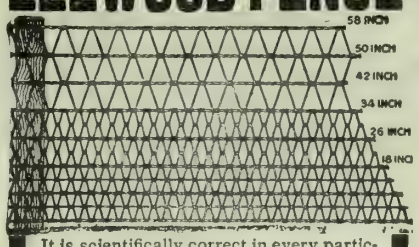
TO THE EDITOR:—Our year-old colt has a swelling on his right hock, which is soft, not tender, and seems to go clear through the joint from the large swelling on the inner side to the smaller swelling on the outside. He was very weak when born and did not stand well on his legs, and fell down easily. We think he hurt the joint then, for it has always been a little swollen, but now the joint is very much swollen and our physician says to open it and let out the fluid in it; and a horse doctor here says let it alone. Shall we blister it with iodine, open it so it will drain well, or what shall we do?—READER, Merced county.

We cannot act as a referee between doctors, who have the advantage of examining what they give an opinion upon. If your "horse doctor" is a qualified veterinarian, give him the case and follow his advice—if he is not, get the aid of such a one. It is not a case for home practice, if the colt is worth anything.

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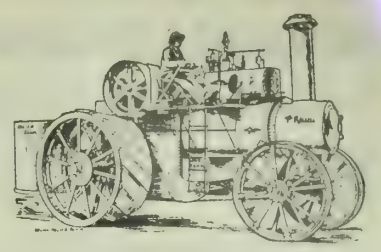
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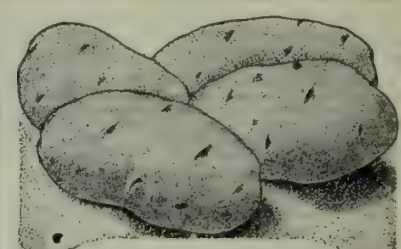


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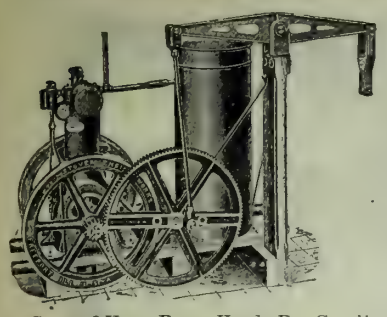
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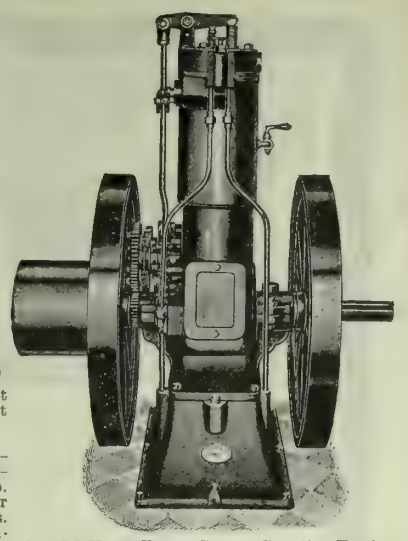
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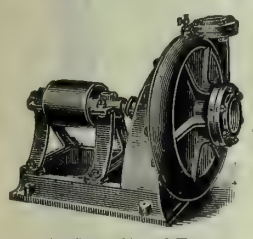


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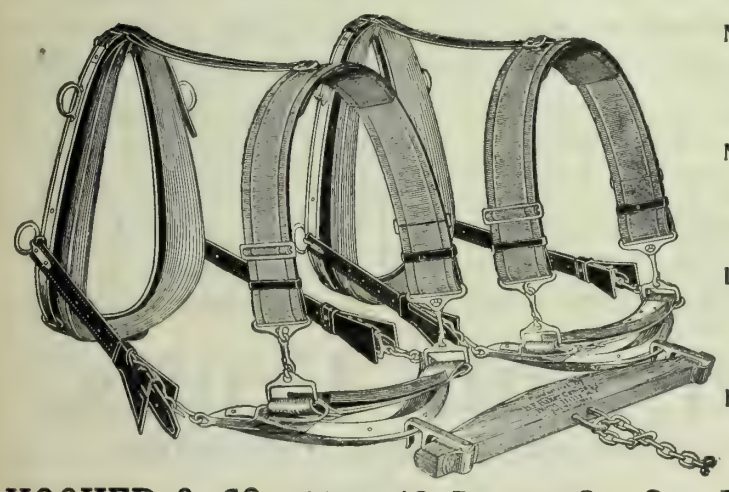
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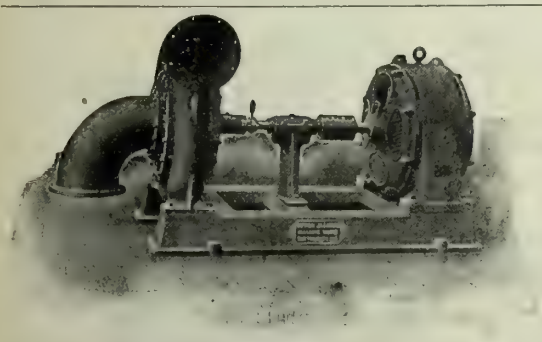
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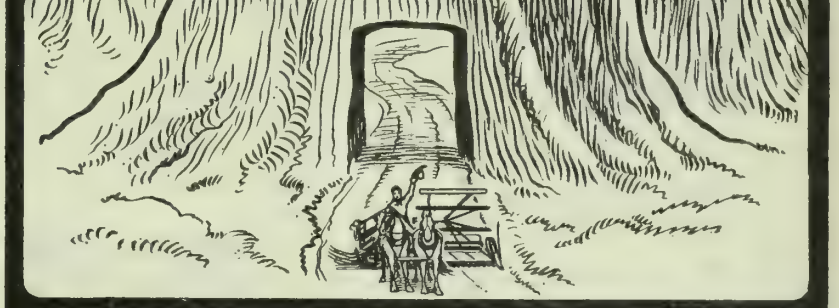
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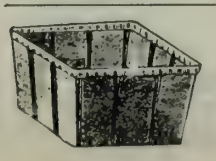
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THE DAIRY.

Other New California Dairy Laws.

(Continued From Page 295.)

the use of the State Dairy Bureau and its disposition shall be at the disposal of the State Dairy Bureau in enforcing the provisions of this act.

LAW RELATING TO RENOVATED BUTTER.—SECTION 1. No person or persons, firms or corporations, by themselves or their agents or employes, shall sell, offer for sale or expose for sale or have in his or their possession for sale any renovated butter unless the same shall have printed upon each and every package, roll, print, square, or any container of such renovated butter the words "renovated butter" in letters not less than ½ inch in height, or who shall not have secured from the State Dairy Bureau, now existing under the laws of this State, a license as provided hereinafter.

Sec. 2. The term renovated butter as used in this act is hereby defined to mean and include butter that has been reduced to a liquid state by melting, and drawing off such liquid or butter oil and churning or otherwise manipulating it in connection with milk or any product thereof.

Sec. 3. Any person or persons, firms or corporations, desiring to manufacture or deal in renovated butter shall make application to the State Dairy Bureau for a license and upon payment of a license fee of the amount mentioned herein, to the State Dairy Bureau, said Bureau shall issue to the applicant a license. All such licenses shall expire December 31st of each year and may be issued in periods of one year or six months, upon payment of a proportionate part of the license fee. Manufacturers of renovated butter within this State shall pay an annual license fee of one thousand dollars; wholesale dealers shall pay an annual license of four hundred dollars; retail dealers shall pay an annual license fee of fifty dollars; hotels, restaurants, boarding houses and all other places where meals are served and payment is received therefor, either immediately or by the day, week or month, and which use or furnish renovated butter in connection with said meals, shall pay an annual license fee of ten dollars. The term wholesale dealer as used herein includes all persons, firms or corporations, who shall sell renovated butter in quantities of ten pounds or more. The term retail dealers includes all persons who sell in quantities of less than ten pounds. All licenses while in force shall be conspicuously displayed in the place of business of the party or parties to whom they have been issued. The State Dairy Bureau shall require all persons holding a manufacturer's or wholesaler's license, as provided in this act, to keep a record in a form separate from all other business in which every sale of renovated butter shall be recorded, giving the quantity sold, the name and location of the buyer and the place to which it was shipped. Such record shall be accessible at all times to duly authorized representatives of the State Dairy Bureau.

Sec. 4. All license fees paid to the State Dairy Bureau under this act shall be paid by said Bureau into the State Treasury, the same to be added to the appropriation made for the same fiscal year for the Bureau and its expenditure shall be at the disposal of said Bureau for its use.

The concluding sections fix the fines and show how prosecution shall be pursued.

Even of wine, so cheap and abundant in Spain, the natives seem to use very little. They are frightfully intemperate, however, in their use of tobacco and coffee. The clerk who takes his morning cup at nine has another at his desk an hour later, purchased from a street vender. The business men, passing through the streets, pause while a fellow who carries hot coffee, hot milk, sugar and spoons harnessed upon him serves them on the sidewalk.

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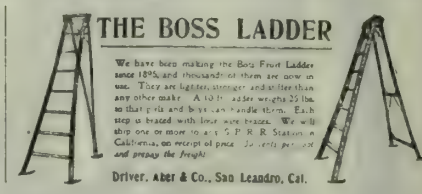
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Great Grangers' Picnic.

The picnic of the Grangers on Saturday of last week at Elk Grove Park was attended by fully 4000 people. The report in the Sacramento Union says that every Granger with his friends was there, and the day—all too short—was crowded with holiday pleasures. Everybody found something to amuse them. Good humor, a festive spirit and hilarity reigned underneath the spreading branches of the immense grove of white oaks.

From far and near, for a radius of 30 miles in the wide country round, came buggies, automobiles, farm wagons and saddle horses, all bearing picnickers and all converging at Elk Grove.

At the grove were many amusements of every known species. Under the shade of the oaks, upon a huge platform, the people passed a large part of the day in dancing to the music of a brass band. In the morning there were two baseball games, and in the afternoon the field sports.

The Grangers' committee of arrangements, consisting of H. C. Muddox (chairman), Thomas Waite (secretary), J. H. Hayden (treasurer), John Schell and L. S. Dart, were everywhere extending the open-handed hospitality of the Grangers to strangers, introducing people and generally facilitating the pleasure of everybody who came to the picnic.

Upon the grass under the trees a hundred or two babies rolled and frolicked. There were fully as many children present as grown-ups, but for this gala day everybody forgot their dignity and renewed their youth.

The excursion leaving Sacramento at 10:10 in the morning brought nearly a thousand persons to Elk Grove. There every person and his lunch basket disembarked and found a multitude of vehicles ready and waiting to convey him to the picnic grounds, 1½ mile away. Owing to the careful prearrangements of the Grangers' committees, the whole programme of the day moved off without a single hitch.

There were no complaints, no disappointments of any sort. The day was ideal—not too hot to be unpleasant and not so cool as to be chilly. At noon the contents of many a capacious basket were spread in tempting array upon snowy linen beneath the trees, and a hearty lunch braced the picnickers for the field sports in the afternoon.

The races were a great feature of the day's amusements.

Observations Along the River Nile.

The following letter from John Tuohy was received by Thos. Jacob, and was read before the Tulare Grange last Saturday:

"We have finished our trip up the Nile and started on our return, yesterday, down the river. Luxor is perhaps 70 miles below the first cataract of the Nile, and the first cataract of the Nile is near 6 miles above the village of Assuam and nearly 800 miles above its mouth, near the city of Alexandria.

For over 1500 miles above its mouth the Nile has no tributary, all its great flow of water coming from central and tropical Africa, 3000 miles from its mouth. The present stage of the river there is about as much water as in the Sacramento, ordinary stage. At this place it does not exceed 150 to 200 yards wide, and yet our steamer, drawing only 2 feet 6 inches in the water, frequently grounds, but the bottom is shifting.

At the first cataract is built the great Assuam dam across the river. On the top it is 1¼ miles long and about 20 to 24 feet wide, with a car track in the center and parapets of, I judge, 4 feet high, on both edges.

At the highest stage the water is allowed to get above the dam; it is about 80 feet deep and it, the water, is backed up the river 120 miles. On one side of the dam are locks, seven I think, capable of readily raising the largest boats on the Nile. The dam has already cost the government of Egypt, which is building it, over $15,000,000 and several hundred men are still employed putting, on the lower side of it, additional aprons and strengthening the abutments.

The dam has 180 flood gates, only ten of which are open, but that is sufficient for the present flow of the river to pass through. There is no overflow outlet, nor is there any canal taking water from the dam. It is estimated the 180 flood gates will take all the water of the river at its greatest height.

The dam is intended for storage purposes only, storing when the river has its floods in the months of July, August and September, and holding until the following spring March, April and May, when it is let down, causing overflows twice a year instead of once.

Workmen on the dam are paid about the following wages, without board: Stone cutters and masons, nearly all being Italians, $2 per day, extra time and piece work enabling them to make $3 a day; engineers, natives, 50 cents a day; laborers 20 cents a day.

I do not know on what basis the Egyptian government will fix its charges for water, but our guide, an Egyptian, speaking English imperfectly, said the government will tax the land benefited to pay the bond, and it is estimated the charge, the first year, will be $2.50 per acre, rising as payments of the principle have to be made to $12 per acre. The bond bears 6% interest.

Except the river bottom lands of the Nile, Egypt is absolutely mountainous, sterile, without a sign of vegetation and an utter desert. Perhaps 80 to 100 miles above its mouth the Nile forms a delta and there is perhaps as much distance between the mouths where the waters are discharged into the Mediterranean. It is, perhaps, 600 or more miles from the forking of the river of Assuam with an average width of bottom land of 8 miles.

This bottom land and the delta is rich, fertile and productive. It is cultivated to the water's edge and made, by cultivation and irrigation, to produce two and three crops a year, each crop being abundant. It is one of the greatest wonders of the world that no mortal knows how long this intensive cultivation has been going on, for Egyptian history, civilization and agriculture are the oldest known in the world, and its oldest record goes back to 7000 years before Christ when there was a high stage of civilization, and still no more productive land. I have not seen a sign of any underbrush anywhere in Egypt.

Although the soil water must be near the surface, judging by the river, irrigation is universally practiced, the principal method being by hide buckets on sweeps, there being usually two or three lifts—one to the one above and in some cases five lifts, many but one lift. Some few pumps, worked by two men, on the principle of the Archimedes screw for lifting water, are wheels driven by an ox or gnu, or camel, with buckets on the inside of the rim, some endless chain buckets.

The principal crops are sugar cane and cotton, although large crops of vegetables are grown, among them being a bean known or called the Nubian bean. This is pulled up by the roots; everything is utilized. The people all live in villages, their houses being mud hovels. How they cook or what they cook with I have not learned. Much barley and wheat are raised. Yesterday I passed through a small barley field which is headed out and will be an average crop; it will make fifteen of our sacks to the acre.

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for any case of colic, curb, splints, contracted or knotted cords, recent shoe boils, splints or callous that cannot be permanently and positively cured, if directions are followed, by

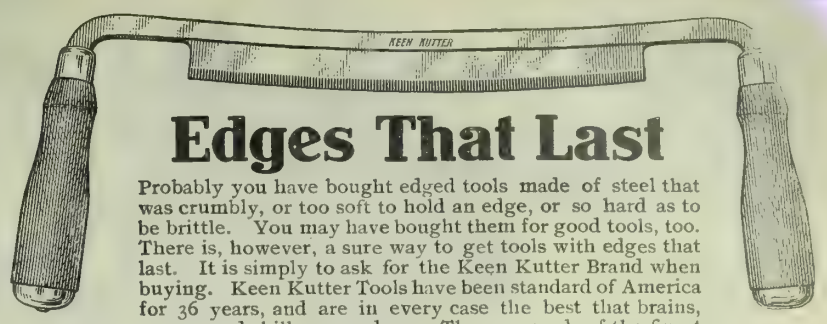
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Probably you have bought edged tools made of steel that was crumbly, or too soft to hold an edge, or so hard as to be brittle. You may have bought them for good tools, too. There is, however, a sure way to get tools with edges that last. It is simply to ask for the Keen Kutter Brand when buying. Keen Kutter Tools have been standard of America for 36 years, and are in every case the best that brains, money and skill can produce. They are made of the finest grades of steel and by the most expert tool makers. As a complete line of tools is sold under this brand, in buying any kind of tool all you need remember is the name

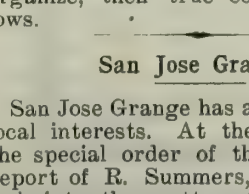
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Tulare Grange.

TO THE EDITOR:—The regular meeting of Tulare Grange was largely attended and much enthusiasm was displayed by members generally. The noon hour was an enjoyable and social feature.

The committee appointed at the last meeting to confer with the directors of the several irrigation companies, with a view to prevent the electric power companies from robbing the valley of the necessary water for irrigation purposes, was granted further time.

Worthy Lecturer pro tem Miss Swanson presided during Lecturer's hour. The contents of the question box brought out many valuable thoughts, members generally speaking freely to those questions.

Bro. Shoemaker read clippings from Eastern papers of 500 school children in Philadelphia being taught agriculture. These children are taught the use of the spade, hoe, etc., with such knowledge as suits their young minds regarding various vegetables and fruits. The Grange educates the farmer; he must organize, then true co-operation follows.

E. C. S.

San Jose Grange.

San Jose Grange has a keen eye upon local interests. At the last meeting the special order of the day was the report of R. Summers, appointed to look into the matter of the suggested bridging of Alviso slough by the Southern Pacific Railroad. The report was quite full as to the injury to local commerce such a bridge would prove. He reported that the Chamber of Commerce has already sent a request to the Secretary of War asking that before any privileges are granted its committee be given a hearing.

Mr. Summers was continued a committee to watch the matter and to formulate a resolution to be presented at the next meeting. It was also decided to request the Pomona Grange to take action on the subject.

A Russian timber dealer has discovered a valuable mine of oak. It is in a river of south Russia, in layers 3 or 4 feet deep, scattered over 150 square miles, and its most striking feature is its variety of colors, supposed to be due to the variegated soil of the river bottom. No fewer than twelve shades of pink, blue, yellow and brown have been noted, each log having its own uniform shade. The logs taken out have ranged from 40 to 200 feet in length and from 15 to 20 inches in diameter, and it is estimated that more than 150,000, averaging 70 feet, remain.

The official figures show that there are 17,000,000 children in Russia between the ages of six and sixteen who are not getting any signs of an education.

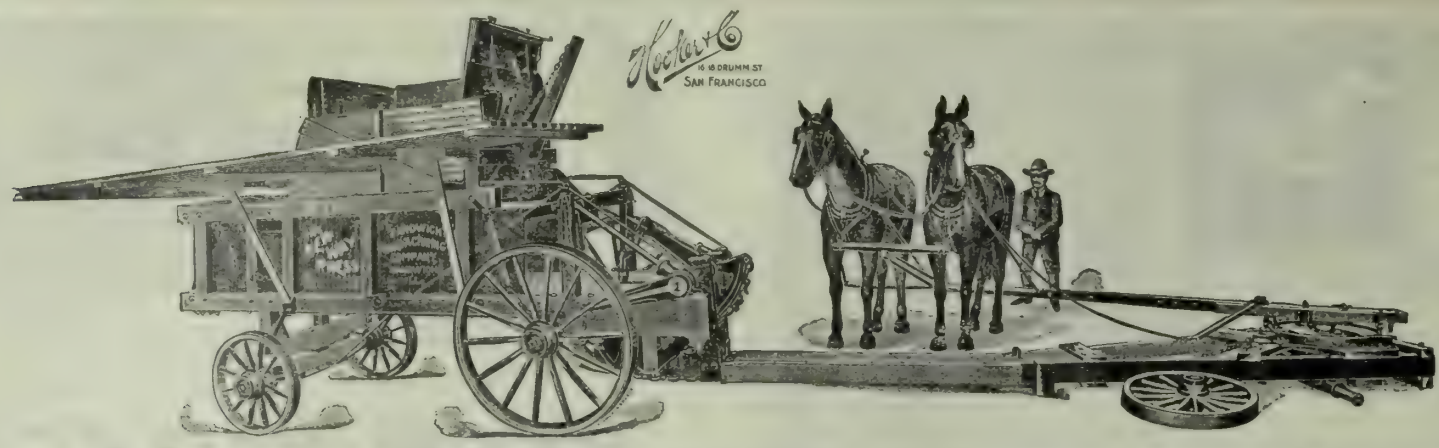
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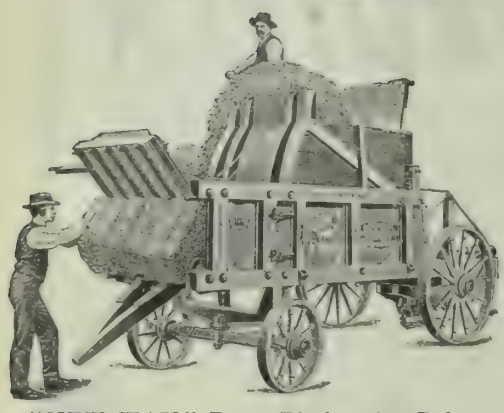
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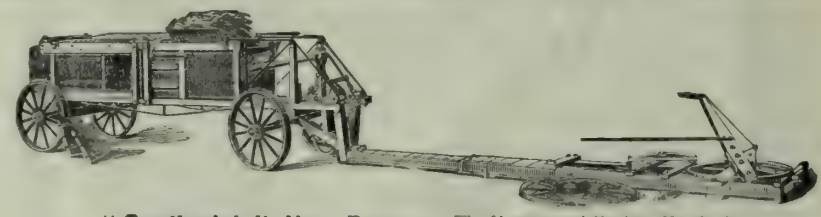
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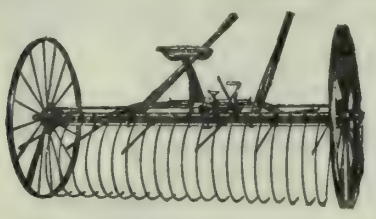
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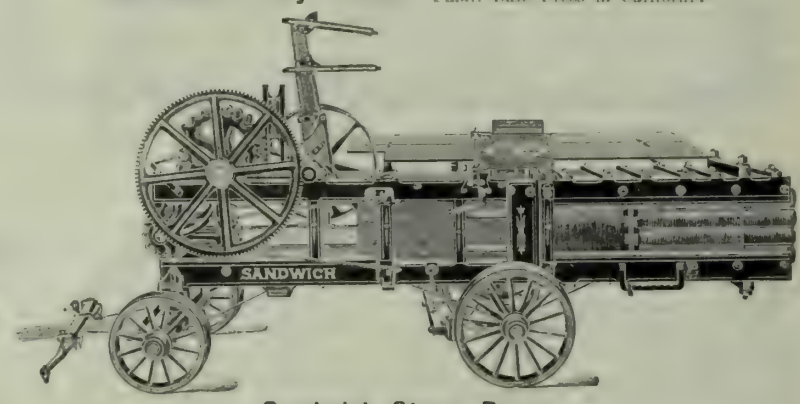
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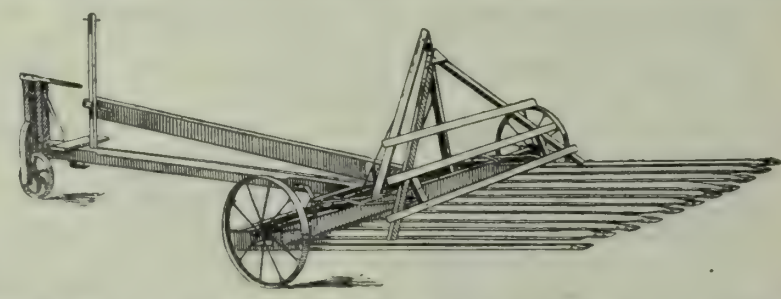
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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 20. SAN FRANCISCO, SATURDAY, MAY 20, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

On the Upper California Coast.

The hot wave of the present week makes a sight of the coast very refreshing, and a group of views showing different coast features of Humboldt county is timely. The California coast, through the whole thousand miles or more of it, if one measures its meanderings, is characterized by picturesqueness and beauty in all forms, from frowning cliffs and jutting rocks to smiling beaches. The views on this page might be duplicated in nearly all coast counties of the upper three-quarters of the State. But though phases of beauty are many and widely spread, harbors are few, and Humboldt county has in its bay one of the notable ones of the State. Humboldt bay is, in fact, counted the only harbor on the coast of northern California, and the principal one between the bay of San Francisco and the mouth of the Columbia river.

This bay is 14 miles in length, with a varying width of ½ mile to 4 miles. Its tidal area is approximately 28 square miles, with about 35 miles of navigable channels, and it possesses an available water frontage of over 50 miles. The bay lies lengthwise parallel to the coast, separated from the ocean on the west by peninsulas varying from ¼ mile to 1½ mile wide. The entrance to the bay from the ocean is situate about the center of the coast line of Humboldt county. On the north, east and south the bay is protected from storms by mountain ranges and headlands, and, the entrance being comparatively narrow, the most tempestuous storms of the ocean scarcely disturb its waters.

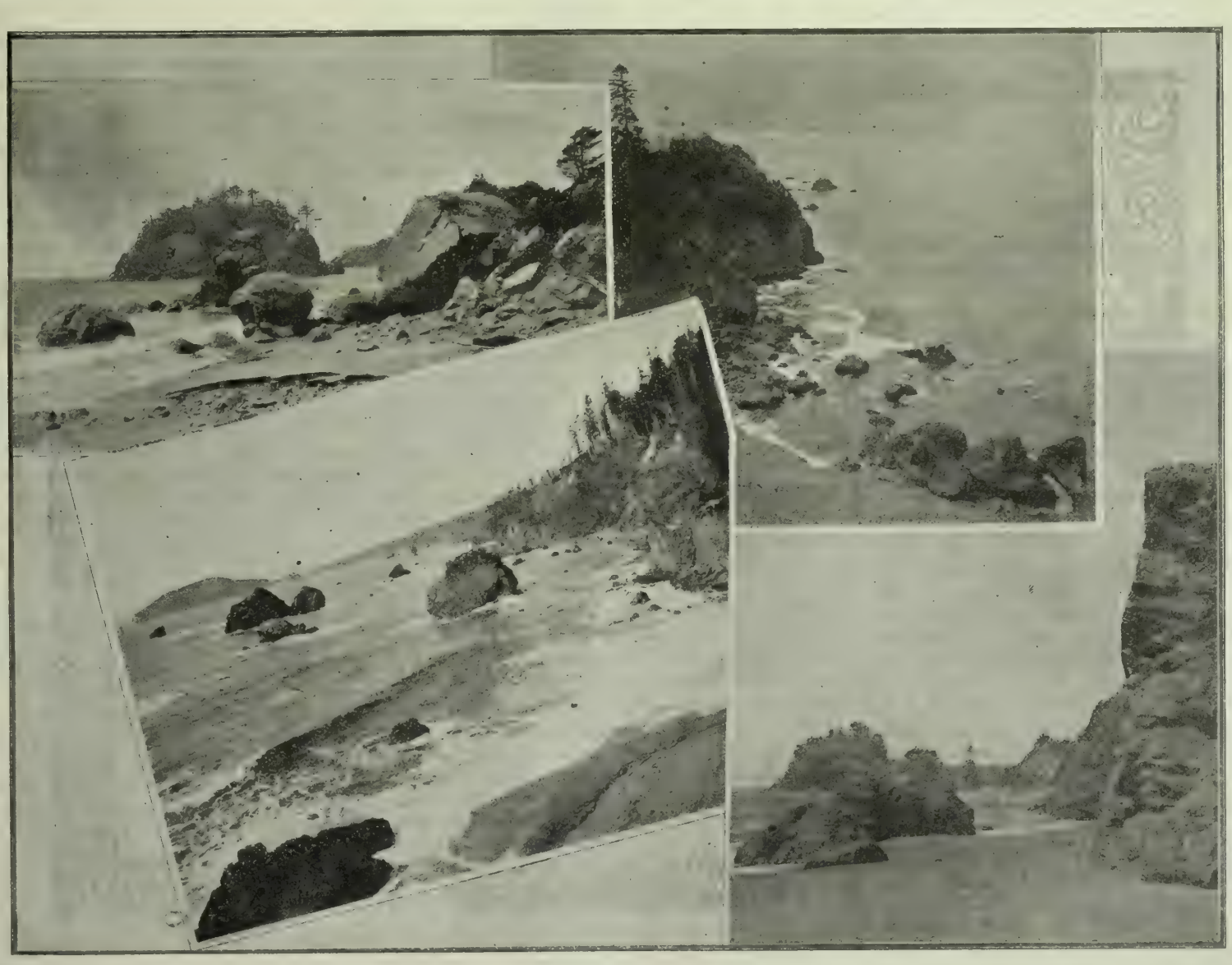
The vast importance of so commodious and safe a harbor, contiguous to the highways of Pacific commerce, had long been recognized by maritime interests, but its usefulness had been impaired by the presence of a sand bar, which obstructed the entrance, making ingress and egress a matter of some difficulty, and not without danger. Added to this drawback was the fact that the depth of water in some of the inner channels was not sufficient to permit of large shipping. The Federal Government, recognizing the importance of the harbor, appropriated sufficient funds for its improvement, the improvement consisting of dredging the channels in the bay and constructing jetties at its entrance, with the objects of fixing a permanent and direct channel and removing the obstruction of the sand bar. Dredging was commenced in 1887 and the work of building the jetties in 1889. The work was completed in 1894, a sum of nearly $2,250,000 having been expended in the operations.

The effect of the improvements has fully justified the claims advanced in support of their plans by the engineers. The jetties have forced and are maintaining, by the scouring action of the tides, a permanent channel, constantly deepening and broadening, through the sand bar, while the depth of water on the bar has increased from 8 to 10 feet, before the improvements commenced, to a minimum varying from 25 to 30 feet at extreme low water, affording sufficient draught to permit the passage of any vessel at any stage of the tide.

The channels in Humboldt bay are well defined, as an aid to their navigation, by a system of buoys and fixed lights. The main channel extends from the entrance, in a general northeasterly direction, passing the city front of Eureka and Indian island, to a point a little north of Eureka. Above, it subdivides into two branches, one on the west, the Mad river channel, the other the Arcata channel, extending northeasterly and terminating at the wharf of the town of Arcata. The main channel possesses, at its shallowest point, a depth of 14 feet at lower low water. Arcata channel exhibits, on a similar showing, a depth of 8 feet.

In the South Bay are two channels—one terminating at Southport wharf, and known as the Southport channel, the other the Eastern or Hookton channel.

Other shipping points in Humboldt county are Trinidad bay and Shelter cove. Trinidad bay lies up the coast about 20 miles north of Eureka, well sheltered from the north and west winds by a bold promontory, Trinidad head, and possessing a sufficient depth of water to accommodate the largest vessels.



Ocean Views at Points Along the Coast North of Eureka, in Humboldt County.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, MAY 20, 1905.

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The Week.

The hot wave to which allusion is made on the first page of this issue was hardly up to expectations, and a return to the cool northwest winds brought to the coast regions at least the temperature of the ocean rather than that of the interior. This is on the whole desirable, for a gentle approach to the heated term is rather better than a rush. Fruit prospects constitute the large part of current conversation in agricultural circles and the outlook is for a smaller available surplus for shipment than was talked of earlier in the season, and some fruit like cherries will make the smallest showing for several years. Pears also promise a small crop, and prunes in the largest districts not much more than half a crop. Apricots are better in amount, but growers are justified in being pretty stiff on values because, to a certain extent, apricots must fill the gap in other fruits. Peaches will, however, share this advantage and they are fortunately likely to make a good showing in total crop. It is rather early to talk of other fruits. The whole situation on fruits seems to be moderate supplies and conditions here and at the East, which should warrant good values to growers.

Speaking of values to growers, one is reminded that disclosures made before the Interstate Commerce Commission warrant all that has been claimed that, under past arrangements for transportation, growers have not had the returns which belonged to them. The rebate system had disclosed itself in exceedingly hideous form and, in general terms, it is shown that some parties drew down rebates amounting to about half of current rates and others less, so that even among shippers all sorts of discrimination has been practiced, while all discrimination was against the grower's interest. Extortionate freight rates are bad enough in embarassing our leading line of production, but rebates which put no two shippers upon exactly the same basis of cost for the same service are as abominable an institution as can be imagined—not to say anything of those who have personally profited on rebates on what was, it a certain sense, a public business. The only comfort we can find in the recent disclosures is that they are disclosed and are so full of injustice, not to say dishonesty, that public opinion will support the growers in their claim for fairer dealing. There seems also to be indications of a falling out of rogues, at which times the proverb says honest men get their due.

The Interstate Commerce Commission seems to be bringing clearly to light facts which the growers were powerless to discover for themselves. Dishonors seem to be easy between companies doing transportation, for the Commission's report shows that the citrus fruit traffic alone yielded one overland railway over one-twenty-sixth of its total freight revenue, and that the charge for this is about four times as much per ton as for all freight. The figures were $2.53 for average freight and $10 for each ton of citrus fruit, while a study of the revenues of another overland system for 1903 shows that the average for each ton of freight was $2.70, but that the amount obtained from the transportation of citrus fruit was $21 per ton. It is admitted that the cost of transporting the fruit is largely in excess of general freight, but this difference is far exceeded in the charges. While these extortionate charges are allowed to prevail, the wonder is not that the fruit shipping yields the growers so little, but that it yields anything at all. Manifestly it is not enough to say that present unprofitability is due to inadequate distribution; it seems to be primarily due to the fact that transportation gets so much more than its proper share of the gross value of the fruit as sold in distant markets.

Produce markets are generally stronger this week. There is little spot wheat offering and not much coming in. Speculative wheat is higher at the East, and here also. At Chicago July wheat is 3@4c higher than last week, and September somewhat less advanced. Here May wheat is still higher for spot than last week, and December wheat has advanced also. There is nothing new in charters, but they are stiffly held. Spot barley is firm and futures are higher, and December barley in more active demand. Some barley is coming from Oregon. Corn is strong and active for shipment. Beans are very firm, and Limas higher again. Bran and middlings are quiet and weak in tone. Choice hay is firm; other grades weak. Visible hay in the bay district is double that of last year at this date and much is of low grade. Beef and mutton are quiet; hogs steady and unchanged. Butter is firm, with an active speculative demand for storage. Cheese is weak. Eggs are a little firmer for storage. Poultry brings good prices, with slack demand and light receipt of better sizes. Old potatoes from other States are steadily held and new potatoes have improved. Both old and new onions are firmer. Asparagus is a little easier but all good stock goes quickly to canners. Oranges are unsettled, with large receipts, but rather good prices so far. Lemons quiet and unchanged. New peaches, apricots and apples are in. Berries are in good supply. Cherries are in light receipt, and choice selling high. It is near the end of the season in dried fruit and a cleaning up trade. Contracts for new apricots are reported at 6½ cents in 25-pound boxes. Dried peaches, new crop, are talked at 5½ to 7 cents for standard to fancy—Muirs about ½ cent ahead of Crawfords. Prunes are firm, and shipment continues. Growers are claiming a 3-cent basis for new crop, and some talk higher. Canners bid $45 per ton for choice Bartlett pears. Nuts are quiet. Honey shipments of 173 cases have gone by steamer to New York. The local supply is largely amber, for which demand is slack. Hops are held as before, with no buying here. Wool is the same, with the first shipment of 53,500 pounds gone to New York by sea. Buyers are still chasing wool in the country.

Californians will be widely interested in one of the last acts of the late Mrs. Stanford in connection with the University which bears the name of her son. This act provided for an endowment for the University library. This fund, which is estimated at $1,000,000, is to be raised from the proceeds of Mrs. Stanford's private jewels, consisting of diamonds, rubies, emeralds and other precious stones. The jewels are to be sold and the proceeds paid into a fund and be preserved intact, and the income be used exclusively for the purchase of books, etc. This fund is to be known as the Jewel Fund. It has been the wont of women from the beginning of the world to give their jewels for the promotion of causes which laid near their hearts—causes sometimes good, sometimes bad. The jewels of the Hebrews built the tabernacle; the jewels of Isabella discovered America, etc. Mrs. Stanford enrolls herself among women who made good use of jewels and honors her memory thereby. It is interesting to know that the income from this endowment will be sufficient to purchase about 30,000 new volumes for the library each year. What a grand thing is a library thus to be constantly extended!

We own to much pleasure in the appointment of Gen. N. P. Chipman to the chief justiceship of the new appellate court of California. We notice that the lawyers also like it, judging from their remarks at his induction to the position, which speak of eminent public services and lofty motives. If we had been present and invited to join in the felicitation we should have spoken of General Chipman's services to California industry as one of the most significant features of his distinguished life in this State. He was drawn into horticulture, perhaps, because of a passion for the noble art and the delight of seeing things grow, but it was not long before he learned to promote agriculture from patriotic motives, and from this he naturally passed to continuous effort during a score of years for the general industrial advancement of the State. He mastered many of the details of industry in order that he might be more intelligently promotive, and the information thus secured will be of constant value to him in his judicial life, which we hope may be long, as we know it will be valuable to the State. It will be grand to gain as high judge a man who not only knows law, but knows life and its efforts and interests so well.

QUERIES AND REPLIES.

Seedling or Grafted Walnuts.

To THE EDITOR:—In your issue of April 29th I noticed Mr. Bogue's query on "Seedling or Grafted Walnuts," with a request from you for me to reply; was I not so very busy right now I might do it, but the proposition of seedlings being superior to grafted trees is so absurd that I wondered why you didn't set it at rest yourself at once. The nursery firm alluded to by Mr. Bogue is that of Barbier Freres of Orleans, in the Loire district, the only nursery in France, to my knowledge, dealing in seedling walnuts, and the worst of it is that they buy their seed in Dordogne, because walnuts are cheap in that department, while the grafted walnuts of Isere are so high. In the department of Isere all the trees are grafted, the nuts selling at from 6 to 8 cents per pound, while in the department of Dordogne, where they plant but seedling trees, the nuts sell at 2 to 4 cents per pound. It is that inferior grade from Dordogne that is mixed at Marseilles or New York with the superior grade from Isere, enabling the importer to place the Grenoble or Mayette nuts from Isere on the New York market at a price permitting competition with nuts from this State.—FELIX GILLET, Nevada City.

The foregoing is taken from a personal letter from Mr. Gillet and not intended by him for publication. It is, however, so directly to the point that we take the liberty of printing it in anticipation of the fuller account of the nut industry of the Pacific coast, which we hope to receive from Mr. Gillet when he can find time for it. As for "setting at rest the question of seedling or grafted walnuts" ourselves, we can only say that the question is setting itself at rest as rapidly as could be expected, and recent plantings in all parts of the State include a continually increasing percentage of grafted trees. We shall in time arrive at a great product of grafted varieties, though naturally where the seedling nut is so good in California and a great product of seedling nuts which is very profitable, and selling quite as high as the best French prices which Mr. Gillet quotes, it is natural that the change in the whole product will be slow. It would not be wise for us nor fair to the growers, to declare inferiority in a crop which sells so well. However, we are clear in our own mind that grafting the walnut, to secure a uniform product of the best nuts as well as to gain early bearing and perhaps smaller trees with heavy fruiting, is as rational a process as grafting other fruit trees, though the contrast between the seedling and grafted walnut may not be so great as with some other fruits, and this fact will be more and more clearly recognized as years go on. We shall wait with keen interest Mr. Gillet's discussion of the whole subject of nut growing.

Soil for Forcing Tomatoes.

To THE EDITOR:—What fertilizers should I use for forcing tomato plants? I am thinking of an enterprise in that line.—READER, Glendora.

You must be very careful about fertilizing tomatoes, because the forcing of excessive leaf growth

operates against the setting of the fruit, and you must be careful about the application of water for the same reason. Probably a strictly good sandy loam, such as you can find in your own locality, would be quite good enough for tomato growing, and we should make an experiment without the use of fertilizers, resorting to them afterwards if it seemed necessary to stimulate the growth.

Cattle Wanted.

To the Editor:—Can you give me the address of those who have Red Polled Angus cattle? They were written up in your paper some time ago. Also, do you know of any firm that has Devon bulls for sale?—Reader, Colusa.

Allow us to intimate in the kindest possible manner two things: First, the Pacific Rural Press if preserved (and the issues placed in a binder or merely stitched into a volume with an awl and piece of twine) constitutes a carefully indexed encyclopedia of California agriculture, always up to date. Second, it is the duty of every reader to study the advertisements. They are the business end of the farm, and tell readers just where they can get just what they ought to to have. Now, if you should apply both of these suggestions, you would be able to determine more quickly than you could write the above letter that Red Polled cattle are bred by Frank A. Mecham of Petaluma and by C. A. Stow of Stockton. There are no "Red Polled Angus"—the Polled Angus is black. Our advertisements tell you also that the Oakwood Park Farm at Danville breeds Devon cattle. And, then, when you write to our advertisers, tell them you find their announcement in the Pacific Rural Press. It makes them feel good to think they were so wise as to choose a good medium for advertising—and it does not hurt us. Please do not take this sort of an answer to your question as a personal affront; we have been waiting to get in a little lecture like this for the good of the cause.

Cutting and Carrying Alfalfa.

To the Editor:—I am just starting in with a dairy herd of thirty-six cows. I have about seventy acres of alfalfa. I propose to feed it to my cows in the barn. What is the best method of feeding? How many times a day should the cows be fed? What proportion of the day should they be allowed to run loose in the yard? What is the best up-to-date book on California dairying?—Stanislaus, Modesto.

We are frank enough to confess that in the glorious climate of Stanislaus we would not think of barning the cows long enough for them to eat all they ought to. When you take your bed out under a tree or upon the veranda for a large part of the year, what do you think of shutting a cow up in the barn? Dairy barns are fine things for shelter during stormy weather, and for sake of cleanliness it is better to milk in a well-kept barn than in a muddy or dusty corral, but for the chief part of the life of the cow she should be in fresh air with shade to run under during the middle of the day. In the night, except when cold or rainy, she is better off under the stars. We should feed the alfalfa in racks in the yard and not in the barn, and feed a little grain or middlings at milking time, both to attract the cows to their stanchions at that time and to balance the ration which needs starchy matter to balance the excess of protein in the alfalfa. We should then keep the cows out of doors as much as possible during good weather. There is no book especially treating of California dairying.

Almonds and Walnuts.

To the Editor:—Will land that produces good almond crops also produce as good English walnuts in this locality? The walnuts would be either Santa Rosa softshell or Prœparturiens varieties. And would planting them 24 feet apart be too close for heavy crops?—Grower, Woodland.

The same land might produce them both provided it is suited to the walnut, but it might do well with almonds but not with walnuts. The walnut is more strenuous about its moisture supply than the almond, consequently there are some uplands rather shallow and dry which will give good almonds but not walnuts. On the other hand there are lower lands which are too frosty for the almond which the walnut, because of its later start in the season, might succeed upon. The walnut is a slower coach than the almond and is not so restless under high winter temperatures. Mainly for this reason the almond has been practically abandoned in some parts of southern California where the walnut is a large crop. Twenty-four feet is too close for an English walnut, though it is fairly good for an almond. If you conclude that the situation favors both nuts you can alternate them at 20 feet and cut out the almonds when the walnuts need more room.

Easy Weed Killing.

To the Editor:—I desire to learn, through the columns of your valuable paper, your opinion as to the best method to be followed in destroying the wild grasses and weeds that are native to the lands in the Sacramento valley. I have heard that they can be killed by the use of coal oil, if applied when the grass is young. Is that true? Is there anything known to science that will kill these grasses which does not ruin the soil for the growth of anything else?—Enquirer, Willows.

We have never been satisfied with any evidence we have seen of satisfactory work with electricity or coal oil in weed killing. The electricity method never got beyond the brilliant claim made for it. We do not know that it was ever tried. Coal oil will kill plants and the soil also, for a time, depending upon how light the soil is. Some weeds are killed by bluestone water, made weak enough so that the grass is not injured. It should be stronger to kill grass than some broad-leaved weeds. But, on the whole, we know of nothing better for good weed killing than cultivation or by covering the ground by a dense growth, like alfalfa, which will smother out many weeks. The real easy way to kill weeds has not been found yet. When Adam was driven out of Eden, he was told that weed killing was a hard job, and his sons have not found out yet that the early information could be successfully disputed.

Separators and Cleanliness.

To the Editor:—I have heard it claimed by several people who are proprietors of creameries and agents for separators that a separator removes all dirt and foul matter, resulting from uncleanly habits in milking, from the cream, leaving it pure. I am doubtful of such results, and I would like the opinion of some one who knows.—Alma Walls, Sonoma county.

It is not true. A cream separator is the closest strainer ever invented and it does take from the milk a vast amount of filth; but it can not free the milk from decay germs nor can it remove ill flavors which come from filthy handling and surroundings. The separator is, therefore, a fine milk cleanser; but to claim that it makes milk pure is to do the worst thing that can be done for the separator, because it is apt to be taken as an excuse for carelessness and therefore increase the chances of losing part of the advantage of the separator by trusting it to do what it actually can not do. If the separator could purify the milk, all the exhortations to care and cleanliness and all the laws to secure them would be foolishness. Do not bring the separator into disrepute by claiming too much for it.

Making a Colt of Calf Timber.

To the Editor:—What should I do with a young colt that has lost its mother? Am feeding it on cow's milk. Should anything be added to the milk to make it more fit for the colt? How soon could I shut off the milk supply, or begin to?—Subscriber, Penryn.

Mare's milk is the poorest of the whole line of domestic animals, consequently you must be careful about overfeeding a colt with cow's milk, which is nearly twice as rich in cheesy matter and fat as his natural supply. Mare's milk is, however, much richer in sugar than cow's milk, but it is not necessary to add sugar because the excess of fat in cow's milk will serve the same purpose, providing the colt does not get a colic with it. We cannot tell how long you will have to feed. Give the colt a chance to learn to eat a little dry bran and to nibble grass or alfalfa and taper off the milk supply as observation and judgment indicate.

Piemelon Seeds Not Bad for Pigs.

To the Editor:—Referring to an item in your issue of April 29, "Pigs and Melon Seeds," I give you my experience of several years feeding pigs the citron or piemelons. I used to grow tons of those melons on my eight-acre vineyard, and, after picking my second-crop grapes, I turned my hogs loose into the vineyard and for two or three months fed practically nothing but the few grapes that were left and the melons, also flavoring the drinking water with middlings to keep the pigs in the habit of coming at my call. I can say that I never found a pig injured by the melons, which were left for the pigs to help themselves to, and they will invariably eat all the seeds first. I was told that melons would prevent sows from getting with pig, or, if they did so, the pigs would be born without hair. I can only say I made most money on my melon-fed pigs.—Swine Grower, Fresno.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 15, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Cold and cloudy weather continued during the first of the week, with light rain, and was followed by clear weather and higher temperature. A severe thunderstorm, accompanied by hail and rain, occurred in the vicinity of Sacramento on the 11th, damaging grain, hay and fruit to some extent, in a very limited area. The rains caused very little damage in other sections, and the heavy rains of the preceding week were less injurious than expected. Considerable hay had been cut and was damaged, but late sown wheat was greatly benefitted and is now in excellent condition. The observer at Red Bluff reports that the yields of grain, hay and all fruit except pears and prunes, will be the heaviest in ten years. Rust has appeared in a few wheat fields, but the warm, clear weather is having a beneficial effect. Hops are improving rapidly and vegetables are making good growth. Vineyards are looking well, but will have to be cultivated again. Citrus fruits are in good condition.

Coast and Bay Sections.

The weather was generally cool and cloudy at the beginning of the week and warm and clear at the close. Light rain fell in all sections, but caused no damage, and the injury by rain at the close of the preceding week was not as serious as expected. Some grain was lodged and cut hay was damaged. Light frosts occurred on the 9th in Lake, Humboldt and Contra Costa counties, but no damage resulted. Crop prospects are better than at this time last week, and the outlook is good for a heavy yield of hay and at least an average yield of grain in most places. Hops are in fair condition, but backward, and will be improved by the warm weather. Late sown grain was greatly benefited by recent rains. Sugar beets, beans and vegetables are doing well. Green feed is plentiful. Peaches and prunes are improving and fair yields are now expected. The first Royal apricots were shipped from Vacaville during the week. Vineyards are in excellent condition. The cherry crop is exceedingly light.

San Joaquin Valley.

The weather was generally cloudy and cool the first part of the week and clear and warm during the last part. The rain and high wind of the previous week did considerable damage to the hay that was cut, and also damaged wheat in some places. Hay making is progressing rapidly in all sections and a large crop will be harvested. Wheat is badly damaged by rust in some localities. Oats and barley are filling well. Apricots and peaches are very uneven crops, some orchards full, others light. Prunes will be a fair crop; olives and grapes promising and thrifty. Green feed is plentiful and stock are healthy and in excellent condition.

Southern California.

Generally fair weather prevailed during the week, with higher temperature at the close, and conditions were quite favorable for all crops. The rain at the close of the preceding week caused considerable damage to cut hay and some injury to grain and fruit, but benefited late sown wheat and pasturage. It is now reported that the yield of grain will not be as heavy as expected, owing to light early rains and continuous heavy rains shortly after seeding. Haying is progressing, with excellent results. The weather has been too cool for walnuts and corn. Potatoes are doing well and are free from blight. It is reported that cut worms have attacked orange orchards in San Bernardino county and are causing great damage to the green fruit. Vineyards and deciduous fruits are in good condition.

Eureka Summary.—Weather cool, but favorable. Rain the fore part of the week softened the soil and greatly benefited gardens and crops. Fruit crop abundant; hay above the average; oats and barley very promising.

Los Angeles Summary.—Rain, followed by wind, not very beneficial. Some sections report cut worms doing considerable damage to crops. Grapes are setting for a large crop.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 17, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the week.	Minimum Temperature for the week.
Eureka	.02	32 43	64.26	44 32	64	46
Red Bluff	.14	33.52	31.48	25 20	90	42
Sacramento	.04	21.83	16 87	19.45	86	46
San Francisco	T	23 45	20 59	22 32	85	48
Fresno	T	12 08	8 04	8 49	96	42
Independence	.00	3 83	2.57	3 63	88	36
San Luis Obispo	.00	23.50	16 95	19 86	90	42
Los Angeles	.00	19 46	8 72	16 16	92	44
San Diego	.00	14.24	4.30	8 09	78	52
Yuma	.00	8 69	1 00	2 87	104	50

FORESTRY.

Forest Restoration in Southern California.

From an address by Mr. T. P. Lukens of Pasadena, at Redlands.

With our long rainless season—often eight consecutive months—all growth on the mountains becomes very dry and fires have wrought great damage. Forests have been supplanted with chaparral, and in time over much of the area chaparral is supplanted with a growth of herbaceous plants with little root power. As a result, many perennial streams that formerly flowed to the sea have ceased flowing entirely, except in form of floods immediately after a storm.

Southern California has a population of 384,000 and an assessed valuation of $324,000,000. There could hardly be any limit to our growth in population and wealth if our water supply could be increased, to accomplish which would require, first, for temporary relief, the building of storage reservoirs. But for a lasting and permanent water supply measures must be speedily adopted to arrest the destruction of our watersheds by fire and to plant over the denuded areas.

Once Persia was the most fertile land of Asia, well watered and richly wooded. Once the Sahara was the granary of Africa and of Europe. To-day they are barren sands, brought about by the irrational use of the forests. The fearful famines in India are traceable to a large extent directly to forest destruction, and many other parts of the world, once rich in growing crops, have become desolate, barren regions from the destruction of the forests.

A few years ago the United States Geological Survey selected a watershed in the State of Washington and one in Arizona, each covering an area of 142 square miles, their purpose being to ascertain the comparative value of forested and non-forested areas in the regulating of stream flow. The area in Washington—Cedar Creek—was completely forested, and the annual precipitation was from 93 to 150 inches, and the maximum run-off from Cedar Creek was 6321 cubic feet per second, while the maximum run-off from Queen creek in Arizona, with a precipitation of but 15 inches annually, was 9000 cubic feet per second.

During the year of 1900 the United States Bureau of Forestry carried on an investigation in the San Bernardino forest reserve in southern California to ascertain the relation of the run-off to precipitation on forested and non-forested areas, on which a record had been kept for a number of years, of the rainfall and the run-off. It was found that the effects of the forests in decreasing surface flow was enormous, compared with the non-forested one.

With these facts clearly established, showing the incalculable benefit of trees on our mountains, a determined effort is being made to reclothe them, and for several years experiments have been carried on to determine the most economical plan to pursue. The economic question must be considered, for to plant several million acres of rough mountains is a work of great magnitude. As a preliminary to planting, as part of the plan and must be reckoned in the expense, is the preparation of the areas to be planted so as to exclude fires, or, at least, to reduce the danger to the minimum. That can be done by clearing the ridges of brush so as to confine the fire to narrow limits and enable men to reach points of advantage to fight the fire.

The experiments carried on thus far in planting trees and seeds in the mountains have been under the most unfavorable climatic conditions. Southern California has just passed through a series of very dry years, during which time the natural reproduction has been precluded, not only of trees in the forested areas, but of chaparral as well.

Seeds were planted in the open ground—some in ground without preparation; but in most cases beds were prepared by digging a space a foot or more across and a foot deep, on which a number of seeds were planted. This plan promised well; but the long season, ten months, without rain, left but few trees. Our experiments with transplanting trees promised to be a better plan. We are growing in nursery, and at two years old will plant on the mountains with confidence of success.

There is no doubt but that in very wet seasons sowing seed will be successful, as nature reforests. For this purpose we have a good stock of seed on hand for such an occasion.

To determine upon the species of trees to plant has necessitated a careful study of Nature's plan, with which we keep in as close touch as possible. Coniferous trees form the base of which by far the greater number will be used, planting them in their indigenous zones, and as far as possible in soil and conditions of their choosing. Along water courses we are succeeding in growing ash and walnut trees. Seeds of indigenous conifers "and of a few species of exotics in an experimental way" are grown under lath houses, and at the end of the first year's growth transplanted in the open ground to harden, and at two or three years old are to be planted on the mountains.

Our nursery is located in the mountains at a medium altitude that propagation may be more certain, and the trees having been grown in the same character of soil they are to be finally planted in, and are more certain to succeed. Where the tree is to be planted a small space is loosened with a mattock, in which the tree is planted and mulched. The planting must be done during the rainy season, which is between November and April, that the trees may become anchored before dry weather sets in. The roots of our indigenous conifers in southern California make a wonderful growth, as they do in other semi-arid regions.

The big cone spruce, which predominates in the middle timber zone on our mountains, has especial root strength. Trees but 6 inches high and of but one summer's growth are often found with a tap root 30 to 40 inches deep. Old trees have been found to have a root system equal in bulk and in many cases greater than its growth above ground. In a few small areas where these trees have escaped destruction the precipitation of rain is held in reserve by the innumerable root dams and the accumulation on the surface of litter from the foliage and twigs of the trees.

As I have said before, the assessed valuation of property in southern California is $34,000,000. If we were to say that it would cost $22,000,000 to completely restore tree growth on our mountains and properly care for them and prevent fires for fifty years, it would without consideration be declared impossible on account of expense, but when it is looked at from a business standpoint it is of less than 7% of present valuation over a period of fifty years.

It is the natural and proper thing for the United States Government to take the lead in this work; to make the investigations along scientific lines and establish working plans, as well as supervise the work; and in this the Government is doing well. But where so much is needed as in southern California, the people directly benefited, yes, whose very existence depends upon the work, must raise money to carry it on if it is to be accomplished.

For equitable climate, richness of soil, scenic beauty, southern California is unsurpassed. The only thing that can limit the growth in wealth and population is the supply of water, without which little can be accomplished.

The Primer of Forestry Completed.

As a source of positive information about what forestry really is, and to spread a knowledge of its methods, a book has been prepared by Mr. Gifford Pinchot, Forester of the United States Department of Agriculture and Chief of the Bureau of Forestry, entitled "A Primer of Forestry," which is published in two parts. Part I was issued in 1899, and has passed through several editions, reaching a circulation of about 225,000 copies. It deals with the life of a single tree, with trees as they exist in a forest, with the life of a forest, and with the enemies of the forest.

Part II of the Primer has just been published. It deals with "Practical Forestry," the purpose of which is defined as "to make the forest render its best service to man in such a way as to increase rather than to diminish its usefulness in the future." In other words it means "both the use and the preservation of the forest."

The Primer as a whole will be read with profit by every one who takes a practical interest in the forests and who wishes to see them protected and properly developed as one of the greatest resources of the nation. It can be had free by application to the Department of Agriculture at Washington, D. C.

THE POULTRY YARD.

Effect of Climatic Conditions on Fertility of Eggs.

To the Editor:—That the weather has a very marked effect on fowls, regarding the fertility of the eggs, is a well known fact, and is often the cause when other reasons are assigned for this undesirable condition.

One reads repeatedly in the columns of the poultry press and journals devoting space to these matters cautions as to feeding and exercise and general management to insure the fertility of eggs; but there is, I believe, as much dependent upon the weather as any one thing in this connection.

While fertile eggs are to be had at all times of year in greater or less numbers, the natural season for hatching in the spring of the year, after danger of severe cold is past, seems to be known to the hen, and, if the season be one of unusual conditions, there is bound to be interruptions in the fertility not experienced in seasons of uniformly good weather.

This has been a season particularly noticeable the country over, as the writer has had letters from Mexico to Washington asking the reason for low per cent of fertility, one party reporting also, but eleven fertile eggs from a prominent Eastern breeder among fifty eggs incubated.

While proper feed and care are necessary, conditions to insure the hatchability of eggs, a spell of inclement weather will lower the average fertility in a very marked degree, and where some individual hens are inclined to lay a larger number of fertiles than the general run of the flock despite the weather conditions, the greater number are affected as stated.

Poultry breeders have accomplished much for the improvement of flocks, but it is impossible for them to rear flocks that shall be uniformly heavy layers of fertile eggs at a season when conditions for their rearing a brood without human attention are not such as to insure the safe rearing of their chicks were they to have stolen a nest away from the protection of buildings. Much can be and is done to insure fertility by the housing of birds and furnishing well filled scratching sheds, thus in a measure guarding the birds from outside weather that might lower the average fertility; but this is only the condition on the plants of extensive breeders who look to early hatching. Where eggs are to be incubated during the stormy season, they should be gathered on such days as are pleasant, and the bird fairly comfortable outside and not, by force of the cold, compelled to turn every moment of their lives to the seeking of food to keep up the bodily heat, as the females that are indifferent to the attention of the male birds are in many cases those that require frequent visits from the male bird to insure the fertility of their eggs—in some cases this is every day—while others lay strongly fertile eggs for seven to ten days after the male birds have been taken from the pens.

The males, too, feel the changes as well as their mates, as cold, wet days see them less active and inclined to perch in some sheltered spot rather than to be running about. Make summer conditions as much as possible, but the hen will bring forth the best chicks at the time she thinks it best for them to come out, be it February or June, and the time is determined by the number hatched where the eggs are properly cared for.

W. S. Sullivan.

Agnew, Cal.

THE IRRIGATOR.

Excessive Irrigation.

By James Mills of South Riverside, at the Water Congress recently held in Los Angeles under the auspices of the University Department of Extension in Agriculture.

Let me say in opening that I believe from actual experience that there are many more orchards ruined by over-irrigation than by under-irrigation; that there are more men who ruin their prospects by pouring water on and off their lands than there are those who do it by irrigating their lands.

As I understand irrigation, it is placing water in the soil for the development of the orchard, for the taking up in solution of the elements of the fertilizers that you put in, or that nature's God put in the soil, and feeding it through the root system to the tree, thus depositing in the laboratory of the tree the foodstuffs that were taken up and carried through nature's avenues to their places of deposit.

Now the theory I would like to give you is this: That if you pour water over your soil, you are damaging your soil, damaging your prospects and damaging your bank account. I will tell you what we have done and what we have accomplished, and I will begin with one piece of land, sandy and somewhat sterile, which has not had but one irrigation each year for the last three years, and that irrigation given in order to plant the cover crop. When I took the office I am now occupying under W. J Fraser, who is manager of that great property, this block of twenty acres I found took more water than we could possibly afford to give it. I gave it 600 inches of water the first irrigation. I came to the conclusion that, if it needed that water each irrigation, we did not want the land in our business, because it was a great loss and a great failure. I dug into the soil 10 feet everywhere through the twenty-acre tract. I took the soil to my home and put it under the microscope and I found that I had building stones in miniature and not soil. All of the humus had been burned out or washed out or eaten out—it was gone. I saw that I must first place humus in the soil.

I took animal fertilizers to start with, and on top of them I put my cover crop of cowpeas, following that with a cover crop of the Canadian field peas—the common field peas. I turned them under in the winter. I caught and held the rains, and I pledge you my word that I hadn't to irrigate that piece of land until the last of October the following fall. I did not leave it without carefully examining the soil every month. I dug a hole 10 feet deep, 6 feet long, sometimes longer, and 18 inches wide, that I might get in there and examine the soil as to the content of moisture in it. I also took these samples of soil to my office and examined them there. I watched the trees. There is the index—the tree. The tree will tell you when it needs water, and there is no necessity to give it before then, because you will damage its prospects if you do. I watched that, I say, every month, and prohibited the irrigators from putting the water on until the first of October. It was a rebudded orchard that had been sweets. It was budded over to Navels. The buds were three years old. We took 4500 loose

boxes off that place with its one irrigation, and it didn't need the irrigation at that time, but the peas did, because I wanted to put another cover crop in.

The next year we irrigated it in July to give it another cover crop, and we took 10,000 boxes of fruit off of it. I give you this as an illustration that the pouring of water on that piece of ground every thirty days would not have been economy—it would have been a dead loss. I say to you, for the sake of economy in irrigation, don't irrigate your tree until you know it needs the irrigation.

Water should not leave your soil. You can irrigate your soil without wasting water. There are thousands who will tell you that you can, for they have seen it done—they do it themselves.

We irrigate one piece of land not oftener than eight weeks—very seldom within nine and ten weeks—in the hottest time of the year. Right alongside of it, right across the line, within 10 feet of that orchard, there is another orchard irrigated every thirty days, and within ten days after every irrigation it is needing another drink, and needs it badly. Why? On these lands over which I preside we cultivate, and cultivate, and cultivate. We get that dust mulch that holds down the water. The other man does not cultivate; he scratches the top of the soil—the way many of you do. Many of you—for I have been over your lands all through the State. You scratch the top of the soil. What happens? Every capillary tube that you ought to have shattered and held down with your dust blanket is in contact with the surface of the soil, and the greatest power in earth or in Heaven, outside of the Almighty himself, the great sun that reigns over the meridian, draws every drop of the water that you put into the soil out again and evaporates it into the atmosphere, whereas every drop of it should have gone into your root system, up through your tree into your leaf, and there, by transpiration, sent off into the atmosphere. Why put water into the soil if you are going to allow the sun, with its tremendous power, to suck it up and send it off into the atmosphere? I tell you, gentlemen, that you have got to use your cultivator. It is water, it is fertilizer, it is fruit, it is success, and without it is failure.

I say to you, gentlemen, that you don't need to use 1 inch to five acres on any tree or any orchard that is not twelve to fifteen years old. Take our young trees. You plant a young orchard—a fine piece of soil, friable, capable of the very finest results if you use your plow and your cover crops. You put it in. You spread your water through five or six furrows, shallow, and you run your water through them. What good does it do that tree? Not a whit. Now, if in placing that young tree, you would dig your hole deep and put it in, you don't need more than one furrow during the first two years of its life, and you will be giving it a root system down deep into the earth, so that it can in its after years hold its head up heavenward, because it has got its roots down toward the center of the earth. You ought to get a root system 3 or 4 feet down. You can get it. You can get it deep, for I have followed my roots 6 or 7 feet down. And there is fertilizer there; there is humus there, and there is a vast reservoir of subsoil moisture that will sustain you and your tree in the years of drouth such as we have had the last few years. For economy of water, then, I say to you, in planting your trees strike their roots deep; keep your water near it. The very best orchardists do this. Not up against it, because that would spoil your tree, but 18 inches or so from it, so that you can cultivate it with a walking cultivator, and let it sink down into the soil. That will strike out laterally and will give the tree ample room to spread its roots. Don't have your tree spread its roots all over the surface, so that they are within 10 or 12 inches, and when you come to plow you will cut its roots off. The roots have no right to be on the surface. They ought to be where, if you plow 9 inches, you will not cut your leading, feeding roots. Three years ago I dug into a piece of land—a heavy soil. I could not get down 18 inches. It was as dry as the hub of that old cart out there. The next year I went down I got 6 feet; last year I got down 12 feet. I cut a trench 16 feet long, 12 feet wide, and drove a trench underneath the tree. We cut out unmercifully with a disk plow; left nothing that a plow could catch; went down and down and down, and those places which needed irrigation every three weeks before only need it now every eight or nine or ten weeks apart. We can get along with less than 1 inch to five acres, and we can actually get along with less than that for years to come, especially where we have any young orchard. I have found this—that the fewer times I irrigate the better it is for the tree, the better it is for the company, the better it is for our bank account. I say to you that the less water, in reason, you give your orchard the better. Give it the cultivator. Where you used to irrigate twice and cultivate once, cultivate six times, if you have got the time; but get that mulch that holds the water down and feeds it to the tree. Don't let it be sucked up to the surface and be deposited in the atmosphere, where it does no good to you or to the tree.

How shall you get it down deep? Get a deep furrow into your soil—not a surface furrow, but a deep furrow, and as few as possible.

A delegate—How deep?

Mr. Mills—Nine, ten inches. Ride on your cultivator. Load it down. When you irrigate, don't run the water off your soil. At the lower end get your cross-furrows, and when your water comes down there take care of it. Strike it out into your cross-furrows; hold it there. If you have more water than your men can handle, go up to the flume and cut it down, whether you are entitled to it or not. Let it go back into the ditch and flow down that ditch to your neighbor, who needs it worse than you do if it is running off your land.

Now that you have got your land irrigated, close your furrows quickly. Don't leave it twenty-four, thirty-six or forty-eight hours until you can get your cultivator in upon it. Close them at once. A July sun will take 35% of the water that you put in the soil out in one day. Close your furrow and get your ground mulched. Just as soon, then, as the water has equalized itself in the soil—and it will equalize itself if you will hold it—get in and cultivate. If two horses can't do it, put four on, and if four can't do it put six on. And put your cultivator down 8 or 9 inches and cultivate again. Every time you cultivate you mellow the soil; you let the air in; it brings the oxygen; it feeds the nitrifying bacteria and increases them, and, as they increase, just in that proportion does your tree get fertilizer, and it will not without it. The cultivator will economize in fertilizer; the cultivator will economize in water; the cultivator will economize in money; it will save your money and pile it up for you.

THE FIELD.

Watermelon Growing in Los Angeles County.

A carefully written article in the Los Angeles Cultivator gives information which will be of interest to California melon growers everywhere. The region described is along the foothills of the Burbank-Glendale district of the San Fernando valley. In this district the soil is a loose, gravelly or sandy loam and holds its moisture throughout the hottest weather, with a minimum of tillage. Not only do they have a warm soil, but the location—a high mesa, sloping toward the south—is in itself particularly favorable for the growing of crops needing great warmth during the early spring months.

Preparation of the Soil.—The land is plowed as soon as possible after the first rains of winter. In case the grower has time it is plowed twice; but, if plowed only once, it is done as deeply as possible. From then until planting time it is kept free from weeds and handled in the manner best calculated to conserve the soil moisture, though in many soils no work of this sort is necessary. However, for best results in planting, the land should be very smooth, so that frequent harrowing, especially after each rain, helps to control the weeds and sets the proper "plane" on the field.

When the planting season arrives—and this varies somewhat—the land is "marked off" for planting. Some use a hand marker, others do it by team work, while still others "set out" the field with stakes. Three different checks for distances seem to be in use—12x12 feet, 10x14 feet and 8x16 feet. Each of these schemes have adherents who claim some particular advantage for their own way of doing things. In the case of the 8x16 check, it allows the field to be cultivated one way for some time after the other checks are full of vines.

Varieties and Planting.—The sort most generally grown is the well known Chilean White. This melon has a thin rind, is also the best shipper, being very firm and crisp even after a considerable journey. Others somewhat sparingly grown are Georgia Rattlesnake, or Gypsy, and Kleckley Sweets. Last year a few of the Rattlesnakes found a ready market at good prices on account of their great size; but had they been plenty the price would have fallen rapidly, as those grown here do not compare in quality with the Chilean.

Quite a difference exists in the number of seeds planted in each hill; some put in but four or five, while others, who save their own seeds, use seven to fifteen seeds. The growers who use the greater number contend that their seeds cost them little. All are not planted at same depth, so that if the weather be too wet or too dry it will still be about right for some of the seeds to grow vigorously. The most experienced growers have found that seed grown in their neighborhood produces better melons than that brought in from elsewhere, and this has led several growers to make a business of saving the best seeds they have, which are readily disposed of to neighbors for 75 cents to $1 per pound.

When all is ready for planting, the seeds are soaked for about twelve hours in warm water, and now most growers also sprout them. This is generally accomplished by digging through a pile of warm manure, down to the ground, spreading the seeds in sacks so they are about 1 inch deep and covering with warm manure, leaving them so until sprouted, when they are immediately planted. Those who are short of manure sometimes build a fire on the ground, to warm the soil, scrape away the ashes and bury the seeds in the warm earth, afterward covering with manure to prevent escape of heat. One of the largest growers is this year sprouting his seeds by placing them in Mason fruit jars and setting these jars in warm water. The time necessary to sprout these depends upon the temperature of the water, but thirty-six hours is about the average.

All planting is done by hand, using a hoe to lift the earth and to cover. Seeds should not be planted below the "flat" of the land and many growers turn back-furrows through the field and plant on these. The planter scrapes away the top soil (a half inch or so) that is dry, by a single move of the hoe, raises the next half inch of soil, puts in his seeds, allows the soil to drop over them; then replaces the dry soil and gives the "hill" a tap with the flat of the hoe to firm the soil. As the season progresses, the weather becomes warmer so that later planting may be correspondingly deeper.

Cultivation and Care.—Subsequent care consists mainly of keeping the weeds down and producing a dust mulch to conserve the soil moisture; around the hills this work has to be done (when plants are small) by hand. After planting, the soil sometimes becomes so caked that the seeds can hardly push their way through and in such cases it is best to rake over each hill with a common garden rake. The general cultivation is done, of course, with harrows and cultivators, the latter often with a combination of teeth and weed knives.

One other item of care is usually put in practice, that of "turning" the vines toward the center, so as to compact the vine—make it dense—so that the melons will not be liable to sunburn. The latter trouble is quite common some years and seriously detracts from the market value of the melon. During some seasons whole fields, on certain days, may be found where the melons have a well-marked "burnt" brown spot on the sunny side. Succeeding days the weather may be more favorable and the melons will be "free."

Pests and Diseases.—Perhaps the most serious problem which confronts the owner of a small tract who is "all in melons," is the control of the melon blight. This does not seem to be easy to check, even with frequent sprayings, and growers now find that the best way is to "stand from under." This means that a piece of land may be put into melons for two years, after which the grower must seek "green fields and pastures new" for his melons and devote the present "patch" to other crops. Even if one is able to combat the blight, or his land is free from it, only a few years will elapse before he will have to change his crops. Watermelons do not "pull" on the soil quite so heavily as most field crops, but the largest single grower in this district predicts that while the acreage is about the same as last year, the crop will be perceptibly lighter, as nearly all the present fields also bore melons in 1904.

Of all the insect pests of the melon none other is of such serious import as the pesky little aphids. A closer study of the life history of these little pests is beginning to bear fruit in many localities, yet even the knowledge thus gained will not kill aphids when they appear. They are first in evidence about the time of the appearance of the first character leaf and the duration of their stay is largely determined by the weather. Sometimes they disappear after the first real hot spell and in other seasons will remain so late that occasionally vines and even full-grown melons will be covered with their "honey-dew." Rainy weather seems to knock them out by washing the vines clear of them, but in general, damp, foggy weather is the kind they glory in. Of course, a few hot, dry days soon disposes of them. So, too, if the weather is favorable, can the melon "outgrow" these pests. The greatest damage is done to young plants and if the melons get a vigorous start before these insects appear, and the weather thereafter be favorable, the vines do not seem to mind the attack, for they grow too fast to have time to notice a few "little bugs."

In the Burbank-Glendale section melon aphis has been a serious menace each year, so that the grower has always to be ready for them. During the season of their greatest activity it is necessary to spray every five to ten days, according to the weather. Many kinds of sprays and "cure-alls" have been tried and most of them found effective. It does not seem to be hard to kill the aphids already on the plant but new hordes usually appear as soon as the spray is dry, so that "constant vigilance is the price of melons."

The green and the striped "squash" bugs bother a little, but are taken no note of by the growers generally. Cut worms take a few plants but are nowhere serious. One grower seems to be menaced this year by chinch bugs, but it is too early to judge how serious a pest they will be. Squirrels are very destructive, a warren of four or five being able to entirely clean one-half to one acre in a single day. They only work, however, on the seeds and after the plants are started are no further trouble, but they are so energetic during this short season that every melon grower should see that no squirrels live near his land.

Still another pest, an insect, proves a "villian of the deepest dye," and he is called "Jerusalem cricket," or "Child of the Earth." This fellow often eats the plant while in the two-leaved stage and even

invades the mature melon by eating a hole through the rind from the underside. There seems no way to combat this pest except by killing all you find.

Marketing.—The first melons from this district are usually marketed from the fifth to the twenty-fifth of July and the first comers find a ready market at fancy prices. When the market has steadied down the melons are sold in three sizes, by the dozen. Large sizes bring $1.50-$3.50, mediums from 50c-$1.50, and smalls from 20c-40c.

The bulk of the melon crop is handled by the local dealers. Some growers have regular customers, others sell to commission merchants; still others sell at the public market. The Burbank-Glendale district has an organization of fifteen to twenty members known as the Burbank Melon Shippers' Association. This organization intends to keep the local market from being glutted by finding a market for carload lots at other and near-by points. Their traveling salesmen will doubtless travel from Santa Barbara to San Diego in search of markets for their surplus. In this way they expect to maintain profitable prices.

So many small growers abound in this district that anything like the exact acreage would be hard to compute, but the season of 1905 will probably find melons marketed from 400 to 600 acres. Besides the watermelons, these growers have a total of 50 to 60 acres in muskmelons. Of these, the most popular sorts are Rocky Ford, Extra Early Hackensack, Large Hackensack (or Turk's Cap), and Columbia. These are given the same general culture as watermelons. The distance apart, of hills, are 6x6 feet, to 9x9 feet.

Summer Fallow in Eastern Washington.

As is well understood, the question of crop rotation does not at once become popular in a new country, says a writer for Orange Judd Farmer. Consequently it is not surprising that in a State like Washington, where the single crop system largely prevails, methods of crop rotation should receive little attention. The Washington State Agricultural College has been advocating such systems in various parts of the State as might appear to be best adapted to the different conditions found. Throughout eastern and southeastern Washington, and extending far into the central part of the State, the principal crop is wheat, and few wheat farmers are inclined to look favorably on any system of rotation. Throughout most of the region, owing to shortness of season and to the large area in cultivation, as well as to other important conditions, it has been found advisable to attempt to secure but a single crop from two years.

The summer fallow system is very largely practiced, partly to conserve soil moisture, partly to keep down foreign growth, but largely for the reason that there is not sufficient time after the fall rains set in to prepare the ground for fall seeding. This system of summer fallow to some extent meets the requirements of a system of crop rotation, but as the ground is totally unoccupied throughout each alternate year, it is believed that some other system of crop rotation would be more profitable. Efforts are being made to induce farmers to undertake the cultivation of corn, sugar beets or such other crops as would in themselves yield profitably and also leave the ground in suitable condititition for fall seeding. One of the worst objections to this is the fact that it takes at least one year to get a full grown stand of any except legumes. As clover also when once sown will remain in the soil, yielding a profitable crop for several successive seasons, it has not been considered advisable to count on it as forming part of crop rotation. The whole question of rotation in the eastern part of the State is yet unsettled and will probably await interest until the single crop system begins to lose favor among the farmers.

Agricultural Review.

Colusa.

Flood Destroys One Thousand Acres of Grain.—Colusa special to Sacramento Bee: Owing to the high south winds Saturday and Sunday, the levees in the lower tule lands were taxed to the utmost and could hardly be held intact. A section of the old levee at Howell Point, now owned by bank people, was unable to stand the great pressure upon it, and went out some time during Sunday night. As a result, about 1000 acres of the finest grain land in the country is inundated. The crop on this land is now a total loss. The land was farmed by about six or eight parties.

Glenn.

Fighting Grasshoppers.—Willows Journal, May 12: There are large numbers of grasshoppers in the country west of Orland which are reported as doing considerable damage to fruit trees and alfalfa. At Citrona Park, near here, the employes have been forced to wage a fight against the pests to prevent them injuring the trees, of which a large number were planted this spring. The heavy rain does not seem to have injured the pests at all.

Kings.

Early Fruit.—Hanford Sentinel, May 11: Constable H. M. Bernstein brought in to-day a dish of loganberries, mammoth blackberries and red raspberries, all excellent. His bushes are loaded and his table has been supplied for some days with loganberries.

Mendocino.

Outlook for Hops.—Ukiah Republican-Press, May 12: The hop market is reported quiet with not much doing. Some contracts have been made in Sonoma county recently at from 15½ to 16½ cents for the coming crop. Dealers, however, appear not to be anxious to contract at over 15 or 16 cents, as they are anxious to see what the present season will bring forth. Some of the 1904 crop of Sacramento was sold this week bringing 22 cents and one Sonoma batch 23 cents. The growers in this valley report that the cold weather has greatly retarded the growth of the vines and that in most fields they have commenced training. The vines are usually well up the poles at this time.

San Diego.

Grain Harvesting at Imperial.—The first grain of the season was delivered at the Herbert warehouse of the Desert Milling Co. on Friday, May 5. It was barley. This is believed to be the first grain of the new crop to be harvested in the State. Grain is maturing rapidly, and many harvesting outfits are starting in work. Yield is estimated at from 300,000 to 500,000 sacks.

San Joaquin.

Figuring on New Grain.—Stockton Independent, May 13: Now that indications point to a large grain crop throughout the San Joaquin valley, the local dealers are beginning to figure on the price of new wheat and barley. There is a wide range when the market is discussed as some do not consider that new shipping wheat will be in demand for over $1.25, while others place it at about $1.30. Milling grades can not be used for months to come, but they are set for $1.40. It is a matter of opinion, and a well known grain man yesterday stated that the coming year the exporters will not purchase any shipping wheat unless they see their way clear to make a profit. Freights are going to cute quite a figure this season. The ship owners who have a union are holding out for 25s and they have declared that they will not accept grain at a less rate, but there is liable to be some cutting by reason of the French ships securing a bonus. Up to date only one ship has been chartered to load wheat and she will not accept grain until August. At this time a year ago three vessels were on the list. The disengaged list is also very light. The quantity of wheat and barley produced this season in California will not have much effect on fixing the prices as there is almost certain to be a good demand and the farmers will receive more than the average figures for their grain. They have been securing higher prices the past two years than usually paid, and while there may be a slightly lower market, they can make a good profit. The cool, cloudy weather and rain have caused some of the early grain to become lodged, but it is believed that the damage as a whole has not been very heavy.

Almond Buyers.—Lodi Sentinel: Almond buyers are around making some purchases. Mrs. C. P. Allison has sold her crop from ten acres, on the trees, for $500.

San Mateo.

Family of Wildcats.—The Coast Advocate: When Dr. and Mrs. Blackburn came up from Pescadero Tuesday they were accompanied by a trio of wild kittens. The youngsters were captured in the woods near Pescadero by surveyors. The mother wildcat was killed at the time, so her babies were consigned to the care of an old house tabby, whose litter was taken from her. The cat took kindly to the creatures of the wild and is rearing them with all the care of a real mother.

Ripe Huckleberries.—Coast Advocate, May 13: Billy Wyman, who resides back in the Coast range, was in town this week. He tells of gathering a gallon bucketful of ripe huckleberries the other day, which would be accepted as incredulous were it not for the fact that this has been a most unusual season.

Santa Cruz.

Horse Beans.—Watsonville Pajaronian: The horse bean has not been grown in this valley for more than two years in commercial quantities. Two years ago a carload was marketed and last season about a carload and a half were sent out. Last season the farmers of Pajaro valley devoted something like fifty acres to this crop, and the splendid financial returns prompted other tillers of the soil to plant horse beans, the result being that a little more than 750 acres in the valley are devoted to this product. In the fertile soil of Pajaro valley horse beans grow luxuriantly, returning to the grower from one and a half tons to two tons an acre. Last year growers received from 1¼ cent a pound to 1½ cent, which prices mean a net profit to the grower of about $20 a ton. The demand for this product is principally from the East, where it is used extensively as an advantageous ingredient of ground coffee, chiccory, etc. From present indications the 750 acres of land devoted this season in Pajaro valley to the growing of horse beans should average a ton and a half to the acre, which would mean a total of 1125 tons. At 1¼ cent a pound the crop would be worth $33,750 gross, or a net profit to the growers of $22,500.

Solano.

First Peach Shipment.—Vacaville special to Sacramento Bee, May 13: Two boxes of peaches, the first of the season of 1905, were shipped East yesterday. They were of the Daisy May variety, and were consigned through the Earl Fruit Co. One box goes to New York and the other to Philadelphia. The fruit came from Mrs. M. C. Smith's ranch, and they were well matured and highly colored.

Sonoma.

Homer Pigeons With a History.—Petaluma Argus: L. C. Byce and his two sons have recently fitted up one of the finest pigeon lofts to be found and secured a number of the most noted long-distance homing pigeons of the United States and Belgium, consisting of twenty-five pairs with records for flying all distances of 100, 200, 300, 400, 500 and up to 613 miles in a single day. To the above collection has just been added the most noted bird in the world and his mate. This bird is named Gov. Francis and his registration band number is P. 17084. He is the winner of the great Homer series of races at the St. Louis World's Fair and was awarded the first grand prize, making the best average speed in all the races from 25 miles to 200 miles—eight races in all. The hardihood and endurance of the bird can be judged from the fact that the pick of more lofts in the United States and Canada—200 in all—was represented in these races than in any others ever flown in the United States before. Besides, in one race during a severe storm 130 birds were lost, Gov. Francis being one of the number to come through all right.

Sutter.

A 400-Acre Fig Orchard.—Yuba City Farmer: Articles of incorporation of the Sutter Fig Co. were filed with the Secretary of State and in the County Clerk's office here this week. When the plans of the company are carried out it will mean much for this section, as the promoters of the enterprise intend to purchase 400 acres of land from B. F. Walton, southwest of Yuba City, and plant it this coming winter to Smyrna fig trees. The capital stock of the company is divided into 600 shares of a par value of $300 each, making the total capitalization $180,000. Those whose names appear on the articles of incorporation are B. F. Walton, with twenty shares; L. A. Walton, F. S. Walton, S. V. Walton and Harry L. Holcomb with three shares each. We understand that the stock is now on the market and a large portion already taken. The proposition is that a share of $300 represents one acre of land, and that this sum will carry the expense of the land and the planting and care of trees to the time of bearing, there being no assessments.

Effective Work Spraying Mustard.—Yuba City Farmer: The experiment spraying of mustard and wild radish at the wheat culture station on the Walton tract has proven very effectual, and most of these troublesome weeds killed without injuring the grain. Prof. L. A. Fitz, who has charge of the station, is now cultivating the corn and expects to secure some choice samples of new grain there. He has planted 400 varieties of wheat and twenty of corn.

Peaches and Pears Bring Good Money.—Independent: Judging by the way buyers are now scouring the country for green fruit, especially peaches, the growers are going to be able to get their own figures for their fruit. Many contracts have already been closed for good canning peaches and the prices range from $30 to $35 per ton. Some growers are holding out for $40 and expect to get the price. Pears are scarce and command a very good price. One orchardist in Sutter county, it is stated, has accepted $45, or a little more, per ton for his Bartlett pears.

Very Few Cherries.—The Royal Ann and Centennial varieties of cherries have been practically ruined by the recent rain storms. The Black Tartarians were injured only slightly. The cherry crop is very light in all the local orchards. Giblin Bros. report not a fourth of their usual yield. Charles Wilbur reports that he will not have more than three tons where ordinarily he would have had between twelve and seventeen tons. Gus Bremer has but a sprinkling and J. B. Wilkie says his crop is much lighter than usual. Cherries are retailing in the local markets at 7c per pound and indications are that they will get no cheaper.

Profitable Pigeons.—Independent: Roy Smith, son of ex-Supervisor W. H. Smith, living near Fairview, has a pigeon roost containing about 1000 birds, mostly Homers, from which he receives a monthly income of $60 from the sale of the squabs. Mr. Smith ships once a week to the city markets and finds ready sale for every bird he can send in. He started his roost from several pairs of thoroughbred Homers which he received from the East about two years ago. He has since added to the number of old birds by other purchases. Mr. Smith has made a thorough study of the business, and says it pays better than raising wheat.

Tehama.

Sheep Going to the Mountains.—Corning Observer, May 4: Sheep raisers all over the valley are preparing to send their flocks to the summer ranges in the mountains. Some have already started and others will be ready in a few days. The sheep are dipped before starting as a preventive for scab.

New Way to Preserve Hay.—Corning News-Era: J. B. Beaumont is cutting and preserving hay in an entirely new and somewhat novel manner, for this section. He is using self-binding reapers and the hay is bound in bundles instead of the usual way. The hay is cured in the bundle and the expense of baling is done away with. By this method a farmer is enabled to stack his hay in a more economical and better way than was possible heretofore.

Yolo.

Coyotes Get in Their Work.—F. P. Hambleton has moved his hogs from over the creek to this side. He found, on rounding them up, that coyotes and wildcats had killed seventy of his fine pigs. The boys were so busy shearing sheep that they had no time to attend to the traps properly.

Yuba.

Cherry Picking.—Marysville Appeal, May 11: It is the expectation of the Bidwell orchard to commence picking cherries Monday next, should the weather continue favorable for ripening. Agents for the Canners' Association are on the ground ready to receive the crop and prepare it for shipment to distant points, as no attempt will be made to can any of this fruit at the local plant this season. The crop will be light this year, though not so extremely so as has been stated, but nothing like the ordinary yield. While the indications during the flowering period were that an immense crop would follow, the rains and cold weather had a serious effect upon it.

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A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*
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The Sharples Co. Chicago, Ill. P. M. Sharples West Chester, Pa.

THE DAIRY.

Silage in Place of Grain for Dairy Cows.

California dairymen do not feed much grain or millstuffs, but still it is of much local interest to know how silage can take the place of expensive rations. In a recent bulletin of the Ohio Station, C. G. Williams says: "The prevailing high prices of grain feeds, in the face of very moderate prices for dairy products, have reduced the dairyman's profit to a point where it is a question with him whether he can make the cow pay for the large grain ration he been accustomed to feed. If he can dispense with half the grain he has been feeding without materially reducing his production of milk and butter fat, his chances for profit have increased."

During the winter and spring of 1904 the Ohio Station conducted an experiment with ten dairy cows, representing five different breeds, "to determine what the effect of feeding more silage than is usually fed by dairymen, with a corresponding reduction in the grain portion of the ration, might have upon the production of milk, butter fat, gain in live weight, cost of the ration, and consequent profit. * * *

"The general plan of the experiment was to compare two rations which should carry as nearly as possible the same amount of dry matter and nutrients. In one ration these nutrients were to be derived largely from roughage, mainly silage; in the other ration no silage was to be fed, and as little roughage as seemed wise, the bulk of the nutrients being derived from concentrates." The two rations fed carried practically the same amount of dry matter. In one over 50% of this dry matter was derived from silage and less than 18% was derived from grain. In the other over 57% of the dry matter was derived from grain, no silage being fed.

"The silage used in this test was a mixture of 1 ton of soy beans and cowpeas to 2½ tons of silage corn. There were nearly twice as many soy beans in the mixture as cowpeas. The silage corn was very low in dry matter, owing to an unfavorable season." The silage as fed contained 18.63% of dry matter, 2.36% of protein, 4.68% of crude fiber, 0.92% of fat, and 9.36% of nitrogen-free extract, being richer in protein and poorer in carbohydrates than average corn silage on account of the admixture of soy beans and cowpeas.

The figures used in estimating the cost of the different rations were as follows: Silage 10 cents per hundredweight, hay 30 cents, stover 20 cents, wheat bran 93.7 cents, corn meal $1, oil meal $1.16¼, butter 25½ cents per pound, and skim milk 15 cents per hundredweight.

The value placed upon a ton of silage is based upon that of the corn and stover grown upon similar ground and marketed as such. For instance, upon ground on which we average 50 bushels of shelled corn per acre we grow 15 tons or better of silage corn. The 15 tons of silage corn, therefore, may be said to be worth the value of the 50 bushels of corn plus the 1¼ tons of stover which will go with it. (We find the expense of putting an acre of corn into the silo to be practically the same as shocking, husking, and cribbing the grain and hauling off the stover.) We have here charged 51 cents per bushel for corn on the average for the period covered by the test and $4 per ton for stover. This will make the average for silage corn worth $30.50, or $2.03 per ton.

The price credited for butter fat is based upon the wholesale price of Elgin butter, as quoted in current publications. The customary one-sixth is added to the fat for the butter equivalent. * * * Eighty per cent of the total milk yield is assumed to be returned as skim milk.

The cows fed the silage ration produced 96.7 pounds of milk and 5.08 pounds of butter fat per hundred pounds of dry matter; those fed the grain ration produced 81.3 pounds of milk and 3.9 pounds of butter fat.

The cost of feed per hundred pounds of milk was $0.687 with the silage ration and $1.055 with the grain ration. The cost of feed per pound of butter fat was 13.1 cents with the silage ration and 22.1 cents with the grain ration. The average net profit per cow per month (over cost of feed) was $5.864 with the silver ration and $2.465 with the grain ration.

Comparing the average daily product of each cow for the entire test with her average daily product for the month previous to the change in ration—or the first month of their test in the case of two cows—the cows fed the silage ration shrank 2.84% in milk and gained 1.89% in butter fat production. The cows fed the grain ration shrank 9.11% in milk and 14.18% in butter fat production. Upon the conclusion of the experiment, each lot of cows was found to have gained in live weight—the silage fed cows an average of 47 pounds per head; the grain fed cows an average of 57 pounds per head.

The facts reported seem to justify the conclusion that silage can be made to take the place of a considerable portion of the grain ration. It is believed that by growing more of the feeds rich in protein—clover, alfalfa, soy beans, cowpeas, field peas, vetches—and ensiling them, or feeding them as hay, it will be possible to further reduce the amount of grain fed.

HORTICULTURE.

Distribution of Parasites.

TO THE EDITOR:—Will you please notify fruit growers that require parasitic insects (Comys fusca), for the brown apricot scale infesting prune and other deciduous trees; also Scutellista cyanea for black scale on olive, citrus and other trees, or Vedalia cardinalis for the cottony cushion scale, to send their application to Edward M. Ehrhorn, Deputy State Horticultural Commissioner, Room 2, Ferry Building, San Francisco, Cal.

Distribution will commence the latter part of May. Applicants should send specimen of scale in a light pasteboard box by mail. This will insure their receiving the proper parasites.

Distribution of the Ephialtes carbonarius, the new parasite for the codlin moth, is over for this season, but applicants will be supplied next September, when we expect to propagate them on a large scale. All parties in terested in apple and pear culture are requested to save the codlin worms taken from the bands around the trees and forward them to this department to be used in the work of propagation.

All beneficial insects are furnished free of charge by this department.

ELLWOOD COOPER.
Commissioner of Horticulture.

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THE DEERE IMPLEMENT CO., Agents, San Francisco, Cal.

Army Worms on Oranges.

According to a report in the San Bernardino Sun, army worms have never been so numerous in that valley as they are now. They have not only attacked ordinary vegetation, such as is always the case, but even rose bushes have not escaped, and they are doing considerable damage to the orange orchards.

In the Merrifield orchard they have eaten the small, green oranges, in some places taking them off at the bud, in others merely biting into them, so to speak, but enough to spoil the fruit so that it could never develop.

Not only so, but it develops that they like ripe oranges. Horticultural Commissioner Pease produced large oranges in which the worms had burrowed through the skin, evidently preferring the pulp of the fruit, for inside the skin they were honeycombing the meat, and numbers of them could be seen at work inside of a single sample of fruit. This at once suggested an experiment to Mr. Pease, and he directed the Merrifields to bring wagon loads of culls and lay on the ground under the trees, in the hope that the worms will devote themselves to the discarded oranges until sprayers can be put to work to make the trees impossible for them to live.

Power sprayers were sent for and Paris green prescribed, to be used in such quantities as will clean the trees and make them no longer attractive to worms that may come afterward.

This was the first orchard that has reported such a condition, but from the prevalence of the pests Mr. Pease fears that with continued cool weather similar reports may come from all parts of the valley, and that the danger may be great.

Paris green is recommended by all the authorities as effective in killing the worms, although there are people who declare that they have used it this year and were not able to appreciably diminish the supply of the pests. Mr. Pease expects to gather reports from all parts of the valley as speedily as possible, to ascertain if they have the same conditions as have been found in the neighborhood of Colton.

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The Home Circle.

Ballad of Patience.

It doesn't do to take offense
  At each imaginary slight.
A man will show a heap more sense
  If he can rein his temper tight;
Of course, he may be in the right:
  His patience may be sorely tried;
But then there is no use to fight—
  Just let it slide.

You may see through a slim pretence
  That's made with clear, unclouded sight;
You may have solid evidence
  That black is black and white is white,
But then you need not spread your light
  Of intellect too far and wide.
Don't contradict the blatherskite—
  Just let it slide.

We learn by long experience
  That nothing goes to suit us quite;
We meet with scorn and insolence
  And silly slander, wrong and spite.
We sometimes rise up in our might
  And vow we will not be decried;
But barking dogs will seldom bite—
  Just let it slide.

L'ENVOI.

If some one has been impolite
  Enough your efforts to deride,
Don't let it spoil your appetite—
  Just let it slide. —Chicago News.

Her New Gown.

Priscilla Battles was engaged to young Ostrander and Priscilla's contemporaries were jealous. Comments varied. Some included the significant words "roped in." Some predicted dismally concerning Ted Ostrander as a husband, though as a bachelor he was an immense success. With the mothers he was "one of those nice Ostranders." Fathers approved of him as a "rising young man." Brothers declared that he "faced a touch like a hero." The young women thought he was "perfectly adorable."

As a bachelor, unquestionably young Ostrander hit it off, but as a husband—well, Priscilla was welcome to him, that was all. It is so comfortable at times to believe that the grapes are sour.

Ostrander's sisters were to give Priscilla a reception.

"I suppose I shall have to have a new gown," said Priscilla to Ostrander when they were talking it over.

"Not," replied he, "that you wouldn't beat the whole party a mile in anything you might wear, but it is just the idea of something new, I suppose."

"What do you think would be nice?" asked Priscilla.

On that point Ostrander wasn't quite so clear. He was ready with the generalization "handsome." He also talked vaguely of bias things and whangdoodles, but failed to touch upon such incidentals as materials, color and style of making.

A new gown is always at least a matter of weight. On this occasion it amounted even to a strategic manœuvre. There were such a lot of considerations. Jane, Ostrander's oldest sister, would disapprove of anything too elaborate, as Jane knew that the Battleses could not afford $6 trimming. Lucy, the youngest sister, would be disappointed if it were not elaborate enough. This was a good chance to look her worst and propitiate the girls who didn't catch Ostrander. It was also an opportunity to look her best before those who had not yet seen her. Should she wear her favorite pink, when the decorations would be orange? Or should she sacrifice becomingness to the general color scheme?

For days Priscilla tossed among these questions. Her decision was a triumph. She must have something simple because of Lucy. It could not be too conspicuously becoming because of the girls who did not catch Ostrander; yet it must look distinctly well because of the strangers who would be there. Pink was given over because of the decorations, but cream and light green had been admired on her before.

Then Priscilla began collecting samples—went into the business, as it were There were fifty-three shades and textures in cream and light tan. The variations of the light green were beyond belief. Priscilla lost some sleep over samples, but finally struggled to a choice between one of the greens and one of the tans. These two put up a brave fight. In the morning she got up firm, not to be shaken. She would take the green. At breakfast Mrs. Battles thought the tan perhaps a shade more becoming. Very well, she would have the tan. In the middle of the morning some one else wondered how she could think of anything else but the green. Priscilla wondered, too. At luncheon tan was again in the ascendant. Her final order went: "I have decided on the gr—no, tan. Let me see them both once more, please."

Tan finally got it, after the green had been measured off and cut.

If Priscilla lost some sleep over samples she lost considerably more over the making. To be simple, to be elegant, to be not too becoming yet very becoming—there was the problem. Over the sleeves alone Priscilla lay awake one whole night. By the time the trimmings were bought the doctor said that only rest and quiet would ward off a serious nervous illness. The last days before the party Priscilla spent in bed, with intermittent gettings up to be fitted.

Complete, the gown had cost $50, doctors not included, also days and nights of the strenuous life.

* * * * * *

She wore it to the reception. It was, of course, commented upon. Priscilla herself overheard the following comments:

"She certainly never ought to wear tan. It's horribly unbecoming."

"And it looked so dead in all that orange. Why didn't she wear something to harmonize with the decorations?"

"Did you ever see such flimsy, cheap-looking goods?"

"Still, my dear, that is the latest thing. I priced it yesterday—$4 a yard."

"You don't say so! I wonder what Jane Ostrander thinks of such extravagance?"

"I call it execrable taste myself, when the Battleses are no better off."

"Oh, I suppose she got something expensive to impress strangers."

"Well, she didn't succeed. I was frightfully disappointed in her. Ted Ostrander must be out of his head."

"Yes, she lacks elegance and tone, doesn't she?"

"I don't care!" wept Priscilla that evening. "There wasn't a girl among them who hadn't tried to catch him herself!"—Chicago News.

A Women May Be Independent.

If a woman can make preserves, pickles or pound cake, and secure purchasers; if she can knit shawls; sweaters and slumber-shoes; if she can raise poultry or Angora cats; if she can, in brief, send out from her home any product whatever that people want and will pay for, she need not be worried. She will lie down at night tired and complacent, and, while retaining her grasp on the home in its essentials, she will not feel that she is a pensioner on her husband's bounty. No wife should ever acknowledge that she feels herself this; no wife ever is this in any true sense. A wife is neither mendicant nor pensioner, but, unfortunately, many wives acutely feel, and silently resent, the blundering attitude of otherwise good husbands in this commonplace particular. Would that the good men's eyes were opened!—Margaret E. Sangster.

Quick Bread Making.

Joy is in store for the good housewife in a report which comes from Nottingham, England. Consul Mahan describes a quick bread making process recently introduced, by which it is claimed that bread can be made much more quickly than by the procedure usually employed—in three and one-half or four hours, against ten or twelve—and that a given weight of flour yields a larger weight of bread—five or six loaves more per sack of flour. The materials used are the same as in ordinary bread making, without preliminary mashes or "bread improvers," and the better results claimed are attributed in the main to the supersession of common rough-and-ready empirical methods by systematic and scientific regulation of the temperature at which the fermentation is carried on, so that the fermentative process is rendered at once more rapid and more complete. A further advantage of bread made in this way is stated to be that it has remarkable keeping qualities, loaves over a week old still being sweet and retaining their moisture, and consequently their weight, to an unusual extent.

Why Do We Use Condiments?

While it cannot be said that the use of condiments in the daily dietary has found a complete chemical or physiological explanation, yet it is, says the Lancet, of course, broadly known that in many cases they are essential constituents, for they improve the flavor of more or less tasteless foods, and, indeed, promote digestion by exciting the flow of the various digestive secretions. Flavor is undoubtedly a great promoter of digestive success. It is not quite clear, however, why, for example, a person takes mustard with ham, pork or beef and not with mutton; vinegar with salad or lobster and not with ham or other foods. In generalizing, however, it would appear that condiments are chosen to accompany those foods which are less digestible or which are richer than others. Mutton, for example, is more digestible than beef, pork or duck, and it is to these three that mustard is generally added. Vinegar, again, is known to soften the hard fiber of both meat and vegetables; hence it probably renders such foods as crab, lobster, salmon, salads, red cabbage and walnuts less tough and more digestible. Vinegar in dressing and sauces probably has a similar action.

As a rule, the increased amount of soluble or extractive matters in a food is in direct relation to its digestibility and nourishing value, not that the extractive principles are in themselves nourishing, but because they are appetizing and promote the flow of digestive juices. To the man with robust appetite the presence of tasty extractives or the use of condiments is probably superfluous. Bread and cheese and beer form a most enjoyable meal after brisk exercise in the open country air, but during sedentary occupation very little relish is experienced for such a simple repast. Hunger is the best sauce, but failing hunger the appetite must be coaxed, and herein lies the true uses of sauces, condiments and other aids.

The abuse of condiments has its attendant evils. The excessive use of vinegar is calculated to lead to an anæmic condition, while it has an unfavorable influence on gout. Some silly women take vinegar to produce a pale complexion. Similarly, a free indulgence in pepper or mustard, which are both irritants, is likely to have an irritating effect upon the organs of secretion. On the other hand, their moderate indulgence promotes digestion, for they act as carminatives. Highly savory dishes are incompatible with good digestion and the prevailing preference for liberally garnished "messes" instead of plain, simple food is to be deplored. The habit of partaking of highly seasoned food accounts very largely for the decline in the consumption of light elegant wines of the claret type. The bouquet and flavor of a delicate wine are completely spoiled by rich tasting sauces or spices.

Salt is perhaps the commonest condiment of all and yet man practically stands alone among animals as a regular consumer of it in the more or less pure state and as a definite adjunct to his food. Salt is present in most foods, but the amount in the majority of cases would not appear to satisfy man's needs or he would not instinctively add more. Moreover, salt may not necessarily exist in the free state of foods of natural origin, but may be loosely combined with organic constituents. There can be little doubt that salt plays a greater part than that of a mere condiment in the body, for it possesses solvent powers which, besides "drawing out" the flavor of food, facilitate the absorption more particularly of proteids and thus increase tissue metabolism. The pleasures of feeding would be very decidedly diminished if salt and condiments were banished from our tables. It is noteworthy, moreover, that among condiments, most of them, while flavoring the digestive processes, are antiseptic, so that their action tends to counteract any disposition to undesirable fermentation.

The East Indian Wife.

Was there ever the world over a like conception of the married state? Chief priestess of her husband, whom to serve is her religion and her delight. One with him in the economy of the household, certainly; but moving in a plane far below him for all other purposes—religious, mental, social; gentle and adoring, but incapable of participation in the larger interests of his life, incapable of participation even in his games.

"We are richer," "we are poorer"—that the bounds of a joint intelligence. To please his mother, whose chief handmaiden she is in things domestic, and to bring him a son—these her two ambitions; but the latter chiefly, for to the mother of a son will a husband forgive even wrangles in the houseplace.

Oh the worshippings of gods, the consultings of oracles, the stealthy working of charms to this end! And if the gods prove gracious, proud indeed is the little lady—a creature of good omen, a being to be welcomed at feasts, to be invoked by the childless. No longer is she a failure: even widowhood would leave her with the chastened halo of that son who is worthy to offer sacrifices.

Such an attitude of mind may seem irrational to the alien, but it should be remembered that the whole idea of marriage in the East revolves simply on the conception of life; a community of interests, companionship—these never enter into the general calculation. Nor is this strange when one reflects on how large a place life must fill in the thoughts of a people believing in reincarnation. As a life-bringer alone has a woman her place in the scheme of Hindoo philosophy. For life and religion are inextricablet in he loom of time; and woman never did have a Vedic value.

Look at her, then, our little Hindoo type of wifehood—gentle, submissive, a perfect house mistress, moving softly about the women's domain, "the inside." Up with the dawn, she bathes and worships; worships her own special godling and tends her sacred plant, then draws from some ancestral well the water for the household needs, scorning no domestic duty. A picture good to see is she on these occasions—her pretty red draperies girt out of harm's way while she heaves aloft the shortening rope with subtle grace. Mark the poise of head, the turn of slender wrist, as the first shafts of daylight strike brilliance from mystic amulet or jeweled armlet. Further domesticities occupy the day, with perchance a little gossip in the house-place ere the evening meal brings fresh need for a skillful house-mother. She waits upon her husband while he feeds; silent in his presence with downcast eyes—to look upon him in the face were bold indeed. Perhaps he talks to her of village or family interests; she would not think it strange did he not.—Cornelia Sorabji, in The Nineteenth Century.

A Good Farmer.

One day in the summer of 1857 Abraham Lincoln was sitting in his office when he was visited by one of his neighbors, an excellent farmer, but one inclined to increase the size of his crops even after harvesting. He had given on this particular morning a skillfully padded account of the hay he had put in. "I've been cutting hay, too," remarked Mr. Lincoln. "Why, Abe, are you farming?" "Yes." "What do you raise?" "Just hay." "Good crop this year?" "Excellent." "How many tons?" "Well, I don't know just how many tons, Simpson, but my men stacked all they could outdoors, and then stored the rest in the barn."

Domestic Hints.

Princeton Tea Cake.—Mix together a cup of sugar, two eggs and two tablespoonfuls of butter; add a teaspoonful of orange extract and a cup of milk, in which is dissolved a teaspoonful of soda; then stir in two cups of flour, with two scant teaspoonfuls of cream of tartar, and beat the mixture until as light as possible.

Potato Cream Bake.—Boil the potatoes until just done, peel and chop into bits the size of large peas. Have ready a rather thick white sauce, mix a heaping cup of the chopped potatoes with a cup of the sauce, well seasoned; pour into a baking dish, cover the top with fresh buttered cracker crumbs and bake in a hot oven for fifteen minutes.

Cheese Spears.—Four ounces of flour, one-half pint of cold water, one ounce of butter, two eggs, pepper, salt and cayenne; three ounces of grated cheese. Dry the flour in a cold oven, then sift. Put the water and butter in a pan and let boil while adding the flour. Stir well, then take from the fire, and when nearly cold add the eggs, then the cheese. Have ready some boiling fat and drop teaspoonfuls of the mixture into it. Fry a golden brown and drain on paper.

Tomato and Pineapple Salad.—Select tomatoes of a uniform size, scald quickly and peel. Cut a slice off the stem end, and scoop out the pulp, being careful not to break the wall; salt each tomato inside, invert on a plate, and chill thoroughly. Cut sliced pineapple in ¼ inch cubes, and blanch and shred almonds cut into narrow strips lengthwise, and toss the pineapple and nuts together; the proportion should be one-third nuts and two-thirds pineapple. Mix well with mayonnaise dressing, and refill the tomato cups. Star mayonnaise on top of each cup, and nestle each in a nest of heart lettuce leaves.

Stuffed Ham.—A medium-sized sugar-cured ham is boiled in the usual manner, says What to Eat. When done, either slash with a knife, making long, slanting slashes, or puncture to the bone with the carving steel. Prepare a stuffing of bread crumbs seasoned with prepared mustard until the crumbs are quite yellow. Moisten with the water in which the ham was boiled. Mix with the dressing one onion chopped fine, a few sprays of parsley, minced, and plenty of pepper, black or red. Press this dressing in the slashes or punctures, and glaze the ham over with white of egg. Take a large handful of crumbs, some as large as a grain of corn, and others larger; spread these over the top of the ham and moisten them with cream. Place in the oven long enough for the crumbs to brown, which will be long enough also to let the stuffing get hot. Garnish the dish with parsley or fine bunches of watercress.

Hints to Housekeepers.

A pinch of salt added to the whites of eggs will make them whip up easier.

All oak furniture looks nice if rubbed with beeswax and turpentine. Put on thinly and polish with a brush.

Cream or milk that has turned but is not soured may be made sweet by stirring into it one teaspoonful of carbonate of magnesia to each quart of milk.

A charming way of serving ices at a child's party is to line common flower pots, 2½ inches in diameter at the top, with paraffine paper, afterwards filling nearly full with ice cream. Sprinkle with grated sweet chocolate to represent earth, and stick a flower in the top.

A rice kettle to boil rice perfectly has an inner basket with a very close mesh. The rice washed in several waters is placed in the basket, and this is plunged into boiling water, where the rice cooks without danger of burning. When the water boils away, the rice still cooks in the steam.

For freckles, tan, or sunburn, occasioned by exposure in riding or outdoor exercise, our ancestresses used a healing lotion made very simply and easily. The white of an egg was shaken to a froth with a small quantity of lemon juice. To a tumblerful of this mixture a teaspoonful of borax was added. This acted as a whitening wash, which allayed the burning irritation caused by the wind.

Warning That Is Timely.

The Portland Travelers' Aid Association warns unskilled and unemployed young women against coming to Portland to seek positions simply because it is exposition year. It is the purpose to set forth the fact that such field of labor will be greatly overcrowded. Such warning is timely, and the hope is that it will prove efficacious.

It is very natural that many young women should be attracted to an exposition city, in the belief that remunerative employment is to be had merely for the asking. This is a mistaken notion, nevertheless—dangerously so, in fact, as that young woman may realize whose ambitious mission results in failure, and who finds herself without employment, means, friends or protection in a city like Portland, with a great exposition in full swing.

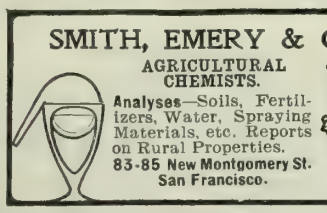


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Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
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The Markets.

San Francisco Produce Report.

San Francisco, May 17, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 84¼@ 83¼	78⅞@ 78
Thursday	83⅜@ 84⅞	78¼@ 79¼
Friday	84¼@ 85⅜	78¼@ 79¼
Saturday	85⅜@ 87⅝	79¼@ 80⅝
Monday	88 @ 86⅞	81 @ 79⅜
Tuesday	88⅞@ 87½	81⅞@ 80⅝

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	47 @46½	46⅝@46⅜
Thursday	46⅞@47⅛	46¾@47⅛
Friday	46¾@47⅜	46⅝@47⅛
Saturday	47 @47½	46¾@47
Monday	47⅛@48	46⅞@47⅛
Tuesday	48⅜@47⅞	48 @47½

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	——@——	$1 28⅜@1 28½
Friday	——@——	1 28⅜@1 28¾
Saturday	——@——	1 30 @1 29½
Monday	$1 49 @1 48	1 29⅝@1 31¼
Tuesday	1 47½@1 48½	1 31 @1 30
Wednesday	——@——	1 29¾@1 29⅞

Wheat.

Buying in the spot market in this center has continued light, necessarily so on account of the limited offerings, and is mainly for domestic feed purposes. That there is very little California wheat remaining is shown by the fact that much the larger portion of recent receipts has been from points outside the State, principally from Oregon and Washington. Selling prices for spot wheat have not changed materially here, but there has been a generally firmer tone to the market, in sympathy with improvement East and abroad. December wheat averaged higher than previous week, but is still at low levels, and it would not be surprising to see some of the shorts scorched on this option. That wheat will be as low next December as it has been lately sold for on paper in the gambling market is very improbable, but the inside manipulators may keep the price of the December option below the actual market, just as they have been lately keeping the price of May wheat above the spot market. There are evidently some outsiders who are short on the May option.

California Milling	$1 50	@1 55
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 40	@1 42½
Oregon Club	1 40	@1 47½

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.45½@1.49.
December, 1905, delivery, $1.28⅜@1.31¼.
Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $——@——; December, 1905, $1.29¾@1.29⅞.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903–04.	1904–05.
Liv. quotations	6s10½d@6s11d	6s7½d@6s8d
Freight rates	16¼@—s	22½@—s
Local market	$1 27½@1 32½	$1 40@1 42½

Flour.

Values remain quotably in same position as previously noted, but market is not displaying any noteworthy firmness. Buyers are in most instances purchasing only for immediate needs, anticipating an easier market as soon as new crop wheat becomes available for milling. There is every prospect that flour will be lower in a few months, but there is not likely to be such a great break in prices as many anticipate.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Spot offerings are light, and while the immediate demand is not active, buyers find it necessary to pay full current figures. That the coming crop will prove as heavy as many are now estimating or that new barley will sell as low as it is being shorted on the speculative market is very improbable. The prices lately ruling in the speculative market for December barley would not allow the farmer much if anything over 70c. per cental for No. 1 feed. But that the grower will accept such a low figure or that it will be necessary for him to do so is not likely. May barley sold at $1.17 the past week, or was "washed" at that figure, while holders in the spot market were asking $1.22½ for feed barley.

Feed, No. 1 to choice	$1 20	@ —
Feed, fair to good	1 17½	@ —
Brewing, No. 1 to choice	1 22½	@1 25
Chevalier, No. 1 to choice	1 22½	@1 25
Chevalier, common to fair	1 17½	@1 20

Oats.

Stocks in this center are mostly common feed qualities and a large proportion colored oats. Market for these is not showing much activity or any great strength. Values are being maintained at much the same range as for some weeks past. Prices for strictly choice to fancy oats are largely nominal, owing to the paucity of supplies of this description.

White oats, fancy feed	$1 50	@1 55
White, good to choice	1 47½	@1 50
White, poor to fair	1 42½	@1 45
Milling	1 45	@1 50
Black oats	1 35	@1 42½
Red, fair to choice	1 35	@1 60

Corn

Market has been inclining against buyers, with offerings not very heavy and mostly Eastern product. The export trade is fairly active, mainly on Central American account. White Corn is most in favor for shipment to the tropics, although some Yellow is going forward.

Large White, good to choice Cal	$1 45	@1 50
Large Yellow	1 35	@1 45
Small Yellow	1 55	@1 65
Egyptian White	1 32½	@1 37½
Egyptian Brown	1 22½	@1 27½
Eastern, sacked	1 37½	@1 45

Rye.

Market is very lightly stocked and is firm for desirable qualities.

Good to choice	$1 55	@1 65

Buckwheat.

Not enough offering to admit of any noteworthy trading. Demand is also light.

Good to choice	$2 00	@2 25

Beans.

Good to choice beans are not being urged to sale. Most varieties are in light supply, and it is not likely that it will be necessary to carry many beans over into the new crop year. Stocks of Limas are thought to be pretty well cornered and asking prices for same have been sharply advanced.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	3 50	@3 00
Pinks	3 50	@4 00
Bayos, good to choice	3 25	@3 50
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	5 20	@5 50
Black-eye Beans	3 00	@3 15

Dried Peas.

There is a fair demand for Green, but not much inquiry for Niles. Garbanzos are scarce.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The local market continues quiet. While growers are holding for 30c. or more, there are no records of any transfers at the higher figures asked. To purchase freely 30c. or more would have to be paid, while to sell freely lower figures would have to be accepted, which is about as near as the situation can be defined at this date. The New York Producers' Price Current makes the following review: "The market is in a very conflicting condition. On the Pacific Coast those who have pooled their hops are holding for 30c., but nevertheless sales are reported at 24@25c. made by growers who are not in the pool. From information received it would appear that the growers who have entered the pool are not bound legally in any way, nor have they turned their hops into the hands of any committee to hold or sell, and they will, therefore, be at liberty to dispose of them at any time they may change their minds regarding the situation. The result of this holding and keeping stock out of the market has already been shown by one of the largest dealers here buying 700 bales Pacific in the London market for reshipment to New York. It is also said that some of the brewers who have more stock than they care to carry are ready to take advantage of any strengthening of prices. On the local market some good brewing Pacifics are being offered at 27c. without finding buyers. In New York State some of the growers have increased their asking price to 26@27c., and find it impossible to sell any hops at those figures. We understand a few sales of small growths have been made at 25@25½c. The reports of the growing crop on the Coast show the vines are fully three weeks ahead of last year, and the condition of the new yards is especially gratifying. In New York State the growth has been retarded owing to cold weather, but the farmers are all busy grubbing and setting poles. Reports from London show a dull market, with very little demand. The German market is unchanged."

California, good to choice, 1904 crop	.25	@28

Wool.

Buyers are on the still-hunt foor wool and are paying good figures where it is necessary to do so to secure offerings. There are reports of bids of 27c in Sonoma county for choice wool, and as high as 30c. is being asked for choice fleeces on this market. The first shipment of the season by water went forward this week by Panama steamer, 53,529 lbs., destined for New York.

SPRING.

Humboldt and Mendocino	28	@—
Northern, free	27	@—
Northern, defective	23	@24
Middle County, free	26	@—
Middle County, defective	21	@23
San Joaquin and Southern, free	22	@24
San Joaquin and Southern, defective	16	@20
Oregon, good to choice	25	@28
Nevada	20	@26

Hay and Straw.

Market is lightly stocked with choice Wheat and choice Tame Oat. There is a good demand for these descriptions at full current figures. Common grades of stable hay are plentiful and are moving slowly. Not much Alfalfa or Clover now arriving and little demand for either. Stocks of hay in the region tributary to San Francisco are reported at 47,400 tons on May 1st, as against 22,470 tons a year ago. The hay now held both here and in the interior is largely of common quality.

Wheat, good to choice	$12 00	@	14 50
Wheat and Oat	9 00	@	12 50
Tame Oat, fair to choice	8 00	@	11 00
Wild Oat	6 00	@	9 00
Barley	7 00	@	10 00
Alfalfa	7 00	@	10 50
Clover	6 00	@	9 00
Stock hay	5 00	@	7 00
Compressed	12 00	@	14 50
Straw, ₱ bale	25	@	50

Millstuffs.

Bran and Middlings are not being crowded to sale to any great extent, otherwise prices would be lower, as the demand is slow. Rolled Barley is steadily held. Millers have advanced quotations on Cracked Corn and Cornmeal.

Alfalfa Meal, ₱ ton	$17 50	@	19 00
Bran, ₱ ton	21 00	@	22 00
Middlings	24 50	@	27 50
Shorts, Oregon	21 00	@	22 50
Barley, Rolled	25 50	@	26 50
Cornmeal	28 50	@	29 00
Cracked Corn	29 00	@	29 50
Oilcake Meal	33 00	@	34 50

Seeds.

There is little movement at present in any of the several kinds of seeds quoted herewith. There are no particularly heavy offerings. Quotable values remain as previously noted.

Flax	$1 75	@	2 25
Mustard, Yellow	3 50	@	4 00
Mustard, Trieste	4 50	@	5 00
	Per lb.		
Alfalfa	8	@	12½
Canary	6¼	@	6⅝
Rape	1¾	@	2¼
Hemp	3½	@	—
Timothy	5	@	5½

Honey.

A shipment of 173 cases Extracted was made by steamer the current week to New York. Not much doing on local account. Stocks of choice water-white are light, but there is considerable honey of the amber grades still in sight.

Extracted, White Liquid	5½	@	6
Extracted, Light Amber	4	@	5
Extracted, Amber	3	@	3½
Extracted, Dark Amber	2½	@	3
White Comb, 1-frames	11	@	12
Amber Comb	8	@	10

Beeswax.

Stocks are not large, neither is the immediate demand very active. Values are ruling steady.

Good to choice, light ₱ lb	29	@30
Dark	27	@28

Live Stock and Meats.

Market for Beef is quiet, with an easy tone for the general run of offerings, although not quotably lower. Veal is not in heavy receipt and in a limited way choice is selling to fair advantage. Mutton and Lamb are in ample supply for the immediate rather light inquiry and market shows no special firmness. Hogs are not in heavy receipt and market is moderately firm at current values.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@	5½
Beef, 2nd quality	—	@	5
Beef, 3rd quality	4	@	4½
Mutton—ewes, 6@7c; wethers	7	@—	
Hogs, hard grain, 130 to 200 lbs	5⅝	@	5¾
Hogs, large, hard, over 200 pounds	5⅜	@	5½
Hogs, small, fat	5½	@	5⅝
Veal, large, ₱ lb	4	@	6
Veal, small, ₱ lb	5	@	8
Lamb, yearlings, ₱ lb	8	@—	
Lamb, spring, ₱ lb	8½	@	9½

Hides, Skins and Tallow.

Demand for Hides is active and market is firm at the quotations. Pelts do not lack for custom and prevailing values are being well maintained. There is a good export demand for Tallow at steady prices.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.		Culls.
Heavy Steers, over 56 lbs	—	@11½	— @10½
Medium Steers, 48 to 56 lbs	—	@10½	— @ 9½
Light Steers, under 48 lbs	—	@10	9 @ 9½
Heavy Cow Hides, over 50 lbs	—	@10	9 @ 9½
Light Cow Hides, under 50 lbs	—	@10	9 @ 9½
Stags	7½	@—	7 @—
Wet Salted Kip	—	@11	— @10
Wet Salted Veal	—	@12	— @11
Wet Salted Calf	—	@13	— @12
Dry Hides	18½	@—	17 @—
Dry Kip and Veal, 11 to 16 lbs	—	@16	— @14
Dry Calf, under 4 lbs	—	@21	— @19
Pelts, long wool, ₱ skin			1 25@2 00
Pelts, medium, ₱ skin			90@1 10
Pelts, short wool, ₱ skin			50@ 75
Pelts, shearling, ₱ skin			15@ 40
Horse Hides, salted, large prime, each			3 00@—
Horse Hides, salted, medium			2 75@—
Horse Hides, salted, small			2 25@—
Horse Hides, dry, large			1 75@—
Horse Hides, dry, medium			1 50@—
Horse Hides, dry, small			1 00@—
Tallow, good quality			4 @4½
Tallow, poorer grades			3½@3⅝

Bags and Bagging.

Quotable values remain as last noted, and are based on asking figures. Dealers are expecting an active movement in Grain Bags in the near future. It is probable an effort will be made to advance prices when harvesting is in full progress.

Bean Bags	$	4¾@5
Fruit Sacks, cotton		6½@7½
Fruit Sacks, jute, as to quality		5¾@7
Grain Bags, Calcutta, 22x36, spot		6½@—
Grain Bags, Calcutta, buyer June-July		6½@6¼
Wool Sacks, 4-lb		32 @—
Wool Sacks, 3½ lb		30 @—

Poultry.

Demand was not brisk, the warm weather during part of the week operating against consumers taking hold freely. Arrivals were not heavy, however, of either domestic or Eastern, and prices were maintained close to figures last quoted. Choice young stock, medium size to full grown, was most in request and sold to best advantage.

Turkeys, Dressed, choice, ₱ lb	$ 21	@	24
Turkeys, live gobblers, ₱ lb	18	@	20
Turkeys, live hens ₱ lb	18	@	20
Hens, California, ₱ dozen	4 50	@	5 00
Hens, large	6 00	@	6 50
Roosters, old	4 00	@	4 50
Roosters, young (full-grown)	7 00	@	7 50
Fryers	5 50	@	6 50
Broilers, large	3 00	@	3 50
Broilers, small to medium	2 25	@	2 75
Ducks, old, ₱ dozen	5 00	@	6 00
Ducks, large young, ₱ dozen	5 50	@	6 50
Geese, ₱ pair	2 00	@	2 25
Goslings, ₱ pair	2 50	@	2 75
Pigeons, old, ₱ dozen	1 25	@	1 50
Pigeons, young	1 50	@	1 75

Butter.

Demand was active on cold storage account, causing market to favor the selling interest. Some favorite brands going to special custom brought an advance on quotations. Higher prices for choice to select are looked for in the near future.

Creamery, extras, ₱ lb	19	@	20
Creamery, firsts	18½	@	19
Creamery, seconds	18	@—	
Dairy, select	18½	@	19
Dairy, firsts	18	@	18½
Dairy, seconds	17½	@—	
Mixed Store	16	@	17

Cheese.

Domestic flats are in fairly liberal supply and are offering at easy figures. Stocks of Young Americas are not large and demand for them is moderately active. Eastern cheese are commanding stiff prices.

California, fancy flat, new	9½	@—	
California, good to choice	9	@	9½
California, fair to good	8½	@	9
California, "Young Americas"	10	@	11
Eastern	17½	@	18½

Eggs.

Receipts are on the decrease and market for choice to select is showing more firmness. Owing to warmer weather and greater difference in quality of offerings, tendency is to a wider range in prices.

California, select, large, white and fresh	19	@—	
California, select, irregular color & size	17½	@	18½
California, good to choice store	16½	@	17½
Eastern firsts	—	@—	
Eastern seconds	—	@—	

Potatoes.

Old potatoes of desirable quality were steadily held, present stocks being mostly importations from Colorado, Minnesota and Utah and represent prior arrival purchases. New potatoes were in increased receipt and prices averaged lower than previous week. New are arriving in both sacks and boxes.

Cal. Early Rose, ₱ cental	—	@	—
Salinas Burbanks, ₱ cental	—	@	—
Eastern Burbanks, ₱ cental	1 25	@	1 60
River Reds, ₱ cental	—	@	—
Oregon Burbanks, ₱ cental	1 25	@	1 50
New Potatoes, ₱ cental	1 25	@	2 00
Sweet Potatoes, ₱ cental	—	@	—

Vegetables.

Market was liberally stocked with Asparagus most of the week, but much of it was of quite ordinary quality. Peas were in rather free receipt and sold mainly by the sack. String Beans were lower. Tomatoes moved slowly and asking prices were reduced. New Red Onions were cheaper, but in good demand at the lower figures.

Asparagus, No. 1 to choice, ₱ lb	5	@	7½
Asparagus, No. 2, ₱ lb	4½	@	5
Beans, Lima, ₱ lb	—	@	—
Beans, String, ₱ lb	3	@	6½
Beans, Wax, ₱ lb	—	@	—
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Egg Plant, ₱ lb	—	@	—
Garlic, ₱ lb	8	@	12½
Mushrooms, ₱ lb	—	@	—
Onions, Australian, ₱ ctl	6 00	@	—
Onions, New Red, ₱ ctl	1 25	@	1 50
Peas, Green, ₱ sack	1 50	@	2 25
Peppers, Bell, ₱ lb	—	@	—

Peppers, Green, ℔ lb	8	@	12½
Rhubarb, ℔ box	40	@	75
Summer Squash, small box	50	@	75
Tomatoes, Los Angeles, ℔ box	1 00	@	1 25
Tomatoes, Florida, ℔ crate	2 75	@	4 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

A box of Alexander Peaches, the first of the season, arrived from Vacaville Monday and brought $1.50. Apricots were on market from numerous points, principally Vacaville, Porterville and Yuma, but it was the exception where they were fully ripe and they sold at a wide range of prices, as to condition. Cherries were in light receipt for this time of year, and were mostly off in quality; for good to choice the market was firm. Currants were in fair display, desirable qualities bringing good figures. Strawberries were in moderate receipt and prices without special change. Logan berries are now going mainly by the chest. Raspberries made a better display, but there was no excess of choice offerings.

Apples, fancy, ℔ 50-box	2 00	@	2 25
Apples, good to choice, 50-lb. bx	1 50	@	2 00
Apples, fair to good, ℔ box	1 00	@	1 50
Apricots ℔ box	75	@	1 25
Blackberries, ℔ chest	5 00	@	6 00
Blackberries, ℔ basket	7½	@	10
Cherries, Black, good to choice, bx	75	@	1 25
Cherries, White, good to choice, bx	40	@	75
Cherries, loose, ℔ lb	4	@	9
Currants, ℔ drawer	75	@	1 00
Gooseberries, English, ℔ lb	10	@	12½
Gooseberries, other kinds, lb	2½	@	5
Loganberries, ℔ chest	7 00	@	8 00
Loganberries, ℔ crate	1 50	@	1 75
Raspberries, ℔ drawer	75	@	1 50
Strawberries, Longworth, ℔ chest	5 00	@	10 00
Strawberries, large var., ℔ chest	2 50	@	7 50

Dried Fruits.

Stocks of most descriptions of last year's dried fruit have been reduced to small proportions, admitting of very little trading, and the movement will necessarily be light until new stock comes upon the market. For all present holdings of desirable qualities the market is firm at current rates, quotable values showing little change from figures last given. Choice Evaporated Apples are rather scarce and in a jobbing way are held at an advance. Among the shipments of the week the steamer City of Puebla took for British Columbia 10,384 lbs. dried fruit, including 6509 lbs. Prunes. The steamer Umatilla, sailing Monday for British Columbia, carried 7,250 lbs. dried fruit, including 2,625 lbs Prunes. For new Prunes, Santa Clara growers are expecting the 3c basis for the four sizes, while dealers are talking ¼c to ½c less. Some sales of new Apricots are reported at 6½c for choice in 25-lb. boxes, July–August shipment. Some contracting of new Peaches is reported on basis of 6c for choice Muirs, Crawfords about ¼c less, August–September deliveries.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes.	6½	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	6	@	7
Apricots, Royal, fancy	7	@	7½
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	5½	@	6
Peaches, unpeeled, fancy to extra fancy	6½	@	7½
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	10½
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4½@4½c; 50-60s, 2¾@3c; 60-70s, 2¼@2½c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1½@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

The spot market is quiet. The little business doing in last year's raisins is at generally unchanged figures. For 1905 Muscatels some packers have named 2¾c in the sweat box as representing their idea of values.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3½	@	3½c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4½c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Oranges were in fairly liberal receipt, but much of the fruit was over-ripe or otherwise faulty. Demand was good and market firm for desirable qualities. The smaller sizes of Navels were most sought after. Lemons were in ample supply for immediate requirements and prices were without quotable change. Limes were in moderate stock and best were steadily held.

Oranges, Navels, choice to fancy, ℔ bx	2 25	@	2 75
Oranges, Navels, fair to good, ℔ box	1 50	@	2 00
Oranges, Seedlings, ℔ box	1 25	@	1 50
Oranges, Cal. Tangerines, half box	1 25	@	1 75
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 25	@	1 50
Grape Fruit, ℔ box	1 50	@	2 25
Limes, Mexican, ℔ box	4 00	@	5 00

Nuts.

Market is exceedingly quiet for both Almonds and Walnuts, which is not unusual for this time of year. There are not many now in first hands of either kind, but jobbers have fair supplies.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

Market continues quiet, so far as transfers from first hands are concerned. Dry wines of 1904 are quoted at 14@17c per gallon wholesale, San Francisco delivery, with market firm for choice and not much of this sort offering. On the other hand, for common qualities there is not much inquiry. Sweet wines of last vintage are quoted at 25c per gallon, winery delivery, 27½c per gallon in a jobbing way, San Francisco, but as is to be expected, the wine at these figures is not of high grade. Receipts of wine at San Francisco last week were 400,325 gallons and for preceding week were 389,125 gallons. The steamer Acapulco, sailing May 13, carried 66,704 gallons and 12 cases, mostly for New York.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	85,731	4,048,520	4,861,568
Wheat, ctls	20,133	2,581,406	2,160,695
Barley, ctls	40,124	3,275,573	5,227,115
Oats, ctls	870	810,065	830,996
Corn, ctls	5,217	244,300	147,215
Rye, ctls	498	53,009	54,927
Beans, sks	7,017	620,390	695,011
Potatoes, sks	11,315	1,175,899	1,217,710
Onions, sks	4,559	129,070	144,829
Hay, tons	1,885	161,088	158,531
Wool, bales	2,886	71,781	59,051
Hops, bales	..	39,133	29,487

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	63,220	2,656,060	3,021,864
Wheat, ctls	139	805,136	915,293
Barley, ctls	6,842	1,862,981	4,125,735
Oats, ctls	357	79,904	22,920
Corn, ctls	10,371	131,498	17,394
Beans, sks	428	48,769	37,857
Hay, bales	3,219	227,517	216,288
Wool, lbs	....	830,690	2,438,346
Hops, lbs	330	382,629	589,624
Honey, cases	66	2,576	4,822
Potatoes, pkgs	1,841	104,866	103,332

Mutual Insurance Meeting.

TO THE EDITOR:—The State Association of Mutual Fire Insurance Companies will hold its annual meeting at Santa Barbara, Tuesday, June 13, at 10 A. M., in Co-operative Hall. There will be an instructive programme interspersed with music from local talent. Men of experience along our line will be in attendance. These meetings are held alternately in different parts of the State, to give everybody a chance to investigate and compare notes. The Farmers' clubs and Farmers' insurance companies and investigators in this section of the State should take advantage of this opportunity.

G. F. CROMER, State Secretary.
204 Currier Building, Los Angeles.

A barrel is nailed to a tree on a barren island in the Straits of Magellan on the southern coast of South America, and used as a postoffice. Ships passing there drop their mail in the barrel, and it is taken out and forwarded by the next ship which comes along bound in the direction of the letter's address. Sailors have found it a great convenience. It is international in character, and all flags carry the mail from it free of charge. It is probably the only legitimate postoffice in the world without a postmaster.

The telephone system of New York is the largest in the world. The first of the year there were 154,934 telephones in use in that city, and Chicago has only ninety thousand.

A Pointer for Tool Buyers.

There is probably nothing in which quality is more important than in tools. Yet the quality of a tool is not apparent to the eye, and even the experienced buyer must take chances unless he relies upon a brand which guarantees reliability.

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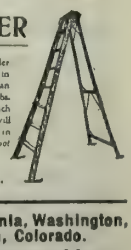
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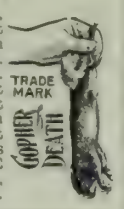
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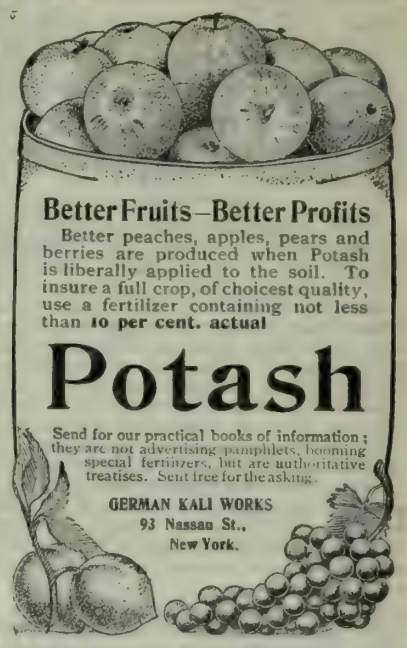


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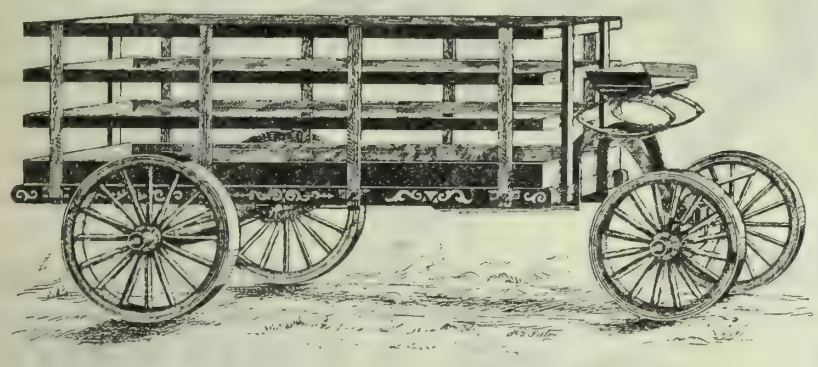
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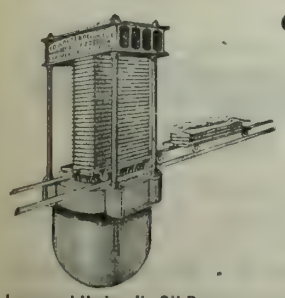
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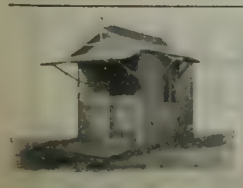
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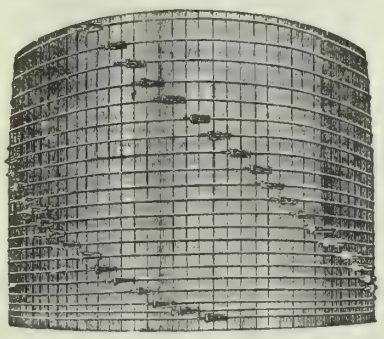
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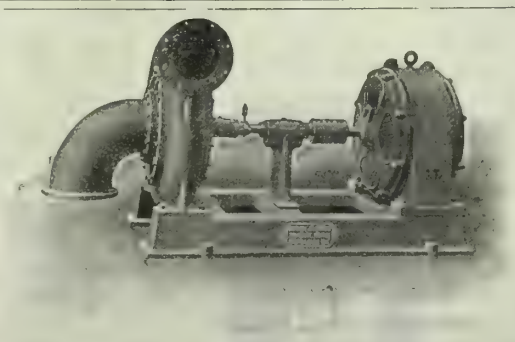
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AGRICULTURAL SCIENCE

Pathological Station Wanted in Southern California.

A laboratory and experiment station for the study of plant diseases is to be established at once in southern California, through financial support furnished by the State that the work may be undertaken by the University of California, as a part of the activities of its department of agriculture.

The State Commission for the selection of a location for the pathological laboratory and experiment station, a board consisting of His Excellency, George C. Pardee, Governor of California, President Benjamin Ide Wheeler, of the University of California, and Professor E. J. Wickson, of the chair of Agricultural Practice in the University of California, is now ready to receive proposals in regard to a site. It is expressly set forth in the bill providing for this work that lands already belonging to the State at Whittier or at Patton may be used, if the Commission so decides. Should other communities in southern California, however, make offers particularly advantageous in character, the Commission will be glad to entertain such proposals.

The appropriation made by the last Legislature provides that the pathological laboratory shall be equipped with buildings, material and appliances necessary for the study and determination of the cause of diseases and the conditions of orchard trees, fruits and vegetables. It shall provide the means for a thorough examination of fungus, bacterial and other maladies, insects, pests and diseases, and their remedy or prevention; the condition of the soil; cultivation and location that may tend to imperfect nutrition and all other defects that may affect the economic production and marketing of horticultural products.

The pathological laboratory must be located in one of the seven southern counties of the State. The Commissioners are empowered to select the location, to perfect title to it, and to provide for the purchase of lands or for the receipt of lands as a gift.

When the site has been fixed, either upon land already belonging to the State, upon land presented by communities or individuals or upon lands purchased, the Regents of the University of California are directed by the appropriation act to proceed with the construction of a laboratory building, to keep and maintain the laboratory, and to receive and manage gifts, leases, or bequests for promoting the purposes of the act.

The Regents are directed to select not less than two experts in plant pathology, and such assistants as may be needed. These men are to have active charge of the laboratory and the investigations and field experiments. They must reside at or near the laboratory and devote their entire time to the investigations required by the Regents. The results of their work are to be published from time to time. Their salaries are to be fixed by the Regents.

The State Commission is to select a location, also, which may be on the same lands as the pathological laboratory, or elsewhere if preferred, for a branch agricultural station or stations, to carry on experimental investigations in connection with the other agricultural work of the University of California to ascertain the best methods of agricultural management; for the investigation of fertilization; of irrigation; of improved methods of handling fruits for market; for the introduction of new varieties of fruits; and such other investigations as may be deemed advisable to promote the horticultural interests of southern California.

The Commissioners may accept gifts of lands for these purposes or may select lands already owned by the State in southern California. It is provided that if the station be located at the Whittier State School or at Patton, the site of the Southern California State Hospital, not less than fifty acres of land shall be devoted to the experiment station. Land must be selected which is supplied with sufficient water for its proper irrigation.

The Regents are required to adopt a general plan and schedule before the beginning of each fiscal year which shall describe the investigations and experiments to be pursued during the year, and it is to be the duty of the Regents to receive and consider written statements from individuals and association in various branches of horticulture, conveying plans or suggestions for investigations which they may approve or desire.

In accordance with the terms of the legislation, the Commission invities proposals of land, and Regents invite suggestions as to the work to be undertaken.

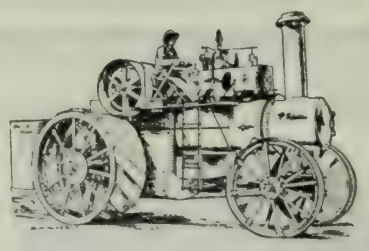
Proposals in regard to both these matters should be filed on or before July 1st with the secretary of the State Pathological Station Commission, Mr. V. H. Henderson, Berkeley, California.

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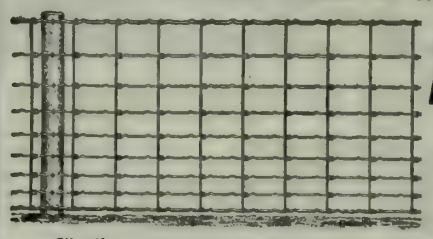
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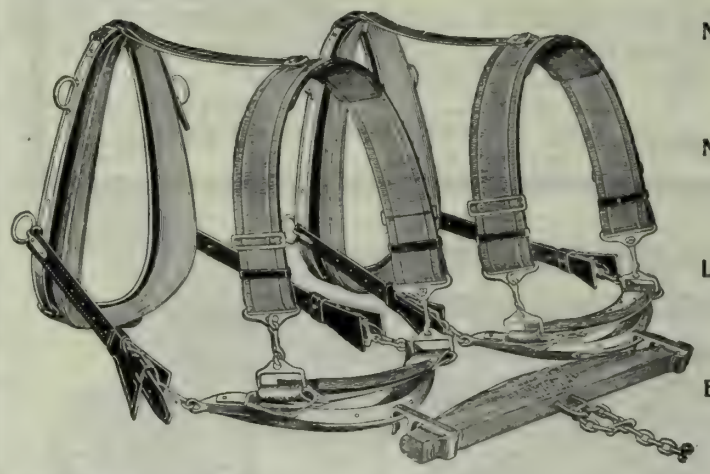
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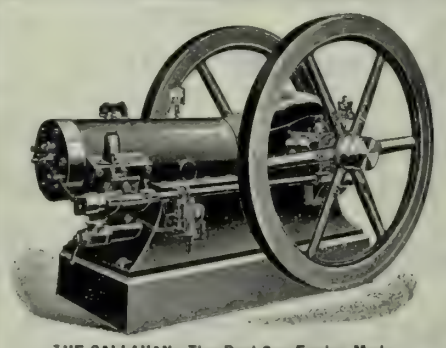
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Farmers' Institute and Picnic at Polytechnic School.

TO THE EDITOR:—A large gathering of the citizens of San Luis Obispo county was at the Polytechnic school on Friday last, the occasion being the second annual farmers' institute and basket picnic. A splendid programme of speaking and music was presented. The morning topic was, "What is Most Needed to Develop the Resources of Our County?" It was discussed by Hon. Warren M. John, trustee of the school; Mr. C. A. Black, editor of the Telegram; Rev. Harry Hillard, pastor of the Presbyterian church, and Mr. J. E. Roadhouse, instructor in irrigation and plant industry in the Polytechnic school.

The afternoon topic was "Irrigation for San Luis Obispo." Professor Samuel Fortier, of the University of California, gave some interesting and valuable figures upon irrigation enterprise in the Santa Clara valley and in Utah and Colorado, and showed how similar things might be done here—how similarly large increases in land values and in productiveness might follow irrigation. Professor I. P. Roberts, of Cornell University, followed with a most instructive address upon how moisture may be conserved in the soil. He is a most popular speaker at these annual gatherings. The Polytechnic Choral Society furnished music.

During the day the school was open to inspection, and groups of guests could be found at any time in the various departments, viewing the work of the students. The sewing, drawing, carpentry, forging, poultry, cattle, horses, dairy barn, gardens and every other part of the school came in for a large share of praise and attention. Everybody thought the school and the students have made remarkable progress during the two years of the school's existence.

San Luis Obispo, May 12.

San Joaquin County Granges.

TO THE EDITOR:—It was the pleasure of the writer to visit Ripon and Manteca Granges. Though so recently organized they are doing well and making good growth of desirable persons At the former place Brother Moulton, the Postmaster, as on a previous occasion, hitched up his good traveling span and took me round to see a number of the members at their homes. He also entertained me at his hospitable home. Ripon Grange is well officered from Brother A. J. Nourse, Worthy Master, down to Gatekeeper. They took in eighteen new members the night after organization, with more applications for the next meeting.

At Manteca they had seventy-nine charter members, with three more initiated last night. The work was gone through in good style. This Grange, with Brother A. B. Goodwin, Worthy Master, at the head, is well officered. Reports from French Camp, with a cordial invitation for the members to attend their harvest feast, indicated a good lively Grange there At Manteca a strong Rochdale Association has been organized, with a good, capable board of directors.

Brother John S. Dore and I go to Courtland, Sacramento county, with good prospects for instituting a Grange among that intelligent and enterprising people.

We would be pleased to hear from any other places where there is a reasonable outlook for Granges. Give names of interested persons who would assist in canvassing for charter members. J. W. WEBB.

Fresno, May 12.

Penngrove Grange Not Dead.

It was reported in the Petaluma Argus that Penngrove Grange had died a natural death. Members of the Grange, however, deny this assertion and maintain that while the attendance has been poor, yet no action has been taken by the Grange to surrender the charter. The next regular meeting will be held on the 20th of next month.

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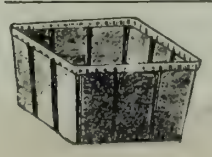
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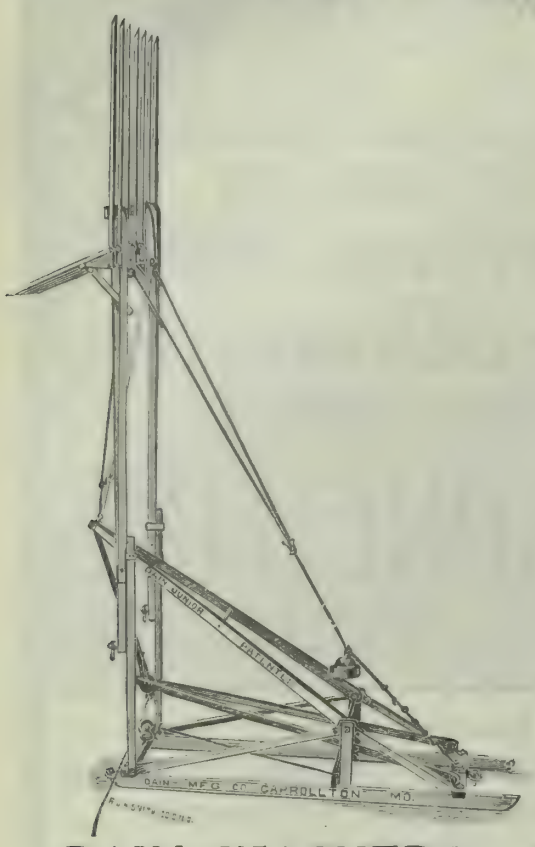
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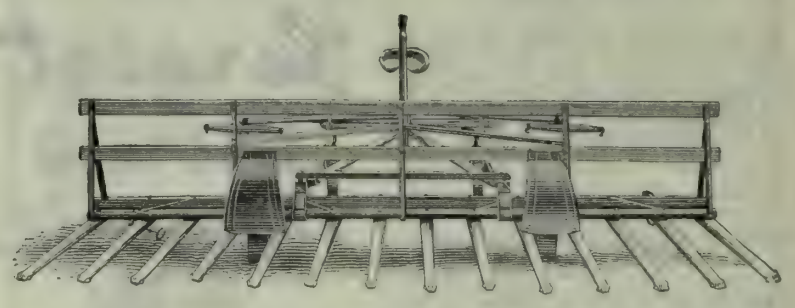


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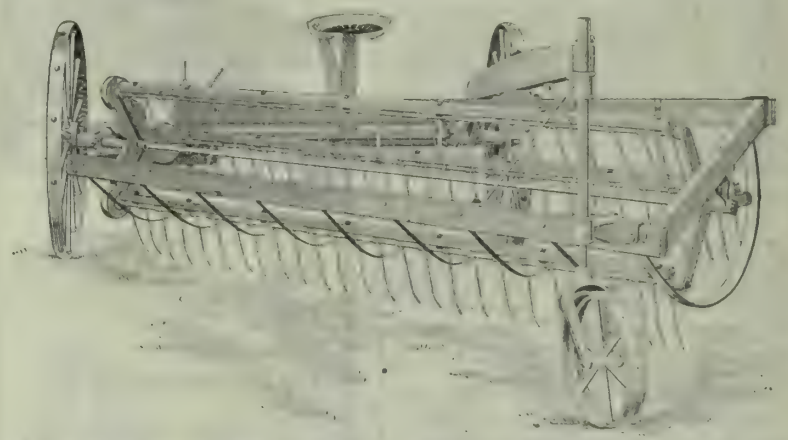
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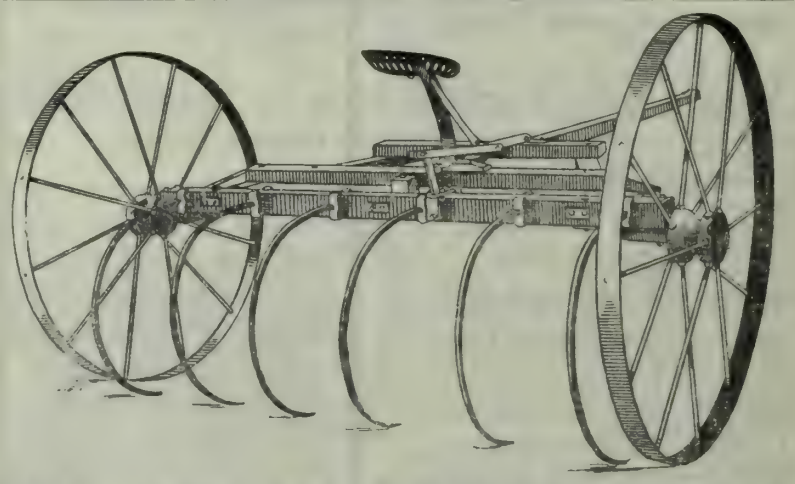
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Vol. LXIX. No. 21. SAN FRANCISCO, SATURDAY, MAY 27, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

In the Sierra Nevada.

Although the first of June is still a few days distant, the recourse to the mountains is beginning briskly and the outing throng will soon be contending with the snow for the possession of the mountain highways. Of course the receding snow will long hold its place upon the higher altitudes, but the roads most popular with the summer crowd are lower and therefore soonest free to them. For weeks past the routes to the Yosemite have been open and the early visitor has had the advantage of the greatest masses of falling water, the earliest spring-time flowers, for the higher mountains have a real spring time which the great valleys do not know, and the delight of awakening nature in tree and shrub and lowlier plant and in the forest animals as well.

In token of the mountain outing season we have two views, one showing the picturesqueness of the mountain roadway over which it is supported by a retaining wall laid up by the hand of man, and the other a roadside inn, which is welcome to the traveler, although it does intrude the picket fence and frame buildings among the natural wildness of the mountain flats and slopes. The buildings in this case constitute the stopping place known as Riverton, situated on the State highway leading from Placerville to Lake Tahoe and 23 miles distant from the former place. It is in the canyon of the South Fork of the American river, and just beyond the place the road begins to ascend the mountain, on the left of which a low shoulder appears in the picture. Riverton is one of those cosy, hospitable places for which the California mountains are famous, and in which one finds a cordial greeting and ample comforts.



Lake Tahoe State Highway, Showing Retaining Wall Replacing an Ancient Support of Logs.



Riverton, on the Lake Tahoe State Highway, Twenty-Three Miles East of Placerville.

The second picture suggests the work which has to be done to support a mountain-side road in many places along its length such rock work has been done. In some places where the early builders made the wall foundation of logs, the wall has fallen and thereby caused heavy expense in rebuilding. Under the present State Highway Commissioner such walls have been substantially built with a permanent foundation and very little care hereafter will be necessary. This is, of course, the advantage of the building of such main arteries of travel by the State, for the counties traversed cannot undertake the expense, and it is in fact the traffic of the State at large and the interest of other counties which are chiefly served by mountain transits. California is making a good beginning along such lines, but of course in the development of the State the enterprise should be continually provided for until all desirable points are attainable by good highways.

The Lake Tahoe State highway, which is entirely situated in El Dorado county, commencing at the junction of the Newtown and Placerville roads, a short distance easterly from Smith's Flat, has its terminus at a point on the east boundary line of the State of California, at or near Lake Tahoe, traversing about 58 miles of mountainous country. When this road was provided for by law it was specified that permanent monuments should be set for future survey reference. For the purpose of marking the total survey, milestones cut of granite at Folsom, of the size 18 inches wide, 6 inches thick and 54 inches long, and indicating the distance to Placerville, were secured. These stones have been duly set on the ground so far as the road has been completed, and the traveler has one road at least along which he can know his progress by monuments indicating actually measured distances.

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SAN FRANCISCO, MAY 27, 1905.

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The Week.

It was our good fortune to be on the country roads most of last week, and we gained this impression at least: that California never was more beautiful than this spring. Everywhere we went a park-like verdure spread over the valleys and to the hilltops. Vegetation was thrifty and strong and grazing animals were smooth and well rounded. On close examination it appeared in many places that the grain was not filling well, that there was too much rust in some fields, that many fruit trees carried a scant burden and that other indications of slack products appeared, for the peculiar weather of the winter has much to answer for in these lines, but for general beauty, upon the basis of rich verdure and bright sunshine to disclose its full loveliness, the State is certainly beautiful this year beyond most other years, and everyone is full of appreciation of it, for the frank expression, "you have chosen a good time to see our country," was an honest tribute to the fact that California as a whole has been generously dealt with this year. It is gratifying to know that there are so many thousands of new comers who are now living their first year in California and are making new homes under very auspicious beginnings. The amount of building and other improvements which we saw in the open country and in the valleys shows that we are gaining in rural population which is a thing most gratifying to contemplate. It looks now as though the next census would demonstrate that the stationary condition, and even retrogression which some of our large valleys experienced during the last decade, had given place to development and progress.

And there is another indication of progress, which will appeal more strongly, perhaps, to the hard-headed element of our population. The Sacramento Union collects the facts to show that within a week California capital has bought over a million dollars' worth of school bonds offered by our own towns and outbid Eastern capital for these securities. These and other similar investments, says the Union, indicate that California has money to invest in such securities and has the faith in the future of the State to invest it. They show, too, that California capitalists see the advantage of keeping interest at home; interest sent across the continent is lost to the State forever. The amount of interest that California has in the past paid Eastern capitalists runs into the tens of millions; the State has had to be enormously rich to stand the drain. But the money thus borrowed has been employed to develop the State. The money has been well invested; it has increased the productiveness of California many fold. Out of this increased income the interest and much of the principal has been paid, and the State, because of its borrowing, has enormously increased its resources and its wealth. Now, out of its accumulated capital, it can purchase its own bonds and keep its money at home. This is a sign of progress which should not be overlooked.

Wheat is strong, both on spot and futures. At this port it has advanced 1 cent on May and 4 cents on December since our last report. There is very little spot offering. Two ships have gone on the engaged list: one with general cargo taking wheat for stiffening at 25s to Liverpool, another, a full cargo of wheat or barley at 23s 9d to Cork for orders. Feed barley is stiff and some brewers said to be selling surplus grain at 50 cents per ton above last week. Oats are cornered, stiff and higher. Corn is firm; the Central American demand has been about filled, but there is little California corn and corn is booming at the East. Rye is scarce and firm for choice. Lima beans are stiffer and the old crop under control, apparently, 5¾ cents being asked here. Bran and middlings are dull, weak and unchanged. Choice stable hay is firm, but there is plenty of low-grade stable hay at low rates and cow hay is doing nothing. Meats are unchanged, only hogs being firm, and this owing to light receipts. Butter is higher. Flat cheese is steadier and Young Americas firm. Strictly choice eggs are doing better, but there is a wide range according to quality. Poultry is still in fairly good shape. Old potatoes are dull, while new are more abundant and lower. Old onions are firmly held, all being imported, while new reds are lower. Valencia oranges are firmly held, but there is a large stock of other varieties fully ripe and carelessly packed, which is thrown about at any price. Lemons are unchanged and quiet, and limes lower. There are few cherries and they go high. Too many apricots are green to sell well. Small lots of peaches are increasing. Colorado desert cantaloupes are in—fourteen melons for $9.50 being one trade. Strawberries are more abundant and lower. Other berries in fair supply and lower also. Clyman and Cherry plums are in. Dried fruit shipments continue—over 110,000 pounds have gone out, nearly all prunes, which are are unchanged. There is nothing new in nuts, and honey is not doing business yet, though a few samples of new are in. Hops are the same as before, while the outlook is for less new crop than expected earlier. Wool is strong and nearly all bought. Choice would probably bring 30c here, and Eastern markets are strong. It is telegraphed that one of the largest sheep owners in northern Wyoming and southern Montana has sold his wool clip of 500,000 pounds at 25 cents a pound, the highest price paid in the West this season.

It is unofficially reported from the office of State Horticultural Commissioner Cooper that there is a strong negative to the first method of co-operative prune selling, which was recently described in the Pacific Rural Press, viz., that of profit sharing, involving a contract from each grower to sell on delivery, for five years, at 1¾ cents, four-size basis, with a strong company agreeing to pay also pro rata to growers one-half of net profits, does not meet with much approval. The second plan is preferred, which is co-operation known as the Rochdale and Exchange system, by which local associations unite through representatives to form a central selling agency, which shall establish a complete distributing system, reaching all important markets. We understand however that the number of fovorable replies is scant and that denunciation of the whole affair is quite free. It will probably take some time to overcome the disappointments of the past and the black spots which have appeared on some of the idols of the co-operative movement. It is fortunate that the coming prune crop is small enough to sell itself.

The State Commission for the selection of a farm for the University of California began its viewing of sites last week and spent three days in examination of farms in Alameda, Contra Costa and Yolo counties. Thoroughly good farms were found in all these counties; but as there are half a dozen or more other counties to be examined, the Commission has reached no conclusions, and in fact has had no formal discussion looking toward selection. As at least two members of the commission must be absent from the State for a few weeks, it is likely that farther exploration cannot be undertaken until July. During the leave of absence granted to Professor Hilgard Professor Wickson is to serve as Dean of the College of Agriculture and director of the experiment stations of the University.

QUERIES AND REPLIES.

A Wild Insect in the Garden.

To the Editor:—I have just had sent to me a few bugs from my country place in the San Joaquin valley. The foreman tells me they are very numerous and are destroying the gardens; that he has used bluestone and sulphur on them, but without effect. May I ask you, as a great favor, to look at the bugs and suggest a remedy?—Owner, San Francisco.

The insect is Gastrophysa dissimilis. It is not a new pest, but is native to California, and does not attract much attention because it confines itself to eating the leaves of dock and other weeds. When it invades gardens it must be treated in the same way as other leaf-eating insects, viz., poisoned with Paris green. This Paris green can be applied to garden plants with a spray pump, using Paris green at the rate of one pound to 150 gallons of water, keeping it thoroughly stirred during the spraying, because Paris green will otherwise settle to the bottom.

Another way for the application of Paris green, which is often very handy in garden truck, is to mix Paris green with about twenty times its bulk of common wheat flower and put it in a cheesecloth bag, shaking it over the plants so that they are dusted over with the flour and poison. This will kill all insects which make holes in the leaves and can be safely applied to all garden plants except those like lettuce, of which the leaves are to be actually eaten. This insect is not generally counted injurious and its occurrence in such large numbers this year may be due to some peculiarity of the season.

Summer Growth of Forage.

To the Editor:—Will Egyptian corn do any good planted as late as first of June? Can alfalfa be planted during the hot months and get a good stand? If so, is it best to irrigate before or after putting the seed in the ground? Is there any thing better than cowpeas that one can plant now for making hay? Can cowpeas be harvested with a mowing machine? In Louisiana, I have seen them use a machine, which pulled up the veins.—Newcomer, Turlock.

On moist land or land that has been well wet down any of the sorghums (of which Egyptian corn is one), can be sown almost any time in midsummer. Alfalfa will seldom do well sown then, but if you wish to try it, wet down the land before plowing and cover the seed deeper than you would in the fall or spring. Sorghum seed should also be covered quite deep, if the soil is a light loam. Sorghum, thickly broadcast, will make the best kind of hay you can sow after June 1. Cowpeas on the plains will not make growth enough to pay as a rule, although on moist bottoms they may give a great field. You should correspond with advertisers offering mowing machines as to whether they can rig you out to handle cowpea hay.

Wire Worms.

To the Editor:—Will you tell me what these pests are and how to exterminate them? The soil in this particular place seems to be full of them. They bore through the roots of all kinds of vegetables. They are particularly bad on onions and potatoes.—Gardener, Santa Cruz.

The beetle larvæ which you sent are commonly known as "wire worms," and are a common pest both in gardens and fields. In garden work it is possible to treat them with some satifaction at least by the use of soot from the stove pipe or chimney, sprinkled around the surface of the ground and carried into the soil by sprinkling, or soot cultivated in and acted upon by the soil moisture also seems to discourage these worms. The use of nitrate of soda in the same way is also very effective, but one has to

be careful to sprinkle it very sparingly because in quantity it is exceedingly destructive to plant life. If you can make your garden on a new piece of land and fallow the infested piece you will kill them out to some extent.

Foresting Hillsides.

TO THE EDITOR:—I have some rather rough hill slopes in the Simi valley (producing at present very little else than a dense growth of sage) which I would like to get set to some kind of timber that would make fence posts or fire wood, preferably the former. Sugar gums will grow on this land if the ground is plowed and the trees set and cared for for the first two or three years, but all this is rather expensive and, so far as I have seen, the Sugar gum is of little value except for fuel. Do you think redwoods would grow on this land and could I sow the seed this summer, letting stock tramp it in so it would come next winter—with any hope of success? If not, can you suggest some other plan or some other tree that might do?—READER, Simi, Ventura county.

We do not believe that redwood seed would give you any results. Presumably the conditions do not suit the tree or it might have extended its habitat into that part of the State. The best guide to such undertakings as you have in mind for southern California is to get close to the reforestation work being done in Los Angeles county. An interesting account of the work was given in last week's PACIFIC RURAL PRESS.

Worms in Horse Beans.

TO THE EDITOR:—For the last few years the horse beans raised in this neighborhood become buggy. It seems that the seed is laid in the blossom, and it makes them unmarketable on that account. It is the same kind of a bug that is supposed to be in peas. I have heard that they kill the bug in peas by putting them in an air-tight place, and put some carbon bisulphide in the same room, which will kill the bug. Of course, those peas are only used for seed, so far as I know. I have an idea that the same treatment will kill the bug in the horse beans, but, as most of them are used for eating purposes, would like to know from you if by such a treatment it will make them unfit for eating purposes, that is, if it will poison the bean.—GROWER, Alameda county.

You need not apprehend that the carbon bisulphide will injure the beans for eating purposes at all. It kills as a vapor and this vapor is then completely dissipated by contact with the air. The carbon bisulphide is used to kill the weevil in wheat elevator bins, the wheat afterwards being ground into flour; in fact, there is not any possibility whatever that this agency will remain in the material to which it is applied after it has a chance to escape in the atmosphere.

Killing Bermuda Grass.

TO THE EDITOR.—I notice an inquiry on killing Bermuda grass, but you do not tell the best way to kill it. I want to know badly. Can you inform me?—J. R. C., Chico.

We want to know badly also. We do not know either the best way to kill it nor the worst way to kill it. If we knew any way, whatever, to kill it without destroying the land we would be satisfied for a while at least.

One Way to Kill Bermuda Grass.

TO THE EDITOR: — In answer to inquirer from Bakersfield, how to kill "Bermuda grass," I will give him my experience and methods, which succeeded. In the first place, I removed all the top soil to a depth of from 16 to 24 inches. Then I sprinkled sulphuric acid over the land lightly and spaded the same to a depth of 10 inches. After that I sprinkled some more and rolled it hard. After a couple of days I hauled in river sediment, which I mixed right away with good, old, rotten manure; then rolled the surface, watering it well, and then I seeded the land to blue grass. I never had any trouble after that with any Bermuda grass; but nobody can think of planting trees or shrubs in such a lawn or near it. You may think it expensive, but how about the many failures and other methods, and the work besides?—CHAS. J. SCHMID, Practical Landscape Gardener, Folsom.

We are really glad to know that some one has succeeded even at such great cost. Of course the method is, however, out of the question, except on a small piece of land on which cost is but of little moment.

Pollenizing Cherries.

TO THE EDITOR:—Will you kindly suggest what to do with a cherry orchard that does not come into bearing? The trees are largely Royal Ann, have been set nearly ten years, are almost perfect in form, the foliage is as fine as anything in the country, bark of good color, in fact the trees are beautiful to look at and bloom full every year, but 90% blast. The orchard is situated in the very best section of our fruit district, the soil apparently of the best. Apricots and peaches grow to perfection on adjoining land. Any information that you may be able to give me will be appreciated. Would a sample of the soil assist you in determining the trouble?—ORCHARDIST, San Benito county.

The bearing of your Royal Ann cherries can undoubtedly be improved by having other varieties associated with them for pollenation of the blossoms. There is no difficulty about the growth of the trees, but the Royal Ann is often unproductive with its own pollen. The best way to proceed would be to graft over a part of the trees to Black Tartarian or Black Republican or Bing, or probably many other kinds. This has often been successfully done, and Royal Ann trees which are shy of bearing of themselves become productive when associated with other varieties.

Woolly Aphis.

TO THE EDITOR:—I received a few trees from the nursery and planted them where trees had died out. I have discovered that there is woolly aphis on them. Can they all be removed or killed, and how? Is there danger of their spreading to the rest of the orchard?—PLANTER, Gish Road, San Jose.

You will find a full discussion of the woolly aphis and the means of holding it in check in the PACIFIC RURAL PRESS of December 17, 1904. Our experience is that you cannot get rid of it, though you may hold it down to little injury by the measures fully described in the article specified. The pest, in spite of all that you can do, will spread to all your apple trees in time. If you are absolutely sure it is not yet on the other trees, the best thing to do would be to dig up and burn the few trees you speak of, give the hole a strong dose of bisulphide of carbon, fill in the earth and plant clean trees next winter.

Late Pruning.

TO THE EDITOR:—I have fifty acres of French prunes which I failed to prune last year, in fact, which have never been pruned much. The trees are unusually heavily loaded with fruit, which will cause them to break badly before the crop matures, besides the chances of the fruit being small. I would like to know if I can do some cutting on these trees at this season of growth and fruit without doing the trees any particular harm or injury. I did some pruning when the trees were in full bloom this spring, with no different effects than fall pruning, which inclines me to the belief that I can cut back pretty safely now. Will summer pruning be likely to improve the size of fruit?—GROWER, Sonoma county.

You can cut back your prune trees as you propose without injury and it will have some effect in increasing the size of the fruit which remains. To have sat isfactory results, however, it should be done as soon as possible and the cutting back should not be too severe.

Cottony Cushion Scale.

TO THE EDITOR:—I send a package containing a branch from an orange tree growing in the neighborhood. Will you be so kind as to tell me what insect is infecting it and what remedy to use to eradicate it?—GROWER, Elk Grove.

It is cottony cushion scale, and the remedy is to send to Mr. E. F. Ehrhorn, Deputy Horticultural Commissioner, Ferry building, San Francisco, for a colony of Vedalia cardinalis.

Does not Like the Sugar Prune.

TO THE EDITOR:—I have seen several discussions in regard to the Sugar prune whether or not it ever will be extensively planted. I say no, because the tree overbears; the fruit must be thinned, or it will not have much sugar when ripe; the wood is too weak to hold the fruit; it will not make a good union on peach stock; 95% will break off. The Sugar prune is very coarse meated and is very inferior to the petite prune when cooked. Lots of trees are or have been dug up again and something better substituted. I say you will make a mistake if you plant extensively the Sugar prune. One or two trees is enough after you have tried them. — A SUBSCRIBER, Healdsburg.

The Sugar prune is being hit pretty hard; probably some of our readers have different experience. If so, in all fairness to the fruit, we should hear from them.

Trapping Snails.

TO THE EDITOR:—If snails or slugs infest a flower or vegetable garden the best remedy is to take cabbage leaves and lay them around or near plants that you wish to protect. The snails prefer cabbage to most anything else. Every morning the cabbage leaves can be turned over and snails will be found under them and killed. As soon as cabbage leaves become dry they must be replaced with fresh ones. This is the best remedy that we know of and is a sure cure.—A SUBSCRIBER, Healdsburg.

This is an old and tried method of trapping the pests. The only objection we know to it is that it takes a good deal of trouble and cabbage.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 22, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear, warm and dry weather prevailed most of the week, greatly benefiting all growing crops. A brisk "norther" commenced Sunday, but no serious damage has been reported. A severe thunderstorm, with heavy hail and rain, occurred in Shasta county on the 16th, and some damage was caused by lightning. Wheat is in very good condition and making rapid growth; prospects for a heavy crop are much better than two weeks ago. Barley is in fair condition and a good crop is probable. Haying is progressing rapidly; the yield is the heaviest for several years and oat hay is unusually heavy. Hops and vegetables are thrifty. Green feed is plentiful and stock are in prime condition. Vineyard cultivation is in progress and outlook is good for a heavy crop of grapes. All deciduous fruits are making satisfactory progress and citrus fruits are in good condition.

Coast and Bay Sections.

Clear, warm weather continued most of the week, with cool, northerly winds at the close in some sections. Grain and hay were not seriously injured by the recent rains and are now in excellent condition in all sections. Wheat, barley and oats will probably yield large crops in nearly all places. Haying is progressing; volunteer hay is reported light in some places, but other kinds are yielding unusually heavy crops and the quality is excellent. Hops have made great improvement with the warmer weather and are looking very well. Sugar beet planting is still in progress in the vicinity of Watsonville, where about 2000 acres have been planted. Green feed is abundant and stock are doing well. Prunes are reported very light in the Santa Clara valley, but apricots and apples will be full crops. In other sections deciduous fruits and grapes are in very good condition and improving, with indications of at least fair crops.

San Joaquin Valley.

The weather was fair and seasonable during the past week. The wheat crop is reported damaged by rust in the northern portion of the valley but in good condition in the southern portion. Haying is progressing rapidly and a large crop will be harvested. Barley and oats are making good growth and apricots are being marketed freely. Grapes are thrifty and promise a good crop. Green feed is plentiful and stock are healthy and in excellent condition. Irrigating water is abundant.

Southern California.

The warm, clear weather at the beginning of the week was very beneficial to all crops and destroyed many cutworms. Cool, cloudy and foggy weather during the latter part of the week was less favorable and retarded haymaking. Cut-worms have caused considerable damage to alfalfa in some sections but are said to be disappearing. Grain is in very good condition and the yield will probably be much heavier than in recent years. A large crop of hay is being harvested and the quality is good. Sugar beets, beans and potatoes are doing well. Walnuts show considerable improvement, but the outlook is not good for heavy crop. The honey crop will be much better than last season's. Heavy shipments of Navel oranges are being made. New oranges are setting full and a large yield is probable. Deciduous fruits and grapes are in good condition, but the cool weather retards development.

EUREKA SUMMARY.—Cool and windy near the coast the greater portion of the week; warm and dry in the interior, where rain is needed to soften the soil. Grain, hay and other crops give promise of great returns.

LOS ANGELES SUMMARY. — Unseasonably warm weather the first of the week benefited haying, which continues, with a good crop in some sections, but injured strawberries. Grain is ripening fast. The army worm is causing damage in some sections; others report little damage.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 24, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	32 43	64 56	44 93	56	44
Red Bluff	.00	33.52	31.52	25.50	86	52
Sacramento	.00	21.83	16.87	19 65	80	50
San Francisco	.00	23 45	20 59	22 42	68	48
Fresno	.00	12 08	8 04	8 59	88	42
Independence	.06	3 89	2.57	3.67	82	46
San Luis Obispo	.00	23.50	16 95	19 96	78	40
Los Angeles	.00	19 46	8 72	16 28	72	50
San Diego	.02	14.26	4.30	8 13	66	56
Yuma	.00	8 69	1 00	2 88	94	60

THE BOTANIST.

Our Mountain Chaparral.

By Rev. Geo. Robertson before the Fortnightly Club of Redlands.

A few years ago botanists taught us that all underbrush or shrubs were the weeds of the forests. Now we are learning that Nature made no mistake when she produced chaparral on watersheds. The progress of civilization has dug the grave of many a fine spun theory.

The term chaparral is used in this paper to designate all shrubs and small trees which branch low down near the ground. The word originally came from the Spanish chaparra, an evergreen oak. Now it is employed as a general term to express all kinds of brush growth.

The vegetation of the mountains and of the foothills of southern California is very variable; since it is influenced by climate, soil, altitude, shade and sunshine, northern and southern slopes, wet and dry canyons, drought and rainfall, desert and sea breeze, great heat and intense cold.

The altitude ranges from sea level to 11,600 feet, from subtropic growth to treeless Alpine heights. The northern slopes show, strikingly, desert influences, while the southern is more affected by moist sea breezes.

The damp canyons permit the growth of trees and shrubs with broad leaves while the dry canyons allow only zerophytic growth to exist.

The soil varies from heavy clay to light loam, from sandy plains to gravelly porous beds passing into shaly or granitic slopes. Feldspar and hornblende abound, producing a soil well supplied with potash. Humus is lacking, due in the main to frequent fires which have swept the mountains. The soil is therefore deficient in nitrogen. The character of this paper forbids discussing at length the intimate connection between plant life and the geological formation of the mountain.

The semi-arid conditions and periodic drouths of the San Bernardino Mountain Forest Reserve, have developed a type of chaparral so different from that of the east that it demands more than a passing notice. Besides, the chaparral belt covers all our foothills and the mountain slopes to an elevation of 7000 feet. As a soil cover its value is supreme.

How Shrubs Meet Drouth.--The adaptation of our chaparral to the environment of climate, soil and altitude is a thought and plan of the Creator written in a shrub's root, stem and leaf. To know this law is the first step in reforesting denuded areas.

Annuals, by this law, get rid of root, stem and leaves and preserve their species in seed in drouth, for years, as is the case with poppies, lupines, primroses, gilias and daisies. When the hot, dry season arrives, these plants fall asleep and bide their time, it may be a score of years, when they awake to a new life in a new plant. But not so the chaparral; its life in the shrub must go on and on whether the sun shines or is clouded, or the rain falls or long dry months prevail. To meet these conditions, Nature has produced the law of adaptation. The white sage, to protect itself against exhausting transpiration in the continued dry season, covers both stem and leaves with a glaucous substance. The cactus, for a similar purpose, thickens its stem and reduces its leaves to spines; likewise the Rhus laurina develops thick leathery leaves to save plant moisture. The manzanita reaches the same goal by twisting the petiole of the leaf so as to turn the edge, and not the blade or palm of the leaf, to the sun's rays.

A second adaptation in our chaparral growth to meet the arid conditions, is the reduced leaves. Frequently the leaves are thread, needle or scale formed as in the chamiso, sineceo and squamata. Besides the chaparral often protects itself by a hairy covering which coats the stems, branches and leaves.

The Lupinus chamissonis may be cited as a good example of a small shrub protecting itself with a beautiful coat of fine apprest hairs, each one of which is a tiny silver reflector of light.

A third adaptation and one of first-rate forestry importance is the disposition of a shrub in the semi-arid region to penetrate the soil deep with its roots. This characteristic of our chaparral is universal and stamps its value as a forest cover and soil protector. This shrub adaptation to environment preserves the soil from erosion in time of floods and permits a new growth to spring from the root when fire has swept over the hills. But how is the chaparral to protect it against man who digs it up by the roots and exposes the precipitous slope to the ravages of torrents? We might mention as good examples of chaparral rooting deep in the soil, chamiso, manzanita, buck brush and artemisia, whose roots penetrate the soil five or six feet deep. These deep roots, when they die, form excellent soil pipes and cavities allowing a more rapid percolation of moisture.

The fourth and last adaptation of chaparral to climatic conditions, we would mention, is the tendency of our shrubs to form dense tops by profuse branching. Juniper, chamiso, buck brush, Rhus laurina and integrifolia are all good illustrations of this feature of chaparral. Not only do the shrubs make dense tops but they protect their branches and leaves from attacks of animals and insects by storing up a resinous or aromatic substance which repels the animal kingdom. No known animal will touch the creosote bush. Nature designed these shrubs to do valuable services in this semi-arid region; the first to serve as a windbreak and the second to serve as a sunshade.

Chaparral Belts of San Bernardino.—There are two chaparral belts in the San Bernardino mountains. The first being at Mentone and extends all the way to an elevation of 6000 feet; the second chaparral zone develops at 6000 feet altitude and continues to 9500 feet. But it must be remembered that the last tiny plant found on Grayback is a shrub. Even the Limber pines found on the Alpine heights are degraded into chaparral. Chaparral is, therefore, a widely distributed friend. The shrubs found on the foothill zone do not appear on the greater heights. If we were including the mountain forest trees we should divide the plant life zones as follows:

1. The chaparral zone extending from 1300 feet altitude to 6000 feet.
2. The yellow pine zone 6000 to 9000 feet.
3. The Limber pine zone 9000 to 11,000 feet.
4. The Alpine zone 11,000 to 11,600 feet.

The following are a few of the most common and valuable chaparrals of this region:

Chamiso, Adenostoma fasciculatum, is found abundantly in the foothill chaparral belt. It begins to appear near Mentone, extending eastward, covering wide areas. The leaves are linear, flowers small and greenish-white, wood hard and bark dark grey. It branches from the root, grow from 5 to 6 feet tall. The vigorous roots penetrate the ground 5 or 6 feet. It is plentiful in the Coast Range. It is a valuable chaparral and grows luxuriantly on very dry soil. Another species of chamiso, called sparsifolium, is found in the mountains east of San Diego. The leaves are more scattered, bark yellowish-green, becoming reddish. The flowers are larger and most fragrant. In Lower California we passed through dense fields of this chamiso growing from 6 to 12 feet high. This would make a sweet-scented park shrub. However, being glandular and resinous, both species of chamiso are liable to destruction by fire, especially when they cover wide areas with a dense impenetrable chaparral.

Tree poppy, Dendromecon rigidum, also grows in the first chaparral zone. It is evergreen, has a good root, branches from the ground and attracts attention by its large, yellow flowers. Burbank speaks of the seed of this bush lying dormant in the soil fourteen years before it showed any sign of life. The ability of our chaparral seed to preserve germinating power while lying in the soil for more than a score of years is not generally known. Nature is not blind nor is she impatient; she can wait until conditions are favorable for the little seed to produce its kind. The chaparral seed for half a man's lifetime sleeps on the hillside waiting the moment when, swept down by wind or rain to lower levels and sown broadcast over waste land, it springs into life and develops a forest cover. Take away this power of seed to prolong germinating vitality and fire and drouth would soon make our hills and mesas a desert.

Eriogonums, Eriogonum fasciculatum, grows on the coast of southern California, Santa Barbara southward to Arizonia. The home of the eriogonum is San Bernardino county. Many healthy and interesting specimens of this large family are found in this vicinity.

Deer weed, Hosackia glabra, is remarkable for its wonderful growth in the rainy season. On the northeast of Redlands, hundreds of acres look like a sea of yellow bloom in May and June, while the sun and wind play with the flowering branches and the honey bee makes music to us as it gathers its nectar. This plant is fast disappearing before the destructive fires, but it is fighting a brave battle for existence, as it reforests from the root. It is a suitable low brush cover for soil and rock in the foothill zone. The shrub belongs to the pea family and grows from 2 to 4 feet high.

Tetradymia, Tetradymia squamata, grows on the lower levels, hills and in canyons from 1600 to 2500 feet altitude. The flowers are in heads, yellow and small, branches numerous and leaves reduced to pointed rigid scales. It possesses medicinal properties. The size of the leaves illustrates how nature adapts herself to semi-arid conditions. Moisture being deficient both in air and soil, transpiration by leaf surface is greatly reduced.

Groundsels, Senecio Californicus and Douglasii, are worthy of mention in this list. The Douglasii grows on the Crafton hills. The shrub is 4 feet tall, much branched, and, in April and May, covered with many yellow flowers in heads. The ray flowers are pistillate and disc flowers all fertile. The leaves are from 2 to 3 inches long, entire, linear and numerous. The family is very large comprising 1000 species, but few on Pacific slope. The "dusty miller" cultivated in the gardens belongs to this family.

Baccharis, Emoryii and vincinea grows on sandy soil and beside streams. It is very valuable in keeping streams within their channels. It grows quickly, branches abundantly and roots satisfactorily. The heads are many flowered and dicœcious. The whitish flowers usually terminate the branches. The leaves of the baccharis of the San Bernardino Reserve are narrow and resemble somewhat those of the willow.

Chokecherry, Prunus demissa, is a tall slender shrub, occasionally 12 feet high. The California wild cherry produces abundance of fruit but it is more or less astringent.

California lilac or blue myrtle, Ceanothus thyrsiflorus, is abundant in the chaparral belt and, with others of its species, grows all the way from the valley to high elevations. The California lilac has leaves ovate, shinning above and canescent beneath and branchlets tipped with abundant bright blue flowers in dense racemes. What an exquisite veil of color this shrub spreads over the foothills in April and May! In Yucaipe the ceanothus becomes a beautiful round-topped tree, 15 feet high. On the "Vivian Trail," a species of buckthorn is found spreading like a mat over the soil. The flowers are white, branches spiney, wood wirey, roots deep and well fixed in the ground. We place the ceanothus among our most valuable chaparral friends.

Mountain mahogany, Cercocarpus ledifolius and parvifolius.—This shrub or small tree is often called "feather tree," on account of its elongrated exserted plumose, twisted style. The leaves are alternate, simple, evergreen; wood hard, dark colored, with yellow shades and capable of a fine polish. This is a valuable canyon chaparral and flourishes from 2600 to 9000 feet elevation.

Manzanita grows abundantly in the lower and higher chaparral formations and meets the requirements of forestry conditions in the San Bernardino Forest Reserve in at least three important particulars. Its roots penetrate the ground 5 or 6 feet; it grows equally well in sunshine or shade; it covers a wide area reaching from 2500 to 8000 feet altitude. Few people are unfamiliar with this beautiful shrub with its white or rose-colored flowers in terminal racemes. Fire has ruined many acres of this chaparral.

Western sumach, Rhus integrifolia, is mostly found on the coast. It is a diffusely branched, stout evergreen with cuneate, ovate, thick persistent leaves. On Catalina island its home is on dry hillsides where it covers dense fields, and masses in canyons. It is rare in this locality. Poison oak, Rhus diversiloba, is a well known shrubby plant with erect stems or stouter climbing by rootlets. The leaves give the shrub its name, for the lengths are sometimes ovate, obovate, elliptical, 1 to 3 inches long, obtuse, acutish three lobed. The flowers are whitish. The shrub is more abundant in the Coast Range and extends from Lower California to British Columbia. It would be a more desirable chaparral if its leaves did not contain the virulent poison causing a severe skin eruption attended with intense smarting and itching. All who are liable to be affected by this poisonous shrub had better give it a wide birth when they visit the foothills. Rhus laurina is another species of this family and a most highly commended chaparral. It produces abundant roots, branches and leaves. We hope it may succeed as a reforesting chaparral in our reserve.

Mountain laurel, Umbellularia Californica, is a handsome shrub or small tree and is frequently found in many canyons from Cajon Pass to Mill Creek Falls. Professor Harvey Monroe Hall, Berkeley, considers San Jacinto mountain the southern limit of this tree. The flowers are in umbels greenish white; the leaves are a rich dark green, long, ovate lanceolate and emit an aromatic odor when crushed in the hand. This desirable shrub is suitable for planting in canyons from 3000 to even 6000 feet elevation.

The oaks, Quercus Californica, chrysolepis, lobata and dumosa, when small trees, are most valuable chaparral. They begin with the chamiso and end with the Limber pines and furnish an excellent protector of water supply. The live oak or chrysolepis is a beautiful tree in Yucaipe valley and a common low shrub on the mountain at 6000 feet altitude. We could not do better than to encourage the wide planting of the live oak. Why should we not plant two trees for every one cut down for feul and plant at least one for every child born in our midst? Quercus dumosa, scrub oak, is a still more valuable chaparral. All lovers of mountain climbing have good reason to remember the small shrub with leathery leaves, sinuate-toothed, dark green above, pubescent beneath on young shoots, spinose-toothed, often bearing sessile acorns. The advantage of this shrub to forestry must lie in its abundance in the chaparral belt; in its abililty to strike its roots into sure places in rock fissures and to epually thrive in canyons or on arid slopes.

Black and white sage, Audibertia stachyoides and polystachya, grow together in the chaparral zone. The white sage is known by its whitish tomentose wands and covers large areas with its chaparral ranging from 3 to 11 feet high. Black sage grows from 2 to 5 feet high. The leaves are dark green, flowers massed in whorls on the branches. These are excellent honey-bee shrubs. A new day might dawn for the honey industry, if the bee men would devote some time to reforesting denuded mountain foothills slopes with honey-bee chaparral. Why not reforest some of the burned over areas on the Crafton hills with honey-bee chaparral? The hills would be saved from erosion; ranches farther down the

slope protected from ruinous detritus; and the bee men would have a larger harvest.

Cascara sagrada, Rhamnus purshiana, grows abundantly from Puget Sound to Lower California and is frequently found in our watershed. In Oregon it is called bearwood; Idaho, pigeon berry; California, cascara sagrada. The leaves are elliptical, 2 to 7 inches long, 1 to 3 inches wide; denticulate and deciduous. The shrub has an economic value from a medicinal point of view.

Yerba Santa, Mountain Balm, Eriodictyon glutinosum, deserves notice as an interesting and useful chaparral. The shrub makes its appearance at Mentone at an elevation of 1700 feet and continues to the yellow pine zone. Besides being a good soil cover, it possesses medicinal properties. "It forms," as Dr. Bard writes, "one of the three most important valuable vegetable additions which have been made to the pharmacopœia during the last twenty years." Our thanks are due to the California Indians for these discoveries. The first discovery was cascara sagrada; the second, grindelia; the third, Yerba Santa. This plant is shrubby, grows from 3 to 5 feet high; the leaves are long dentate, dark green above and wholly white beneath; the flowers are in scorpioid cymes and violet purple varying to white. A tomentose variety of Yerba Santa grows in San Diego county and also on San Jacinto mountain.

Sagebrush, Artemisia tridentati, hetrophylla and dracunaloides) ranges from the orange groves to over 8000 feet elevation. The tridentata is the true sagebrush and covers large areas.

Western Chinquapin, Castanopsis chrysophylla, is the most important chaparral on the mountain from 8000 feet altitude to the Alpine height on which the Albacaulis pine is reduced to a shrub. As we ascend Gorgonia Peak by Vivian trail, we pass through areas protected by a dense cover of this valuable chaparral. The Western Chinquapin is distinguished by its coriaceous evergreen, lanceolate leaves, 1 to 4 inches long, green and glabrous above, often very scurfy beneath with yellow scales. The nut is contained in an involucre, covered with stout, divergent spines. The "California Botany" of the Geological Survey limits the highest altitude of this shrub to 6000 feet; but we found the shrub in abundance at 9000 feet and over. Prof. Hall found it growing on San Jacinto mountain at an elevation of 10,805 feet, or at the very summit.

The limits of this paper will not permit us to describe other valuable species of chaparral growing in this vicinity, such as Croton californica, Lupinus chamissonis, Cherry laurel (Prunus ilicifolia), Penstemon antirrhinoides, yucca, cacti, wild rose, juniper, Salvias, Monardellas, Biglovia gravolens glabro, willows, small alders and Limber pines. These, along with other perennials, comprise a list of chaparrals of great value to this city and vicinity.

If the list we have given and specimens suspended on the screen should do no more than add new emphasis to the value of chaparral as a forestry friend, it will not have been written in vain.

PRACTICAL SUGGESTIONS.—This paper may now conclude with a few practical suggestions. A well preserved forest cover of chaparral stands guard on the ramparts on the foothills over our orange groves and cultivated lands on lower levels. It reduces the run-off in times of rainfall, allowing moisture more time to percolate soil and rock, and slits the descending run-off into multitudes of tiny rivulets, thus checking destructive erosion.

There is no more dangerous detritus than that of fine clay. It packs all pores in soil and rock, preventing water from percolating. For this reason the beds of streams become impervious to water; nature must overcome this evil by rolling stones down the stream in time of floods, thereby breaking up the hardpan so that water may sink for further use. Let chaparral disappear from our mountain and canyon slopes, then detritus will flow by the run-off into the water channels, pave them with a hardpan, pack all pores and rock fissures, reducing the under sources of water supply and leaving the run-off beyond control. Geology teaches us that the rock which absorbs least moisture contains most clay element.

Denude the Bear valley watershed of its forest cover of grass, trees and chaparral, and the reservoir will in time be filled with millions of tons of detritus; for the loss of forests has always been followed by floods. Part of the French Alps 100 years ago was cleared of brush and timber. The lesson was one long to be remembered by the French people. Floods regularly ensued on the mountain forest-denuded areas. Villages were destroyed and fields were covered yards deep with sterile gravel and boulders. Already it has cost France millions of dollars to reforest those areas. F. Roth writes: "Not one-half of the denuded areas are reforested yet." We have our chaparral on our mountain to-day, and well may we cultivate, protect and enjoy it.

The great enemy of chaparral is fire. The Creator designed the gums, resins, spines, hairs and aromatic juices so common in our shrubs to repel animals and insects, thus preserving the chaparral from destruction. Experience has shown that animals and insects have been a great enemy of forests. Between 1853 and 1863 the nun moth destroyed in Europe 260,000 acres of timber, and the bark beetle about thirty years ago killed 22,000 acres of spruce in one year. We may surely congratulate ourselves that our San Bernardino mountain chaparral is almost insect-proof; but, without fire-breaks and adequate fire-fighting facilities, we are in danger of losing our chaparral, humus, plant seed and much of our water.

Chaparral forms a wind-break, correcting dust storms; checks evaporation of moisture; protects the soil from erosion; produces humus, which also checks erosion; helps water to percolate and feeds the plant life.

Then it is meet and right that every citizen should take a live interest in forestry. It is the duty of the press to educate the public to put a high value on mountain grasses, shrubs and trees, and to exercise great care in burning brush and putting out camp fires. Our Forest Reserve is becoming more and more a summer resort. Greater will be the danger to our chaparral. The only safety lies in vigilant forest rangers and in an intelligent public who knows the value of blue myrtles and chinquapins to an orange tree, for since June, 1902, no less than 6375 acres of our Forest Reserve have been denuded of chaparral by fires.

THE FIELD.

Lima Bean Growing.

Lima bean raising, as a commercial industry, is confined to a limited section in southern California and the following description of the industry was prepared by Mrs. M. E. Dudley of Ventura county. She says that some 60,000 acres are used for the crop. Three-fourths of the land lies in the fertile Santa Clara valley of the south in Ventura county, and here is situated the largest Lima bean farm in the world, the famous Dixie Thompson ranch of nearly 3000 acres.

Twenty-five years ago the miles of bean fields that may be seen from the car window, in passing through this section, were growing extensive wastes of wild mustard, where herds of cattle, sheep and hogs roamed untended and homes were few. The crude methods used in seeding and harvesting Limas at first precluded a very extensive acreage, but the want of proper machinery was soon supplied, so that to-day one man can easily care for fifty acres without assistance.

The Lima is a pole bean and where summer rains occur could not be raised on a large scale, as they would have to be supported, but in this land of the Lima they lie in great billows along the rows, twining their tendrils about one another and bloom and pod continuously until the moisture is exhausted, or the desperate husbandman cuts their career short by harvesting them.

In the early autumn one may ride for miles, awaiting the coming of the threshing machines. A million and a half dollars is lying out under the golden sunshine within the radius of a few square miles. Anxiously the husbandman looks at the threatening clouds and hopes for fair weather until the gigantic steam thresher, with a capacity of 3000 sacks a day, shall reach his broad fields and put his crop into the sack ready for housing or shipment.

If the crop in the bean belt is very large and the demand for threshing machines is excessive, the impatient husbandman prepares a bean floor and proceeds to tramp out his harvest of Limas. Huge water tanks, dripping with their liquid burden, move round a constantly narrowing circle in the field, until an earthen floor of the proper size is ready to be packed firm by driving horses and vehicles upon it, until it is perfectly solid and smooth. When the floor becomes dry the beans are loaded on huge header wagons and piled upon it. Now is the time when the wives and daughters of the rancher are pressed into service to assist in saving the valuable harvest of Lima beans. Donning sunbonnet and gloves and her shabbiest gown, the California matron who shines as a lady of extreme culture in her club or musicale thinks it no lowering of dignity to lend her aid in this crisis, for farm labors are often a scarce commodity at this time of the year.

My lady mounts a vehicle of some sort and goes driving round and round, hour after hour, over the yielding tons of bean vines, until the seeds are freed from the pods; men with pitchforks constantly turn and move the straw upon the floor, and it is surprising how quickly the product from many tons of straw lies heaped in white mounds, ready to be winnowed and sacked. Tramping is a primitive method of securing one's harvest, but in sunny weather it is not more expensive than threshing by steam.

The housewife strongly objects to the "tramping" of the Limas, as the men who work upon the "bean floor" demand a generous diet and it must be prepared in her kitchen, whereas the steam thresher always provides its own cuisine.

In favorable seasons, in the best soils, twenty-five 80-pound sacks per acre are produced; but 1500 pounds per acre, average, is considered a very good crop.

Lima bean growers state that this crop cannot be produced at a profit at less than $2.50 per cental, with fair crop returns every year. They often sell as low as $2, but some years of short rainfall have brought them up to $4 per hundred weight.

Potato Growing in Southern California.

Many who wish to experiment with potato growing and others who desire to try the effect of fertilizers will find suggestions in a sketch of experience which Mr. Lobingier, a southern California grower, writes for the Los Angeles Cultivator in answer to the following questions:

I have a worn-out grain ranch which I wish to build up, and one of the first crops I think of growing is potatoes. Given a grain field from which the crop has just been removed, how should I fertilize? Commercial or stable manure? If commercial fertilizer, ready mixed and complete, or should the potash, phosphoric acid and nitrogen be applied separately? If so, in what form and in what quantity per acre? Can the fall crop of potatoes be removed and green manuring undertaken, the leguminous crop to be plowed under, say, in March, and leave the ground in shape for spring planting of potatoes? If spring-grown potatoes are to be used for seed, how may I be sure that they are ripe enough to give a good stand in the fall planting? Do you plant in the moon?

I take it for granted there is plenty of water for irrigation and that the soil is fairly well adapted to the potato crop. If the land is not already graded for irrigation, the first thing to do is to grade it so there can be an even distribution of water. It will pay well to take pains with this portion of the work. If done right, it is done for all time. It is costly and vexatious work trying to irrigate a crop on land not properly graded. Better take half the area and do it right, than slight this important part of the work. Nearly all our lands are too deep to plow so that it will be fine and mellow by the time the hay crop comes off, in which case it will be necessary to give the land an irrigation, after which it may be plowed.

FERTILIZER.—I would use commercial fertilizer, under the conditions in hand, say, 200 pounds sulphate of potash and 500 pounds pure bone dust per acre. It is not necessary to mix these before applying, nor will it do harm to mix them. I have found it easier to apply separately. Dampen them, which can be done by emptying upon smooth, hard ground or some tight floor, and, after wetting, turn over and over with a shovel until all is dampened. If this is not done, then sow when there is no wind. Sow this fertilizer evenly over the plowed ground and thoroughly harrow it in. In land thus prepared and fertilized, plant your seed in rows that are 3 feet apart and plant the seed 12 to 15 inches apart in the row.

PLANTING.—Scarcely any two communities pursue just the same method in planting; but an old Chinaman, who works a ranch adjoining, used the method illustrated herewith this season with very satisfactory results.

A large shovel, such as is commonly used to make furrows for irrigating, attached to a one-horse cultivator, is a good tool with which to open the furrows. After the seed is planted, pass between the rows on the ridges with the same tool and you cover the seed very quickly. After all have been covered, pass over the rows lengthwise with a leveler drawn by two horses instead of one. A spike-toothed harrow, with a scantling 2x4 placed underneath at an angle of 45°, or more, if it clogs, makes a good leveler, going lengthwise and taking three rows at a time.

NITRATE OF SODA.—After the potatoes are up, showing 3 or 4 inches above ground, apply 100 pounds per acre of nitrate of soda, and in about fifteen or twenty days thereafter give another application in the same quantity. Never apply nitrate of soda to any crop when it is not in active growth. It is completely soluble and would be lost if the plant were not in active growth so that it could appropriate it at once. In applying 200 pounds per acre of nitrate of soda it is much better to give the two applications, as outlined above, than to apply all at one time. It can be sown broadcast if done when the foliage is dry. Break up all coarse lumps before sowing.

CULTIVATION.—It goes without saying that cultivation and irrigation must be given the crop at proper times and as it hardly seems possible to grow a late crop of potatoes without blight, it will be necessary to spray with Bordeaux mixture two or three times at intervals of one to three weeks.

I would answer "yes" to the question about green manuring, but I should want to know a little more as to querist's aims in building up this land before answering that it would be good policy to follow with a second crop of potatoes. If the aim is to simply build up the land that it may produce good crops of hay, then I should advise sowing field peas, plowing under in the spring, and allow the land to lie fallow until fall, when it can be sown to grain.

I never attempt to grow potatoes twice in succession on the same land if I can avoid it. I know it is done, but the chances for a profitable crop the second time are not often good. Better rotate with some other crop for a season between.

SEED.—The only way I know you may be sure the spring grown crop is ripe enough to give a good stand in the fall planting, is to get the seed from some grower who is reliable and accept his statement that they have been properly ripened. It is an important factor in fall planting to have well ripened seed. If, when the spring crop is dug, those that are wanted for seed are left on the field and carefully covered with the old vines, allowing the potatoes to lie in small piles for fifteen or twenty days, they will usually cure so as to give a good stand. And the fall crop should be planted from the 1st to the 10th of August, if it is possible to do so.

IN THE MOON.—I do not plant "in the moon." It

seems marvelous that any sane person can be found in this age with faith in a superstition so ridiculous as that relating to the moon's influence on gardening operations. I have been in horticultural work from boyhood and have grown many, many millions of plants and I think I should have had a sorry time had I attempted to plant anything in the proper phase of the moon. The laws that govern plant growth lay entirely outside the moon's influence. I have unbounded faith in good seed, fertile soil, thorough tillage, and proper atmospheric conditions, producing a good crop, and none whatever in the moon.

Agricultural Review.

Butte.

ORANGE GROWERS ORGANIZE.—Oroville special to Sacramento Bee: The orange growers of Butte county have at last decided to organize. At a recent meeting a constitution and by-laws were drawn up and sent to the Secretary of State. As soon as the charter is received the organization will be perfected. The growers hope that by organizing they will be enabled to get a better price for their crops and create new and better markets.

KILLED VALUABLE COW AND CALF.—Chico Enterprise: Monday morning, after milking, John Lucas of the Fourteen-Mile House on the Humboldt road, noticed that there was something wrong with the milk he had taken from the cow and poured it out on the ground. The cow has a calf pretty well grown. Yesterday morning the cow and the calf both went mad and had to be shot. It is believed that the cow and her calf went mad of hydrophobia caused by skunk bite.

GRASSHOPPERS ON CATTLE RANGES.—Chico special to Sacramento Bee, May 20: Grasshoppers in innumerable numbers have made their appearance in the lower foothills which skirt this side of the valley. Parties who have had occasion to visit stock ranges in that section during the past few days report that they rise in clouds before the traveler, and that the rocks are covered with them. So far they seem to be immature, as they are of very small size. The section in which they are so common at present is a comparatively barren stretch used for sheep and cattle ranges, and covered with sparse vegetation, but it is feared that as they attain their growth and green feed becomes scarce they will begin a migration to the fields below and wreak havoc with the crops. In their present location they can do but slight harm. Those who have investigated state they exist in greater numbers than ever known before in this section.

Glenn.

WOOL RETURNS.—Willows Journal: Zike Simpson, an Orland sheepman, beat the record here last year in the wool crop. From 10,200 head of sheep he received 56,000 pounds of wool, which he sold for 25c per pound, or $14,000.

BIG SHIPMENTS OF LAMBS.—Willows Journal, May 19: The special train of thirty-five cars loaded with 5000 lambs for the Chicago market pulled out of Willows at eight o'clock last night. The lambs were all purchased from J. R. Talbot and J. R. Garnet by an Eastern stock buyer and are the first sheep over shipped from this point to Chicago. Twenty-six carloads of cattle will leave this evening for Tacoma.

Humboldt.

CREAMERY PRICES.—Arcata Union, May 17: Creameries in this section paid this month as follows: Arcata Consolidated and Peterson & Laurenson, 20 cents; Minor, 19½ cents. Creameries in the Ferndale section paid as follows: Abrahamsen, 20 cents; Capitol, 20½ cents; Central, 20¾ cents; Crown, 19½ cents; Eel River, 20½ cent; Excelsior, 20¾ cents; Ferndale, 19½ cents; Grizzly Bluff, 21½ cents; Pioneer, 20½ cents; Cream City, 20 cents; Riverside, 20½ cents.

Kings.

WILD BLACKBERRIES.—Hanford Sentinel, May 18: Every spring "blackberrying" on Kings river is one of the pleasures of life here, that is when the mosquitoes are not numerous and the berries are. This season the conditions are favorable, there being an abundance of the delicious ripe berries and the weather is such as to make the work of picking comfortable. Scott Bloyd and a party of five went to the river, near Hardwick, last Wednesday and they brought home twenty gallons of the fruit.

Mendocino.

FIRST TEST OF DEER LAW.—The first test of the deer law was made in Mendocino county Tuesday, when Edward Swan was tried for having several doe hides in his possession. The game wardens thought they had a clear case and were confident of conviction until the jury returned a verdict of not guilty. The wardens made a number of other arrests recently and the violators of the law in each instance paid their fines, fearing to risk a jury trial.

Merced.

SHIPPING BEEVES.—Express, May 20: For the first time in ten years fat beeves are being shipped to Eastern and Northern markets in large quantities, owing to the fact that feed conditions have been so excellent this season. During the past week eighty-five cars of fat cattle have been shipped from Merced county to the Chicago market, and 1138 head of beeves have been sent to Seattle.

Monterey.

GRAIN FIRES IN THE SOUTH.—Salinas Index, May 18: Reports from the southern part of the county are to the effect that two serious grain fires have visited that section. Supervisor W. H. H. Metz lost over fifty acres of fine grain and the Spreckels Land Co. lost about the same amount. The fire is supposed to have originated from a spark from a passing locomotive. While the grain is not dry enough to be entirely consumed, the bottom leaves are dry and the fire spread in this way, leaving the stalk standing and stripped of the dry leaves, while the grain is cooked and dead.

Orange.

SUGAR BEETS.—Anaheim Gazette, May 18: West of the river Arthur Garner has nearly finished planting 260 acres of beets: A. J. Sanderson and W. R. Miller will each have about 200 acres; E. N. Devaul, 150 acres; Holt & Newell, 100 acres, besides many others who have large areas in the same crop, all of whom are enthusiastic over the prospects for a heavy crop and correspondingly satisfactory returns. A recent estimate of acreage makes it probable that beet slicing may begin about July 1, the exact date being dependent upon conditions of sunshine in ripening the gelds.

Placer.

FRUIT GROWERS TO STAND TOGETHER.—Loomis special to Sacramento Bee, May 20: At the meeting of the Placer County Fruit Grower's Protective Association, held at Loomis yesterday, the members considered the matter of the sale of clingstone peaches to the canneries. The growers decided to unite and stand together in the matter. Many letters have been received from the leading canneries. Inquiries have been made and quotations asked for more than the total crop available for the season. The secretary presented crop reports from the leading fruit districts and an intelligent idea of existing conditions prevails in the minds of the producers. It seems clear that Placer and Sutter counties will come nearer having full crops of canning peaches than any other places. The Bartlett pear crop will be light. About one-half crop is the best reported. In not a single instance was a full crop heard from. From 50% down to nothing seems to be the condition. Apricots seem to be heavy, with shot hole fungus prevalent in many places. Plums and prunes are generally good.

San Bernardino.

GOOD BYE, WORMS.—Sun, May 19: The hot weather of the last two days is welcome, in that it means a death sentence to the army worms which have been working such damage to the orange crops in some vicinities.

San Joaquin.

BEES STING FINE HORSE TO DEATH.—Lodi Sentinel: Bees stung to death a valuable horse owned by Mrs. Mohrman of Clements a few days ago. At the Mohrman home, just south of Clements, the bees had made their home between the double walls of the granary. The bees were angered by an attempt made to rob them of their honey. The horse was nearby and they stung the poor equine until it died.

Santa Barbara.

SEED RAISING PROFITABLE.—Lompoc Record: An industry that has proven to be very profitable in this valley, as far as it has been tried, is that of raising various kinds of seeds for seed houses. This has been the case with beans and turnip seed, especially. These seeds are grown under contract and at a fixed price from the seed firms. Seed beans have given returns of from $75 to $100 per acre, while turnip seeds have brought about the same. The principal variety of turnip seeds grown is the big purple tops. There are some thirty or forty acres planted to these turnips near Lompoc this year. Mr. Bueterbaugh has fifteen acres, A. Henning has ten acres and some others have smaller patches.



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Santa Clara.

ONION BLIGHT.—Journal: Seedmen throughout the entire valley are complaining bitterly of the blight to the onion crop. Recently we were driven over a seed farm and were shown the plants affected. The ranch in question was in an excellent state of cultivation and the plants looked strong and thrifty. As the seed stalk matures that part affected by the blight turns a yellow color, droops and dies. Besides the diseased stalks, healthy stalks with seeds maturing are growing on the same plant. One prominent seedman informed us that his firm had sprayed several hundred acres of onion seed and had found that the blight had in some degree been checked. While the crop will not be such a heavy yield as in former years, yet the entire crop is not injured. There will be a fair yield of the seeds and the shortage in quantity will result in a material advance in price. The seed crops of lettuce, radishes, carrots, various flowers, etc., appear to be in a healthy condition.

SHORT PRUNE CROP.—There now appears to be no question that the prune crop of 1905 in Santa Clara valley will be below the average, with about one-third of a crop as the estimate of those orchardists who are posted on the prune situation. At a meeting of the Santa Clara County Fruit Exchange, held in San Jose, Col. Philo Hersey, in a speech to the 500 stockholders of the Exchange, stated that the prune crop of Santa Clara county could not exceed one-third of an average crop. He advised not only the members of the Exchange but all prune raisers to prepare to hold their crop for a 3-cent basis.

Solano.

SUCCESS OF ALFALFA GROWING.—Republican: On some of the ranches upon which alfalfa is being grown the industry is being carried on to a large extent. For the most part the land devoted to the crop is in comparatively small tracts, ranging from ten to thirty acres, and the owners are satisfied with the success that has attained their efforts. A striking instance of the profits to be derived from land devoted to alfalfa in that section is one tract of 160 acres situated about a mile from the town. This tract was formerly devoted to grain, yielding but small net profit. Since being divided into small tracts and seeded to alfalfa, eight owners derive a profitable income from the land in addition to the support of several families. Some of the tracts are used for pasturage for dairy stock while on others the crop is cut for hay, yielding from three to five harvests each year. The crop grows the year round, being irrigated during the dry season with water pumped from wells by electric power. The system of irrigation is found to be successful and economical.

MAY PAY FARMERS.—A dispatch from Benicia says: The farmers near Benicia who have suffered losses to stock and crops aggregating $100,000 are to receive damages from the Selby Smelter, the fumes from which, it is alleged, caused the damage. For the last two years stock has been dying off in large numbers and post-mortem examinations made by Veterinary Surgeon J. T. Sullivan of Suisun and others showed that their deaths were due to sulphur and lead poisoning caused by the fumes of the Selby plant.

Sonoma.

PRUNE GROWERS ORGANIZE.—A dispatch from Healdsburg under date of May 19 says: A new prune organization has just been formed in Healdsburg, in an effort to bring better returns to the growers. The organization has taken the name of "The Healdsburg Prune Growers' Union," and the following representative growers have been elected officers: President, O. G. Wagers; vice-president, J. M. Higgins; treasurer, Walter Field; business manager, Allen R. Gallaway; clerk, J. F. Miller. The board of directors is made up of the following: A. R. Gallaway, O. G. Wagers, Lorin Foremen, J. M. Higgins and Walter Field. It is the intention of the organization to place a few hundred tons of first-quality dried prunes, grown in this immediate vicinity, under one head, which they believe will



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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.
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enable them to command better prices than when offerings are made in small lots. A good many of the leading growers here have signed the articles of agreement, which are for one year only.

HOP MEN ARE WORRIED.—Santa Rosa special to Sacramento Bee: Growers of hops in Sonoma county are feeling some apprehension for the coming crop because of the ravages of a small snail and from the long spell of cold, damp weather. The outlook at the present time is bad, and the indications are that the coming crop will not be nearly so heavy as last season. Investigations are now being made by growers and dealers to ascertain the probable amount of the decrease as compared with that of last season.

CHERRY CROP A FAILURE.—Petaluma Argus, May 20: The local fruit men state that the cherry crop in this vicinity will be very near a total failure. Some of the biggest orchards will have no crops whatever and the usual work of picking cherries, in which many men and boys usually engage, will be wanting this season.

HOPS NOT LOOKING WELL.—Santa Rosa Democrat, May 19: Offers of 16 to 16½ cents have been made for the best growths of Sonomas, while contracts have been made in Sacramento at 15 to 15½ cents. The general outlook for the 1905 crop is not considered favorable, as the cold weather has delayed the growth of the vines, which are not coming up as they should at this season of the year. The work of training is fully three weeks late, and there is also complaint of a good many missing hills which naturally means a shortage in the production. The new acreage of hops planted in both Sacramento and Sonoma county, however, is making a fine growth, and it is estimated that they will more than make up the shortage of the old yards.

BIG EGG PRODUCERS.—W. I. Beeson of Healdsburg claims to have all records broken for the number of eggs laid per hen. From 500 hens he secured an average of 206 eggs per hen for the year. He has been interested in the business for some time, and says his smallest net income was $1.50 per hen annually, while he has made as high as $2.50 annually off each hen. Mr. Beeson raises cabbages, kale and rape for green food and keeps only the Brown Leghorn variety of poultry. He now has 500 grown hens and 1000 young chicks, and is furnishing many eggs to Petaluma chicken men for setting this year, as it is said that they have been unable with the White Leghorn to get an average of 200 eggs per hen annually.

PRUNE CROP WILL BE GOOD.—Santa Rosa Republican: Horticultural Commissioner O. E. Bremner is satisfied that there will be a good crop of prunes in Sonoma during this season, notwithstanding the first reports of farmers that there would be a decided shortage. The more he investigates the prune situation the better prospects there seem to him to be for a good crop—not an extra heavy yield, but good quality prunes.

Stanislaus.

GRASSHOPPERS NUMEROUS.—Modesto News: County Horticultural Commissioner Rutherford intends to take effective measures to prevent the spread of grasshoppers and will burn off the grass on the fields where they are most numerous, as soon as it is a little dryer and before the insects are able to fly. If farmers take proper precautions there will be little or no damage to their trees or vines. The most effective remedy is a composition of arsenic, bran and molasses, which, placed around vines, trees or vegetables, is sure death to the grasshoppers. The Turlock district is not the only one threatened with a grasshopper epidemic, as W. A. Harter states that he has discovered that there are thousands of young grasshoppers in his alfalfa fields, south of Ceres. Mr. Harter also states that neighboring fields are infested in the same way and that unless something is done to stamp out the evil serious damage will be done. The farmers are advised to examine their fields closely for the pests, and to report the matter to the horticultural commissioners, in order that a systematic effort may be made to eradicate them.

WILL TIE TO MERINOS.—Modesto Herald; Frank Gomes, a well-known farmer and sheepman on Dry creek, near Modesto, has decided to dispose of his quite extensive holdings of ordinary sheep and invest in 800 Merino ewes and a few bucks that he will keep on the place. He is tired of following his present flocks from plain to mountain and pasture to pasture. He estimates that he can support 600 Merinos on 100 acres of alfalfa, and will put in that acreage and fence and cross-fence it. Each ewe, he says, will yield him $5 a year.

Sutter.

THE CHERRY CROP. — Yuba City Farmer: The cherry season in this locality is about over, and from all reports of growers the crop is about half. The black varieties turned off very well, but the Royal Annes were very light.

Tulare.

HEN ADOPTS LITTER OF KITTENS.—Register: W. A. Higgins has among his live stock possessions a bantam hen, likewise a cat and four diminutive kittens. The hen had just finished up her spring run as a layer and was preparing to do a little incubating when she discovered that the cat had jumped her claim, and the next thing that surprised her was a litter of kittens. She became greatly interested, at once abandoned her original intention, and is now acting in the capacity of mother while the old cat is away, and it may be remarked in passing that the latter is human enough to impose on good nature to the limit. The bantam broods the kittens, taking the utmost care that they are protected and kept warm, and the other day when a rainstorm came up she was greatly perturbed until she got them all under her wings.

SALE OF VINEYARD.—A Visalia dispatch says: Twenty acres of vineyard, belonging to the estate of William Vance, deceased, were disposed of by Public Administrator T. M. Dungan. E. C. Snell of Orosi was the purchaser, paying $2750 He was also the first bidder, starting off at a $2000 clip. The acreage is planted to three-year-old vines, located near Orosi, and is valuable property.

FARMER URGES PLANTING OF RYE.—Register, May 19: M. L. Weigle yesterday brought to town a sample of rye grown on his place, and which crop is now being cut for hay. The stalks are between 5 and 6 feet in length and the heads show that it is just passing out of the blossom, the proper stage, according to Mr. Weigle, to cut it for hay, as any further development will result in a hardening of the stalk. Mr. Weigle is a strong advocate of the planting of this forage and fodder plant. In the winter it affords a never-failing and nutritious pasturage, and in the spring when cattle are turned out upon the first watery growth of new feed a little of the rye hay fed at night has a very beneficial effect. He has fifteen acres, and upon this he pastured thirty calves all winter, keeping them fat and strong, and now he will get a splendid crop of hay.

Ventura.

SOME POTATOES. — Oxnard Courier, May 19: Ed Vinyard brought in one day this week two potatoes, either of which measures over 11 inches in circumference and 7 inches in length, which were raised this year, the seed having been planted February 22.

Yuba.

WHEAT NOT HEALTHY. — Marysville Democrat: In spite of the fact that the spring weather has been excellent for vegetation of all kinds, yet there appears to be something the matter with the growth of the wheat that is rather discouraging to the ranchers. The young stalks do not have a healthy appearance and cheat seems to have the better of the grain in many localities.

THINNING PEACHES.—The thinning of peaches in the orchards in this vicinity has commenced and will continue for some weeks. The trees and fruit look much better than they did a few weeks ago, and the crop conditions are much better, for this variety of fruit at least.

Oregon.

HOPS IN BAD SHAPE.—Salem Statesman: The prospects for the hop crop of this season are very discouraging. Reports received from all portions of the State are given to this effect. In many sections, it is said, there will not be two-thirds of a crop. This is due to the ravages of grub worms, red spiders, lice and lack of sufficient moisture in the proper season. The old yards have suffered greatest.

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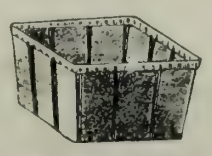
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The Home Circle.

The Village Rubbersmith.

Under a spreading blacksmith sign,
The village blacksmith sat;
He heard the chuf-chuf-chuf and said,
"Where is my business at?
The road is full of horseless things,
And bikes and such as that."

The smith was deeply in the dumps;
Ah! that was plain to see.
His wink-eye winked a knowing wink
Up at the chestnut tree;
And then he said, "These horseless things
Have put a horse on me."

And through his crisp and curly hair
His sinewy hand he ran.
Says he, "I'll get some different tools.
As well as any man
I'll mend a punctured rubber tire—
I'll charge whate'er I can."

Week in, week out, from morn till night
His bellows blows no fires.
Instead it feeds a rubber tube,
That blows up rubber tires.
He has a tank of gasoline,
And cement, pipes and wires.

And children coming home from school
Rubber in the open door,
They rubber at the rubber tube
A-rubbering 'round the floor,
They rubber at the rubbersmith,
Who rubbers tires that tore.

He can't go, Sunday, to the church,
For that's his busy day.
Some city chauffeur's in the lurch,
And here is work—and pay.
The chauffeur buys some gasoline
And chuf-chufs on his way.

But never mind, his daughter's there,
Up in the choir stand;
And as she holds the hymn book high,
Shows diamonds on each hand;
For daughter's buying jewelry
And Dad is buying land.

Repairing and pumping and mending,
Onward through life he goes,
Each morning sees some tire break,
Each evening sees it close.
Something mended, somebody done,
Puts money in his clothes.

Thanks, thanks to thee, my worthy friend,
On the lesson I'll meditate.
All must at times get different tools,
This world will never wait;
If we would live the strenuous life,
We must keep up to date. —J. N. H.

How Milligan Started.

"You never heard of that?" asked Jimmie.

"No, I never did, Jimmie," I answered, my curiosity awakened by Jimmie's tone. When ever Jimmie had that tone of voice there was something back of it.

"Egad!" he snickered out between his old snags of teeth as he removed his pipe and spit into the fireplace. "I thought every man on the ranch new that." He replaced his pipe and looked for a moment into the fire.

"I'm one who never heard it, Jimmie," I answered. "Let's hear it."

Milligan was the richest cattleman in north Texas. Jimmie was the philosopher of the ranch, and Milligan's boon companion. He was valuable for his general fund of information, and for his good judgement generally. He was a real philosopher, too. No backwoods variety, but an educated Scotchman, who had let drink get away with him, but who still held some of the vital spark of superiority. He was about 56.

"Let's have it, Jimmie," I asked.

"This is the thousand and oneth time I have told it, and it's just as good as it ever was.

"You see, Schafer, Milligan's boss, owned four or five ranches in Texas and Indian Territory. Some fool New Yorkers, who had more money than brains, concluded they wanted to buy a ranch to rusticate on. Wanted a ranch-er-er and some cattle, you know; so they just jumped on their palace car and started out to find one. After they'd knocked around over the west awhile, they landed down in Texas, and heard of Schafer's ranches. Schafer always kept his ranches up in first-class order, but some were larger than others. Some only had 3000 or 4000 head of cattle on them, some had 20,000 head.

"They told Shafer they wanted a ranch, a good one, and that they didn't care much about the price. That suited Shafer. He toted them around over the western part of the State, treating them fine and showing them what he had. Finally, they concluded that what was known as the 'Butterfly' ranch, up in the northern part of the State, was just what they wanted. It only had about 4000 head of cattle, but the buildings were in first-class condition, and it had artesian wells, orchards, fish ponds and places for the New Yorkers to hang their hammocks on. The New Yorkers thought it would be such a fine place to bring their families and spend the summer, and fish, and smell the wild grass, and such things, and they just acted like spoiled babies all the way through.

"Shafer told them his price, and that he would take $15 a head for the cattle. He said he didn't know just how many cattle it contained, but he thought about 4000 head, but that Milligan, his foreman, would deliver the cattle to them inside of three days, and it must be a cash sale.

"That just suited them, but Shafer must give them a week in which to arrange for the money.

"'All right,' drawled Shafer, 'if you can't get it sooner. Make arrangements for the money an' come up in a week an' Milligan'll turn everything over to you.'

"This tickled the New Yorkers. One of them had a couple of boys about 14 and 15 years of age, respectively, and they cut a lot of shines around there at the prospect of being out on the ranch, looking after cattle. They wanted to be cowboys, and learn to throw a rope. Their daddy told them he'd hire them and pay them good wages.

"Then Shafer went home and gave Milligan the wink.

"In a week they came back to receive the cattle, and Milligan was there to count them out. The two boys were all togged out in knee breeches and wore light overcoats (it was springtime), and each one had a field glass to look at the cattle with and to help them count them. They hiked around like two ninnies, and it was Pappy this, and Pappy that, and 'Pappy, how much will you give me to do this'; and so on.

"Running along near the south side of the ranch was a long, rough ridge, 30 or 40 feet high, and about a mile long, and Milligan told the New Yorkers to station themselves on the north side of the ridge, where they could see the cattle and count them easily as the cowboys would drive them up. They did this. The cowboys would drive along a bunch, and the New Yorkers would count them, and so would Milligan, who stood a little way off from them. Then the cowboys would move the cattle on and another bunch would come up to be counted. While they were driving up the next bunch, the cowboys would push the first bunch on around the farther end of the ridge, or run them through a little opening somewhere along the line and pretty soon bring them back to be counted again.

"Well, they just kept circling the cattle around and around, counting them over all day. The New Yorkers thought it was one of the finest herds of cattle they had ever seen."

"'It's a nice, even lot of cattle,' one of them would say, when one of the bunches they had counted would come back.

"'Just like so many eggs," the other would say.

"'Just like so many twins, Pappy,' one of the youngsters would chirp in.

"'So many the same age and size, well picked, good sellers,' the older New Yorker would say, in a kind of knowing way, as if he had been a cattleman all of his life.

"'Yes, that's right, that's right,' the other would say.

"Well, the boys kept driving them around the ridge and bringing them back so much that the cattle began to get tired, and Milligan gave the cowboys some kind of a sign to let up.

"Then the cowboys all rode up behind a herd, as if it were the last bunch.

"'Got all at last, have you, boys?' asked Milligan.

"'Yes, I think we have got 'em all,' answered one of the cowboys, who had to bite his lips to keep from bursting out laughing.

"'Nice lot of steers, ain't they?' asked Milligan.

"'As nice a lot of cattle as I ever saw," answered one of the New Yorkers.

"'Just looked like they might all be twins,' said the other New Yorker.

"'Just like so many eggs,' chirped in the two youngsters.

"'Yes, they were,' added one of the cowboys, who prodded his spur into his pony's side and made it caper round so that they wouldn't notice the smile on his face.

"Then Milligan and the New Yorkers began adding up to see how many cattle they had counted.

"'Zounds! I make 7600,' said the older New Yorker. I didn't think there were that many. Shafer said there were only about 4000.'

"'Well, Shafer don't always know,' answered Milligan. 'That's what there was about eighteen months ago, but we've added to the herd since then. Shafer forgot that. He's never out here much, anyhow. They are worth the money, so many of the same grade. I doubt if Shafer would want to stick to the sale if he knowed there was that many in the herd.'

"'Couldn't help himself now,' broke in the other New Yorker. 'We've contracted for them, and paid earnest money on them, and they're ours.'

"'They're all ours now, ain't they, Pappy?' chirped in one of the youngsters.

"'Yes, they're all yours now,' said one of the cowboys, wheeling his pony and riding off.

"They went back to town and paid Milligan for 7600 head of cattle. There were not quite 4000 in the herd. Old Shafer had told Milligan that he might have all over 5000 head that he sold, but when he heard how many Milligan got off on the chaps it was too good, and he wanted Milligan to cut it in two with him.

"Milligan told him he got all he wanted and that he would just keep the money for 2600 head of cattle. They quarreled, and the trick leaked out, but Milligan kept the money.

"The New Yorkers carried the matter into the courts, but they never could prove anything, so they sold out and went back to New York, and didn't smell the wild grass and hear the coyotes howl—very much.

"Milligan still has the cowboys that helped him out in the deal, and whenever they see a bunch of cattle one of them will say, 'Nice, even bunch of steers, Mill.' and Milligan will say, 'Yes, just like so many eggs,'" and Jimmie laughed heartily before refilling his pipe.—Geo. E. McCullock.

Learning to Swim.

When the baths are open, those who cannot yet swim should turn their attention to that useful art. That which prevents most persons from learning how to keep afloat in the water for hours, with no further assistance than that which nature affords, is the fear of water. In many cases this fear can never be overcome, but if the tyro will serve to conquer it, confidence will be gained. This is one thing to remember: It is impossible to sink if you keep your lungs inflated, your mouth shut, your nostrils just above the surface. If possible, be accompanied by friends, or one friend, who can swim well. Inflate the chest at the same time allowing the body to slip into the water easily. Draw up the legs as the hands are moved away from the body in a semi-circular movement, kick out like a frog, and repeat the movement. Good swimmers move along as easily as if they were walking or dancing naturally and gracefully.

One of the greatest secrets of swimming is in letting the lower part of the body sink as far into the water as it will, with just the end of the nose above the water. The angle at which the body should rest is approximately about 30°. There is no need to breathe more quickly or more laboriously than usual. Swimming should not cause one to lose his breath in half as great a degree as running, when knack of breathing properly is gained.

Always keep the fingers tightly closed, if any speed would be had. The force of the closed hand against the water impels the body forward, of course, with much greater velocity than if the fingers were open. Nearly all beginners are addicted to the practice of keeping the fingers separated.

Swimming on the side is an easy, graceful way of covering distance in the water. Place the right cheek against the water, when the right arm and right shoulder will be partially submerged. The left arm and hand will be raised slightly above, and the stroke for this side will be a short, quick one, the elbow away from the body. The right hand will subscribe a circular, long, downward and backward movement, the palm almost literally pulling the swimmer forward. The legs are drawn and kicked back, as in the "breast stroke." Some swimmers give an extra kick with the right leg before drawing both for the kick out and back.

The "breast stroke" is when both hands are brought towards the breast, on which the swimmer rests, then extended forwards and back in a circular movement until they reach far back. The arch movement alternates with the leg movement. This is the steady way of moving through the water, and is an easy method to learn.

How to swim on the back is not hard to learn. The lungs should be inflated and the legs allowed to drop as far down as they will. The arms may be folded on the breast. Sometimes, if paddled about, they will allow the hands to sink. Locomotion is gained by drawing up the legs and kicking straight out. This method of swimming is a great rest after other methods have been used continuously for some distance. Floating is easily acquired after the art of swimming on the back has been learned.

There are many tricks which can be learned easily after a swimmer has acquired some knowledge of how to sustain himself in the water. These are graceful and pretty and are certain to gain applause for the performer, for while they are not difficult, there are few who are certain enough of themselves to attempt them. The art of keeping afloat in the water is one which every one should acquire, for it may be of use at some time. When once learned it is never forgotten.—Health.

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Hints to Housekeepers.

A new method of blanching almonds is to soak them overnight in cold water. This is said to be an improvement on the usual method of throwing them into boiling water.

Perhaps it is not generally known that left-overs from a gelatine dish can be remoulded. The jelly should be warmed just enough to melt, poured into a mould, and placed on ice.

The appearance of meat pie crusts, and in fact almost any pastry, is much improved by brushing with a mixture made by beating the yolk of an egg in two tablespoonfuls of milk. The glazing should be done about ten minutes before the pastry is taken from the oven.

Where soiled clothes have to be kept in the bathroom, as in crowded flat-houses this must be, a small barrel painted inside and out, with holes in the side for ventilation, is better than a hamper. That is to say, it is better for the people in the house and just as good for the clothes.

Baking powder tins should not be recklessly thrown away. They are useful in a number of ways, as for example, moulding small jellies, creams, or rice desserts. They make fine little moulds in which to boil or steam individual puddings, and they often come in handy as receptacles.

A few drops of kerosene added to the starch makes ironing easier and lends a gloss to the linen. Flies hate the odor of kerosene, it is said, and if the outside of a screen door be rubbed with the oil, the opening of the door will not be followed by an inrush of the winged pests. There is only one drawback to that expedient. The family do not like the odor of kerosene any better than the flies do.

The value of the onion in the dietary has been made the subject of much doggerel verse. All agree that health and beauty wait on the fragrant vegetable.

"Eat onions in May,
No doctor you'll pay,"

runs one old verse, while another promises a good complexion to the onion eater thus:

"Fresh onions and leek,
New skin in a week."

Domestic Hints.

BAKED HALIBUT — Purchase three pounds of fish and see that it is cut in 2 inch strips. Remove the skin and squeeze the juice of two lemons over the fish and add a good sprinkling of pepper and salt. Allow it to stand thus for an hour, after which dip in melted butter, dredge with flour and bake thirty minutes. When done, dust the top with grated hard-boiled eggs and garnish with parsley. Serve with white sauce.

OLD-TIME BUNS.—Mix to a stiff batter three cups of milk, one of sugar, a yeast cake (or cup of yeast, as it used to be), and the necessary quantity of flour. Mix at noon and allow the batter to rise until night, then add a cupful of sugar, one of currants, one of molasses, a teaspoonful of soda, one of nutmeg, one-half teaspoonful of cinnamon, the same of ground cloves. Mix again to a stiff batter, set to rise over night, make into shapes and when baked wash the tops with raw egg.

JELLIED CUTLETS.—Put the best end of a neck of lamb in a saucepan with an onion, some bay leaves, pepper and salt, see that the lid is fixed on tightly, and set over the fire to braise until quite tender. Take out, and when quite cold cut into neat cutlets. Put some gelatine or some isinglass in some stock, and color a nice dark brown, dip the cutlet in this and put on one side until cold. Arrange them in the middle of a dish and put round some chopped lettuce and tomatoes cut in slices on the top.

STUFFED GREEN PEPPERS —Cut a small piece off the stem end of the peppers, or cut them in two lengthwise, removing the seeds and partitions. Boil them for five minutes, drain, and fill with three Bermuda onions chopped tender, chopped and mixed with a tablespoonful of minced parsley, a scant cupful of breadcrumbs, a few drops of lemon juice, salt, cayenne, a little celery salt and two tablespoonfuls of mushroom catsup. Bake the stuffed peppers in a shallow pan in a hot oven, basting frequently with melted butter.

BANANA SALAD.—Make a strong lemon jelly, omitting sugar. Mould this in a ring mould, and when quite firm fill the hollow with sliced bananas mixed with a cream mayonnaise. If the jelly is colored with spinach green the salad will be the more attractive.

It is a comfort to be told, as people who make a specialty of curing facial defects almost always tell their patients, that every one looks homelier in the mirror than in reality. How many women dread unspeakably the task of buying a new hat or having their photograph taken, and for no other reason than that it obliges them to look in the glass and see how plain and uninteresting they have become. If they will only remember that mirrors lie most egregiously—that they darken and dull the complexion, magnify wrinkles and lines and fail almost entirely to give back those changing expressions which constitute the charm of many a faulty face, they will take courage. No woman is ever quite natural when she inspects herself in her looking-glass. Her face is in repose, her mind is nearly a blank. What she looks at is a sort of impersonal mask. What her friends see is a human face, lit up with animation, interesting and appealing, even if it fulfills none of the demands of the beauty connoisseur.

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Number of employes, 3200.
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Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
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The Markets.

San Francisco Produce Report.

San Francisco, May 24, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 87¾@ 86¼	81¼@ 80⅜
Thursday	86 @ 89⅛	80 @ 83⅝
Friday	88⅝@ 86¾	82⅜@ 80⅞
Saturday	86⅞@ 88⅜	80⅞@ 82
Monday	88 @ 89⅜	81⅝@ 82¾
Tuesday	88¾@ 90⅞	81¾@ 83¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	48 @48⅜	47⅝@47¾
Thursday	48 @49	47½@48¼
Friday	48¼@47⅞	48⅛@47⅜
Saturday	48⅜@47⅞	47⅛@47⅞
Monday	47⅝@48⅛	47⅛@47¾
Tuesday	47⅞@48⅞	47¼@48¼

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$1 48¼@1 48⅜	$1 30⅜@1 31⅝
Friday	1 48 @——	1 30 @1 31
Saturday	1 48¼@——	1 31½@1 32½
Monday	1 49¾@1 49	1 32⅜@1 34¼
Tuesday	1 50 @1 49¾	1 34¾@1 33¾
Wednesday	1 49½@1 49	1 34 @1 34¼

Wheat.

Trading in spot wheat in this center continues light, in the absence of any large offerings, with shippers wholly out of the market and millers doing very little. Most of the wheat which has recently changed hands here has been taken for chicken feed and at rather stiff prices, there being hardly anything in the shape of wheat obtainable under $1.50 per cental, while to secure choice $1.60 and more has to be paid. These prices are above the parity of foreign markets, but there is no wheat to spare at present for export purposes. Freight rates are nominally 23s. 9d. to 25s. to Europe, usual option, these being asking figures. One ship arrived under charter the past week for general merchandise as main cargo, but to take wheat as stiffening, at 25s. to Liverpool direct. The speculative markets East and here have inclined against the buying interest most of the week, with unfavorable crop weather in portions of the Middle West. That the yield in this State will come up to the optimistic views of the bears on wheat is not likely, nor is new wheat apt to sell as low as some speculators are now figuring on.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 50 @1 55
Oregon Club	1 50 @1 57½

PRICES OF FUTURES.

During past week the range on options was:

May, 1905, delivery, $1.48@1.50.

December, 1905, delivery, $1.30@1.31¾.

Wednesday, at the forenoon session of Exchange, May, 1905, wheat sold at $1.49⅝@1.49; December, 1905, $1.34@1.34¼.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s10½d@6s11d	-s-d@-s-d
Freight rates	16¼@-s	23¾@-s
Local market	$1 27½@1 32½	$1 50@1 55

Flour.

Considering the rather light stocks of desirable qualities and the absence of undue selling pressure on good to choice flour, there is a fair amount of business doing, both for shipment and on home account. In quotations there are no changes to record, values ruling decidedly steady.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Movement in this cereal is not brisk, nor will it be possible to have much activity until new crop stock begins to arrive in wholesale quantity, as supplies of barley are now too light to admit of extensive trading. Inquiry is mainly for feed descriptions and the range of prices is narrow, choice feed commanding about as much as is warranted as a quotation for No. 1 brewing. There is some poor Chevalier on the market, which fails to find buyers at prices ruling for good feed of the ordinary variety of barley. In the speculative market December option was a little firmer than previous week, but prices are still at low range, 88½c being the best figure recorded for December barley since last review. Seller 1905 new barley sold at 86@86½c, but sellers may be very much disappointed when they try to fili at these figures.

Feed, No. 1 to choice	$1 22½@1 25
Feed, fair to good	1 20 @1 22½
Brewing, No. 1 to choice	1 25 @1 27½
Chevalier, No. 1 to choice	1 25 @1 27½
Chevalier, common to fair	1 20 @1 22½

Oats.

The local market is practically cornered by a few firms and stiff prices are being asked. Stocks are light and there is nothing to warrant anticipating large receipts from any quarter until after the new crop has been harvested. At prices now ruling the demand is slow and almost wholly local.

White oats, fancy feed	$1 55 @1 60
White, good to choice	1 50 @1 55
White, poor to fair	——@——
Milling	——@——
Black oats	1 45 @1 50
Red, fair to choice	——@——

Corn

Owing to the recent heavy shipments to Central America, the corn market is strong. It is understood that the export demand is now about satisfied, but spot stocks are so light that holders see no necessity of crowding business, especially as the markets East are firm and little offering.

Large White, good to choice Cal	$1 45 @1 50
Large Yellow	1 40 @1 45
Small Yellow	1 50 @1 65
Egyptian White	1 32½@1 37½
Egyptian Brown	1 22½@1 27½
Eastern, sacked	1 42½@1 50

Rye.

Supplies of desirable quality are small and the market unfavorable to buyers.

Good to choice	$1 55 @1 65

Buckwheat.

Stocks of this cereal are of too insignificant volume to enable giving more than nominal quotations.

Good to choice	$2 00 @2 25

Beans.

Asking prices for Limas have been again advanced. There are no heavy offerings of good to choice beans of any variety. The market for sound, clean and unmixed beans is decidedly firm at ruling rates.

Pea, good to choice, 100 lbs	$3 25 @3 50
Small White, good to choice	3 25 @3 50
Large White	2 50 @3 00
Pinks	3 50 @4 00
Bayos, good to choice	3 25 @3 50
Red Kidneys	4 50 @5 00
Reds	6 00 @6 50
Limas, good to choice	5 50 @5 75
Black-eye Beans	3 00 @3 15

Dried Peas.

Choice Green Peas are in moderate request. There has been some inquiry the past week for No. 2 Niles.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 50 @2 00

Hops.

The market in this center is quiet, almost lifeless, and there is little upon which to base quotations. Buyers' ideas of values are about 24@26c. for prime hops, while most growers are holding for 30c. or better. The New York Producers' Price Current makes the following resume of the situation: "The market continues to present a dull and uninteresting position, with little if anything of note to report. Brewers are not showing a particle of interest, and, in absence of demand from them, dealers naturally have little if any encouragement to operate. From the Pacific Coast growers who are still in the pool express confidence in the future, claiming that all the hops will be wanted at higher figures than now possible to reach and are still holding at 30c. Notwithstanding this, we understand that a grower in Oregon outside of the pool has made some sales at 24½@25c. The condition of growing hops on the Coast is not considered quite so favorable, owing to continued dry weather, and rain is badly needed. In this State the remaining quantity of 1904 hops in growers' hands is very light, the Waterville Times claiming less than 500 bales all told. Holders continue firm in their views and are asking prices that are impossible at present to realize. Some interest is reported in old hops and business reported between dealers on the basis of 10c. The growing crop in this State is backward, owing to continued cool weather; but this is not considered a detriment, as experience has proven that an early and rapid growth has not been beneficial."

California, good to choice, 1904 crop	.25 @28

Wool.

Market is strong and there is not much offering from first hands. Medium and coarse wools are more eagerly sought after than fine, owing to the great demand for army woolens for the far East. All wools are meeting with a good market, however, much better than for many years. For some Southern Oregon fleeces 29c. was realized in this market the past week.

SPRING.

Humboldt and Mendocino	.29 @—
Northern, free	.28 @—
Northern, defective	.22 @25
Middle County, free	.26 @—
Middle County, defective	.22 @24
San Joaquin and Southern, free	.24 @26
San Joaquin and Southern, defective	.18 @22
Oregon, good to choice	.26 @29
Nevada	.20 @28

Hay and Straw.

Receipts of hay have been showing some increase, but offerings have been mostly of the lower grades of stable hay, and for this sort the market lacks firmness. Strictly choice Wheat, mixed Wheat and Oat or Tame Oat sells readily at full current figures. Alfalfa hay is in very light receipt and not much call for it at present. Straw is in poor demand.

Wheat, good to choice	$11 00 @ 14 50
Wheat and Oat	9 00 @ 12 50
Tame Oat, fair to choice	8 00 @ 13 00
Wild Oat	7 00 @ 9 50
Barley	7 00 @ 10 00
Alfalfa	7 00 @ 10 50
Clover	6 00 @ 9 00
Stock hay	5 00 @ 7 00
Compressed	12 00 @ 14 50
Straw, ₱ bale	25 @ 50

Millstuffs.

Market for Bran is dragging at quotably unchanged figures. Middlings are slow of sale and prices tend downward. Rolled Barley is not being crowded on buyers. Market for Milled Corn is quite firm.

Alfalfa Meal, ₱ ton	$17 50 @ 19 00
Bran, ₱ ton	21 00 @ 22 00
Middlings	24 50 @ 27 50
Shorts, Oregon	21 00 @ 22 50
Barley, Rolled	25 50 @ 26 50
Cornmeal	28 50 @ 29 50
Cracked Corn	29 00 @ 30 00
Oilcake Meal	33 50 @ 35 00

Seeds.

Mustard Seed now offering is principally the Yellow variety, and this is being steadily held. Nothing doing in Alfalfa. Rape seed is in light stock and quotably higher.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6¼@ 6¾
Rape	2 @ 2½
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Supplies are not heavy, but are greater than immediate custom can be obtained for at full current figures. Present offerings are largely of the amber grades and include some Hawaiian Island honey.

Extracted, White Liquid	5½@ 6
Extracted, Light Amber	4 @ 5
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Not much on market, neither is the demand very brisk. Values remain quotably as previously noted.

Good to choice, light ₱ lb	.29 @30
Dark	.27 @28

Live Stock and Meats.

Beef is in fair supply, with demand rather light and prices without quotable change. Market for Veal is moderately firm for desirable sizes, under light offerings, but is not quotably higher. Mutton is selling at about same figures as previously noted, with supplies ample for the immediate rather limited requirements. Lamb is in moderate receipt and fair request at last quoted range. Hogs are selling to about as good advantage as for several weeks past, not many coming forward.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5 @ 5½
Beef, 2nd quality	— @ 5
Beef, 3rd quality	4 @ 4½
Mutton—ewes, 6@7c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5½@ 5¾
Hogs, large, hard, over 200 pounds	5¾@ 5½
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	4 @ 6
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8 @—
Lamb, spring, ₱ lb	8½@ 9½

Hides, Skins and Tallow.

Market is firm for Hides, with demand brisk. Pelts are commanding better average figures than for a long time. Current values on Tallow are being well maintained.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	— @11½	— @10½
Medium Steers, 48 to 56 lbs	— @11	— @10
Light Steers, under 48 lbs	— @10½	— @ 9½
Heavy Cow Hides, over 50 lbs	— @10½	— @ 9½
Light Cow Hides, under 50 lbs	— @10½	— @ 9½
Stags	7½@—	7 @—
Wet Salted Kip	— @11	— @10
Wet Salted Veal	— @12	— @11
Wet Salted Calf	— @13	— @12
Dry Hides	18½@—	17 @—
Dry Kip and Veal, 11 to 16 lbs	— @16½	— @15
Dry Calf, under 4 lbs	— @21	— @19
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	15@ 40	
Horse Hides, salted, large prime, each	.3 25@—	
Horse Hides, salted, medium	.2 75@—	
Horse Hides, salted, small	.2 25@—	
Horse Hides, dry, large	.2 00@—	
Horse Hides, dry, medium	.1 50@—	
Horse Hides, dry, small	.1 00@—	
Tallow, good quality	.4 @4½	
Tallow, poorer grades	.3½@3½	

Bags and Bagging.

Business in this line is of a rather light order at present, but an increased movement is looked for in the near future. Quotable values remain as last noted.

Bean Bags	$ 4¾@5
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6¼@—
Grain Bags, Calcutta, buyer June-July	6¼@—
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼lb	30 @—

Poultry.

There were no heavy arrivals of either California or Eastern poultry, but demand was not very active and was mainly for choice young stock, medium size to full grown. Many of the old fowls arriving are in poor condition and, in consequence, sell slowly at low figures.

Turkeys, Dressed, choice, ₱ lb	$ 20 @ 23
Turkeys, live gobblers, ₱ lb	17 @ 19
Turkeys, live hens ₱ lb	17 @ 19
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 00 @ 6 50
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	7 00 @ 7 50
Fryers	5 50 @ 6 00
Broilers, large	3 00 @ 3 50
Broilers, small to medium	2 00 @ 2 50
Ducks, old, ₱ dozen	5 00 @ 5 50
Ducks, large young, ₱ dozen	5 50 @ 6 00
Geese, ₱ pair	2 00 @ 2 25
Goslings, ₱ pair	2 25 @ 2 50
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	1 50 @ 2 00

Butter.

Active competition among receivers has advanced prices to a point which is considered very risky for speculative operations. Some of the heaviest buyers on cold storage account refuse to pay the prices now generally asked. Receipts of creamery butter are considerably ahead of the demand for immediate use.

Creamery, extras, ₱ lb	20 @21
Creamery, firsts	19 @20
Creamery, seconds	18 @19
Dairy, select	19 @20
Dairy, firsts	18½@19
Dairy, seconds	17½@18
Mixed Store	16½@17½

Cheese.

Some flats are going in cold storage, in absence of other outlet at present. Young Americas are in light supply and are selling to very fair advantage. Eastern cheese are in limited stock and are being firmly held.

California, fancy flat, new	9½@—
California, good to choice	9 @ 9½
California, fair to good	8½@ 9
California, "Young Americas"	10 @11
Eastern	17 @18

Eggs.

There is more difference in prices than for some time past and a correspondingly greater difference in quality of offerings. For strictly choice to select the market is firm. Eggs which are dirty, or which run irregular as to freshness, size and color, are not readily placed, even at low figures.

California, select, large, white and fresh	20 @21
California, select, irregular color & size	18 @19
California, good to choice store	17 @18
Eastern firsts	— @—
Eastern seconds	— @—

Potatoes.

Old potatoes now on market are mostly Eastern product, representing prior arrival purchases by dealers. They are being steadily held, but movement in them is not brisk. New potatoes show increased receipt, both in sacks and boxes, and prices are averaging lower.

Cal. Early Rose, ₱ cental	1 50 @ 1 60
Salinas Burbanks, ₱ cental	— @ —
Eastern Burbanks, ₱ cental	1 25 @ 1 60
River Reds, ₱ cental	— @ —
Oregon Burbanks, ₱ cental	—— @ ——
New Potatoes, ₱ cental	1 00 @ 1 80
Sweet Potatoes, ₱ cental	— @ —

Vegetables.

Asparagus was in tolerably heavy receipt, but only a small proportion was choice to fancy. Peas are now selling mainly by the sack. There were further arrivals of Florida Tomatoes and lower prices for them. Cucumbers were in fair supply for this early date. Green Corn was on the market from Contra Costa county. New Red Onions were in ample receipt for current needs.

Asparagus, No. 1 to choice, ₱ lb	5 @ 7
Asparagus, No. 2, ₱ lb	4½@ 5
Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	3 @ 5
Beans, Wax, ₱ lb	— @ —
Cabbage, choice garden, ₱ 100 lbs	50 @ —
Egg Plant, ₱ lb	— @ —
Garlic, ₱ lb	6 @ 8
Mushrooms, ₱ lb	— @ —
Onions, Australian, ₱ ctl	6 00 @ —
Onions, New Red, ₱ ctl	1 00 @ 1 35
Peas, Green, ₱ sack	1 25 @ 2 75
Peppers, Bell, ₱ lb	— @ —
Peppers, Green, ₱ lb	10 @ 15
Rhubarb, ₱ box	50 @ 75
Summer Squash, small box	75 @ 1 00
Summer Squash, per large box	2 00 @ 2 25
Tomatoes, Los Angeles, ₱ box	1 00 @ 1 25
Tomatoes, Florida, ₱ crate	2 00 @ 3 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Most kinds of early Summer fruits are now represented on market, and some mid-Summer varieties have begun to pu

in an appearrance, notably Cantaloupes from Coachella valley. Green Almonds were in moderate receipt, but did not receive much attention, and were difficult to quote in a regular way. Clyman and Cherry Plums were received, mostly from Vacaville, but they were, as a rule, too green to be sought after. Alexander Peaches from Vacaville section were in moderate receipt, but mainly so green that they met with few buyers outside the Chinese. Pringle and Seedling Apricots were in tolerably good supply, and for such as were choice there was a very fair demand. Green Apples of the early varieties are coming forward, with demand slow for the general run of offerings. Cherries were in light receipt and market firm for choice. Berries of nearly all seasonable varieties made a good showing.

Apples, fancy, ℔ 50-box	—	@	—
Apples, good to choice, 50-lb. bx	—	@	—
Apples, fair to good, ℔ 50-lb. box	1 00	@	1 50
Apples, green, ℔ small box	40	@	75
Apricots, Pringle, ℔ crate	50	@	1 00
Apricots, Royal, ℔ box	65	@	1 25
Blackberries, ℔ chest	5 00	@	7 00
Cherries, Black, good to choice, bx	1 00	@	1 35
Cherries, White, good to choice, bx	50	@	1 00
Cherries, Royal Anne, ℔ box	1 20	@	1 35
Cherries, loose, ℔ lb	4	@	10
Currants, ℔ drawer	50	@	75
Gooseberries, English, ℔ lb	6	@	8
Gooseberries, other kinds, lb	2½	@	5
Loganberries, ℔ chest	5 00	@	7 00
Loganberries, ℔ crate	65	@	1 25
Peaches, ℔ box	1 00	@	1 25
Plums, Cherry, ℔ box	65	@	1 00
Plums, Clyman, ℔ crate	1 00	@	1 25
Raspberries, ℔ drawer	50	@	1 00
Strawberries, Florin, ℔ crate	50	@	75
Strawberries, Longworth, ℔ chest	6 00	@	10 00
Strawberries, large var., ℔ chest	3 50	@	7 00

Dried Fruits.

Stocks of dried fruit, other than Prunes of the middle sizes, are of small compass, and supplies of Prunes are showing steady reduction. For last year's Prunes there is a good demand at prevailing values. Apples are so scarce as to be hardly quotable. Figures below named for Apricots and Peaches are based on dealers' views of new to arrive. While the Apricot crop promises to be large, the quality is not likely to be of high average, and that choice to fancy Apricots will be any lower than last season is not probable. Prospects are that this year's Peaches will command fully as good figures as were current last season. The steamer Sierra, sailing for Australasia on Friday last, carried 29,917 lbs. dried fruit, exclusive of Raisins. The shipments included 15,085 lbs. Prunes and 775 lbs. Apples for Australia. For New Zealand there were 8,570 lbs. Prunes, 1,900 lbs. Peaches, 1,500 lbs. Apples, 1,400 lbs. Apricots. The steamer Queen, sailing Saturday last for British Columbia, carried 79,672 lbs. dried fruit, not including Raisins, and including 73,125 lbs. Prunes, 3,625 lbs. Figs, 1,250 lbs. Apricots, 625 lbs. Plums, 500 lbs. Nectarines, 500 lbs. Pears.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½@ 6
Apples, extra choice to fancy, 50-lb boxes	6½@ 7
Apricots, Moorpark	—@—
Apricots, Royal, good to choice, ℔ lb	6 @ 7
Apricots, Royal, fancy	7½@ 8
Figs, 10-lb box, 1-lb cartons	55 @60
Peaches, unpeeled, good to choice	5½@ 6½
Peaches, unpeeled, fancy to extra fancy	7 @ 9
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	7½@10½
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8½
Plums, Yellow, pitted	6½@ 7½
Prunes, Silver, good to fancy	—@—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 2¾@3c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1½@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3½
Figs, White, in bulk	3 @ 3½
Figs, Black	2½@ 4

Raisins.

There is a moderate movement outward. The steamer Sierra, sailing Friday last, carried 16,000 pounds for New Zealand. The steamer Queen, sailing Saturday, carried 11,350 lbs. for British Columbia and Northwest Territory. No changes are reported in quotable values.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3¼@3½c		
3-Crown Standard	4 @4¼c		
4-Crown Standard	4¾@ —c		
Seedless Thompsons	—@4½c		
Seedless Sultanas	—@3 c		
Fancy, 16-oz. Seeded	6 c		
Choice, 16-oz. Seeded	5 c		
Fancy, 12-oz. Seeded	4½c		
Choice, 12-oz. Seeded	4½c		
Bleached Sultanas, Woodland Dist., 50s	4¼@4¾c		
Bleached Thompsons, Woodland Dist., 50s	5½@8 c		

Citrus Fruits.

Most of the Oranges now on market are over-ripe and need frequent overhauling on account of decay spots. For such stock the market is weak. For thoroughly sound and choice Oranges the market is moderately firm but the demand is not active. Lemons are offering at unchanged figures, with movement fair and no scarcity of supplies. Limes are increased stock and market lower.

Oranges, Navels, choice to fancy, ℔ bx	2 25	@	2 75
Oranges, Navels, fair to good, ℔ box	1 50	@	2 00
Oranges, Valencias, ℔ box	2 50	@	2 75
Oranges, Cal. Tangerines, half box	1 25	@	1 75
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 25	@	1 50
Grape Fruit, ℔ box	1 50	@	2 25
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

Very little doing in either Almonds or Walnuts. Stocks of desrable qualities are not heavy and are being steadily held.

Chestnuts, Italian, ℔ lb	—	@—
Nonpareil Almonds	13	@16
Ne Plus Ultra Almonds	11	@14
Languedoc Almonds	8	@11
Peanuts, fair to prime	4½	@ 5½
Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	10	@11
Cal. Walnuts, No. 1 hard shell	11	@12
Cal. Walnuts, No. 2 hard shell	9	@10

Wine.

Business in the wine market is of slim proportions, so far as transfers from first hands are concerned. The general tone of the market is without appreciable change, being steady to firm for good to choice stock and weak for poor qualities. Dry wines of 1904 vintage are quoted at 14@17c. per gallon wholesale, San Francisco delivery. Sweet wine of 1904 is offering at 25c. per gallon, winery delivery in bulk, 27½c. per gallon in a jobbing way, San Francisco, but strictly choice sweet wine is not obtainable at these figures. Receipts of wine at San Francisco last week were 316,750 gallons, and for preceding week were 400,325 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	71,778	4,120,298	4,930,454
Wheat, ctls	26,339	2,607,745	2,241,659
Barley, ctls	46,074	3,321,647	5,270,776
Oats, ctls	2,102	812,167	835,066
Corn, ctls	10,409	254,709	151,888
Rye, ctls	1,281	54,290	56,957
Beans, sks	4,544	624,934	700,965
Potatoes, sks	16,116	1,192,015	1,247,076
Onions, sks	3,894	122,964	148,712
Hay, tons	2,954	164,042	161,222
Wool, bales	2,096	73,877	64,465
Hops, bales	50	39,183	29,487

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	43,168	2,699,228	3,043,484
Wheat, ctls	360	805,496	973,822
Barley, ctls	5,420	1,868,401	4,134,811
Oats, ctls	160	80,064	23,640
Corn, ctls	4,935	136,433	17,804
Beans, sks	413	49,182	38,528
Hay, bales	508	228,025	220,044
Wool, lbs	53,529	884,219	2,438,346
Hops, lbs	4,558	387,167	589,714
Honey, cases	196	2,772	4,833
Potatoes, pkgs	2,591	107,457	104,378

THE ORNITHOLOGIST.

The State Protects the Wild Birds.

Section 637a of the Penal Code has been so amended as to give protection to all wild birds excepting only the following: The Cooper's hawk, the sharp-shinned hawk, the duck hawk, the great horned owl, the blue jay, the California linnet and the English sparrow. Any person who, in the State of California, "shall at any time hunt, shoot, shoot at, pursue, take, kill, or destroy, buy, sell, give away, or have in his possession, except upon a written permit from the State Board of Fish Commissioners, for the purpose of propagation, or for educational or scientific purposes, any wild bird, living or dead, or any part of any dead wild bird (except those above named as being excluded from protection), or who shall rob the nest, or take, sell, or offer for sale, or destroy the egg sof any wild bird, other than those named above, is guilty of a misdemeanor," and is liable to a heavy fine and imprisonment. Game birds are not included under this head, but are protected under other sections of the Penal Code.

There are no English sparrows in southern California. All our native sparrows are in the protected list and must not be mistaken for English sparrows.

Bird students wishing to make collections of wild birds or their eggs for educational or scientific purposes must first procure a permit from the State Board of Fish Commissioners at San Francisco, but only a limited number of such permits will be issued, and these for only a limited number of specimens, and those applying therefor must have suitable recommendations from heads of educational institutions or be otherwise properly recommended.

Special attention is called to the fact that the California condor, all the eagles, all the sea birds, the turkey buzzard or vulture, and all the hawks but three above named as being excluded, are now protected.

Under the provisions of this law keepers of bird stores, or other persons, must not sell, buy or offer for sale mocking birds or any other native wild birds.

Those who wish to keep native birds in captivity for study or propagation must procure a permit from the State Fish Commission.

All species of tree squirrels are protected at all times. So are swan, pheasants, bob whites, and other imported quail or partridges.

The bag limit on doves is reduced to twenty-five birds, and these birds must not be sold or offered for sale.

The open season for hunting deer has been reduced to two and one-half months, beginning on August 1, and only two male deer may be taken in one season. A number of counties will still further reduce the open season for deer, doves and quail.

The use of any kind of snare or trap or poisonous substance in catching wild game is a misdemeanor.

Severe penalties are imposed for taking the eggs of quail or other game birds.

The minimum fine for killing does and fawns is now $50. A bill was passed making the killing of an elk a felony.

Snipe and other shore birds have a closed season and are not on the sale list.

Permits for study or propagation are not issued in the closed season.

The California Audubon Society has reason to hope, and has made a request to that effect, that no permits be issued for the taking of the California vulture, or condor, or its eggs. As this species is almost extinct, the time has come for energetic measures to prevent its total destruction.

Teachers should endeavor to impress the substance of this article upon their pupils, in order that they may fully understand that legal bird killing and egg collecting, as it has been done in the past, is at an end in California, and than the Audubon Society will prosecute all violations of the bird and game laws that come to its notice.

The interest and co-operation of farmers' organizations, humane societies, women's clubs, game protective associations and individuals towards preventing the destruction of our wild birds, and in protecting the wild game in closed seasons, is urgently solicited. Notify your nearest game warden regarding violations, or address California Audubon Society, W. Scott Way secretary, Pasadena, Cal.

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and other INSECTS killed by
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Endorsed by U. S. Dept. of Agri. and State Experiment Stations. This soap is a Fertilizer as well as an Insecticide. 50-lb. kegs, $2.50; 100-lb. kegs, $4.50; half barrel, 270 lb., 3¾c per lb.; barrel, 425 lb., 3½c. Send for booklet. JAMES GOOD, Original Maker,
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Cocoanut Oil Cake.
THE BEST FEED FOR STOCK, CHICKENS AND PIGS.
For sale in lots to suit by
El Dorado Oil Works
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Patrons of Husbandry.

Santa Clara Pomona Grange.

On Saturday, the 13th, the five Granges of Santa Clara county met with the Pomona (county) Grange at 10 o'clock in Lincoln Grange Hall, near Cupertino. In spite of the numerous picnics the attendance was good.

Reports were made from all sections by subordinate Grange delegates, including careful crop reports, and after the transaction of general business the meeting adjourned for luncheon to the small grove on the Sherwood orchard, just opposite.

George Hyde, Master of Lincoln Grange, welcomed those present, speaking in appreciation of the work and attendance. He introduced Mrs. Elizabeth L. Watson, who followed with an address. She spoke of "The Significance of the Grange" from the ethical and educational points of view, enlarging most particularly upon the consideration shown and equal privileges given to women in this work, which is to beautify and uplift rural life, counting very greatly upon this as a strong factor in purifying and strengthening the home and sacred family relations.

The programme closed with a talk upon the practical side of Grange work by Prof. D. T. Fowler of Berkeley, in which he spoke of the peculiar situation of farmers and orchardists in California, many of whom are retired business men or those of the professions who have invested capital in land, and now find conditions which demand all their business acumen, and especially their co-operative efforts. He deplored the indifference, the give-up-the-game spirit and weak yielding of those who as Grange members should be co-workers, i. e., Patrons of Husbandry in a truly brotherly sense. He commended the views of Mrs. Watson upon ethical and educational lines, but appealed to the Patrons of Husbandry to work to secure the 25,000 Californians who ought to be Grange members, deeming it absolutely essential that the farmers should be aroused all over the State. He said frankly that our actions belie the reputation we bear for industry and enterprise.

The interest shown, as well as the full attendance, was most gratifying and an invitation was accepted to meet with Sunnyvale Grange in June.

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The rate of interest on Deposits for six months ending Dec. 31, 1904, was at 3¼ per cent per annum.

FRENCH SAVINGS BANK
OF SAN FRANCISCO.

PAID UP CAPITAL,.....$600,000.00.

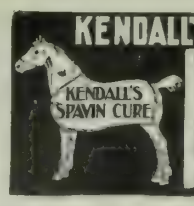
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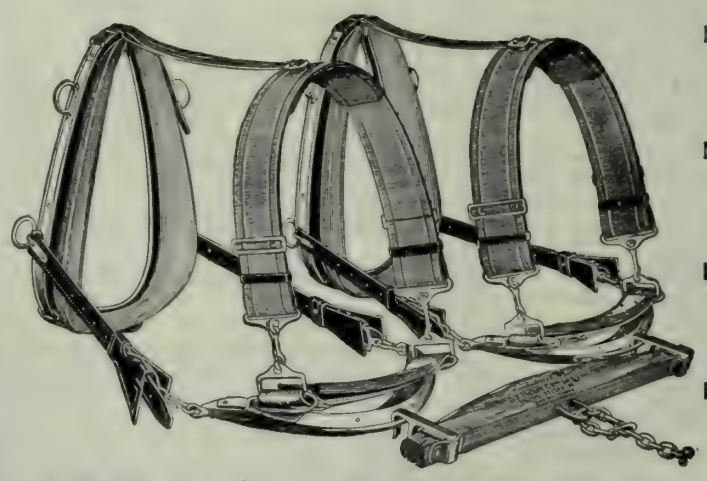
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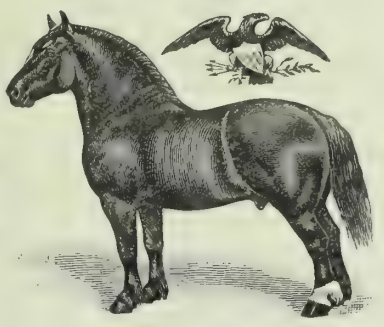
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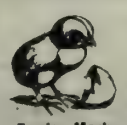
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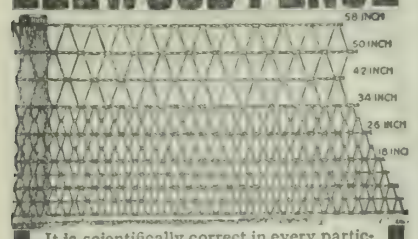
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THE VETERINARIAN.

Glanders.

This disease has cropped out in the northern part of San Joaquin county and three horses with the disease have been killed. Dr. F. Segsworth gives the following description of the disease to the Lodi Sentinel:

The fact that glanders is a disease that is readily transmissible to man, and that it occurs in a more or less latent form in some animals of the equine species in almost every locality, should be sufficient to warn every owner of horses to be on the lookout for the first symptoms of this dreaded disease.

Glanders is a contagious, constitutional disease of the horse and mule, and is readily communicable to man, the dog, cat, pig and smaller animals. The bovine species and the domestic fowl are alone exempt.

The disease is caused by a specific micro-organism—the bacillus mallei—which is found in the discharge from the nostrils, in the pus from the ulcers, and, in acute attacks, in the blood also. The disease does not result from strangles, distemper, nasal gleet or other diseases, though it may be found in combination with them.

Glanders and farcy are one and the same disease, the latter being the external or cutaneous form. In either form it attacks the lymphatic system, and is confined usually to the upper air passages, lining of the lungs, nostrils or shin, though it may attack the bones or any of the internal organs.

Many animals have glanders in a latent form, i. e., the disease may exist without any outward appearances, and the animal be apparently sound, but from the effects of hard work, exposure, debility from an attack of another disease, etc., an acute attack of glanders will be brought on and the animal quickly succumb.

The external form begins by the formation of little nodes under the skin; these vary in size from a pea to a walnut and are called farcy buds. They are hot and sensitive to the touch, and soon break down and form a ragged ulcer which discharges a peculiar oily-looking, sticky fluid which is characteristic of the disease. Along with this there may be lameness, swelling of one leg, usually a hind one, a chronic cough, and general unthriftness.

In acute glanders the respiratory tract is affected. There is a discharge from one, or both, nostrils; it may be slight or profuse; is usually not odorous, except in last stages, and is sticky and adheres to edges of nostrils. On the septum nasi, or partition between the nostrils, may be seen small ulcers in various stages of development, and discharging their oily looking contents. Often, however, these ulcers may be situated so high up in the nasal passages that they cannot readily be seen by the ordinary method of examination.

Acute glanders may be mistaken for strangles, or nasal catarrh, but there are no nodes in either disease and the discharge is more profuse in nasal catarrh.

When there is a doubt as to the diagnosis mallein or the inoculation test should be employed. The mallein test is made by injecting mallein (a sterilized product from a culture of glanders bacilli) under the skin. The inoculation consists in inoculating a rabbit or guinea pig with some of the discharge from the nose.

The treatment for glanders is mainly preventive. Slight cases may apparently recover with proper care and treatment, but there is always danger of these animals infecting others, or of the disease breaking out again in an acute form.

All suspected animals should be separated from other stock, at once; pronounced cases should be destroyed and the others quarantined for a period of one to three months.

Several States have passed excellent laws in regard to glanders, and allow indemnity for all animals destroyed, with the result that the disease in these States has been almost completely eradicated. But in California where our law makers are only after boodle, the danger to human life from this source is little considered.

THE APIARY.

Bees and Their Ways.

It is a rule for bees to build their brood combs of a uniform thickness and a certain distance apart. It was found by measurement that bees, when left to themselves, space their combs 1½ inch from center to center. Then it was that men, noticing this rule, began to try to devise some means to bring the manipulation of the combs within easier reach. At last Langstroth brought out, or at least perfected, the movable frame, by means of which the combs of a colony could easily be removed from the hive for examination; could be transposed, or exchanged with the combs from another hive. If it had not been customary for the bees to build their combs straight and uniform, men would not have thought of having the combs built in frames.

A normal colony of bees, casting a prime swarm, uniformly takes its reigning queen with said swarm, and the swarm will alight and hang in a cluster before leaving for their final home.

Taking advantage of this habit, the practiced beekeeper does not go to the trouble to beat tin pans and throw dirt in the air in order to stop such a swarm. He knows they will first cluster on some tree or bush and while thus clustered he will have time to prepare a hive for their reception. If they take flight from the cluster he knows they will leave for parts unknown and it is then that he will resort to any and all means to stop them. My method of stopping run-away swarms is to avoid ever having any.

A normal swarm of bees will uniformly return to the hive from which they came, if by any chance the queen is not with them; taking advantage of this fact, we clip off one wing from the queens before swarming season begins, then when the swarms issue the queens, not being able to fly, are found and caged at the entrance, and held till the swarm begins to return, when they are released and allowed to run in. In the interval that the bees are in the air before discovering the absence of the queen, the hive can be taken away and a new one put in its place. To this new hive the bees will return, because it is the law with them to return to the old location. Now you begin to see how a knowledge of these things aids us in the practical work of the apiary. If bees begin to build a comb straight, they will finish it that way. We therefore place strips of foundation in the frames or section boxes, it having been demonstrated that the bees will uniformly start their combs on these thin strips of pressed wax.

Every beekeeper knows that bees will pounce on any exposed sweets during a dearth of honey when bees cannot find nectar in the flowers, and that they will become very much excited and will be likely to enter other hives than their own for the purpose of robbing, and will sometimes become angry and sting stock or passers-by. He will therefore carefully avoid using any bits of honey or other sweets at such times, and women preparing preserves should do so behind closed or screen doors. If not, she may be bothered by having a lot of bees buzzing inside of her kitchen. At a time when there is honey in the flowers bees do not notice any such exposed sweets.

As a rule bees cast a prime swarm as soon as the first queen cell is sealed, unless prevented by bad weather, therefore the first young queen may be expected to emerge on the eighth day from first swarm. When the young queen hatches, we may look for a second or after swarm. Knowing this law we will look in the hive on the seventh day and destroy all but one queen cell. There will be no swarm, in accordance with another well-known law that bees will not leave the hive queenless and no provision for a new queen to be reared. It will be seen that beekeeping consists in conforming your methods to the habits of the bees in such a way as to have them do your will, not by willing that they shall do anything contrary to their established customs.—Harry Lathrop, in Wisconsin Agriculturist.



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THE DAIRY.

How the Holstein Calves Were Fed at the World's Fair.

Perhaps nothing connected with the St. Louis dairy demonstration was of more interest to those who visited the barns than the calf produce of the Holstein cows, writes David Propps in the Holstein Register. These calves were all born on the exposition grounds during the spring months and were kept there throughout the entire summer. As the blood of famous ancestors coursed through their tiny veins, many of them very early became quite promising youngsters, and breeders from all parts of the country spoke in highest terms of praise regarding the herd.

The five calves whose dams were entered in the dual-purpose test proved to be good feeders; they became quite beefy and of excellent quality. The average weight of the five calves at the age of sixteen weeks was nearly 400 pounds, while the daughter of Jolie Johanna, the grand champion cow in the live stock show, weighed 470 pounds at the age of nineteen weeks.

Although these calves were not kept on the grounds for exhibition, a few of them were entered in the live stock show and received many prizes.

World's Fair Hadria, a five months' old daughter of Hadria 2nd, won first prize in open competition, showing in a ring of twenty or more of the best in the land, many of which were more than twice her age.

Few persons realize the difficulty of raising calves under the unfavorable conditions such as existed at the World's Fair. The confinement, the hot weather, the exposure to flies, etc., were conditions that must be met by constant care and the utmost precaution in feeding.

"What do you feed your calves? How often and how much do you feed them? How do you keep them in such perfect condition?" were questions frequently asked, and, as we often remarked at the time, questions not easily answered; for in a herd of growing calves the ration is constantly being changed, and it may be said that no two calves are fed exactly alike. Therefore, to answer these questions fully, it would be necessary to deal with each individual separately.

These calves were fed principally on whole milk, in quantity from six to ten pounds at a feed. As soon as they were old enough to eat grain, they received a reasonable ration of crushed oats, corn hominy, wheat bran and oil meal, mixed in proportion to suit their respective conditions from time to time.

Milk should be given to a calf as soon as possible after it is drawn from the cow, while it yet contains the animal heat; if not, it should be warmed to that temperature before feeding, and in no case should a calf receive into its stomach milk that tastes or smells old, if the best results are to be expected. No kind of grain is more wholesome or safer feed for a calf than ground oats. Oats, therefore, should form the principal part of the grain ration. Corn meal or hominy may be added in the winter season, or when flesh is especially desired. Wheat bran is easily digested and is a cooling diet for extremely hot weather. Linseed meal should be fed in proportion to the condition of the digestive organs. If alfalfa hay is fed, very little of the meal will be required; if timothy or clover is fed, the meal may be increased. Linseed meal is also an excellent food for replacing butter fat when calves are fed on skimmed milk.

For calves fed on whole milk clover hay is preferable. Alfalfa may be fed at times for a change, but well cured clover is not only more palatable but better suited to the entire ration. For skimmed-milk calves alfalfa hay is better adapted; grain should be crushed, never fed whole. A teaspoonful of blood meal once a day will increase the appetite and prevent scouring.

Scouring is probably the greatest difficulty one has to deal with in feeding calves by hand; but why should a calf scour when fed from a pail any worse than if he were nursing a cow? In most cases, perhaps, the fault is with the feeder. He has fed too much, is not watering regularly, he is feeding an indigestible or unbalanced grain ration. Ready mixed feed, containing cottonseed meal or other indigestible ingredients, should be fed very cautiously to calves—better not feed at all. The condition of the digestive organs should be examined very carefully before each feed and the ration governed accordingly. Then there will be little trouble with scouring or indigestion.

Regularity in feeding is also a very important matter in the care of calves. We fed three times a day at the Fair simply because we milked three times a day. For farm calves twice a day is often enough to feed. Grain should be fed immediately after the milk, while the appetite is yet aroused; the calves will eat more heartily and clean up their feed better. In case a calf should fail to eat all his feed within a reasonable length of time, take it from him and make the next feed very light.

Water is very essential even to a very young calf. Many calves no doubt suffer for water simply because they haven't constant access to it, the feeder supposing they do not want it because they refuse to drink readily. We watered the exposition calves twice a day, and it was very noticeable that those who drank heartily thrived much better than those that did not drink so well. The result is, however, much more noticeable among stall-fed calves than among those that have plenty of exercise. It will be noticed that this article has reference particularly to calves kept in confinement; but the rules, with little modification, may easily be applied to farm calves.

The sanitary conditions, as every one who visited the barns know, were everything but favorable, and, although the Shorthorn people lost half of their number of calves, some of them dying in adjoining stalls, the entire herd of Holsteins was brought safely through with no serious illness. The manure was at once removed from the stalls and the bedding removed twice a day. Disinfectant was used freely. In the absence of a lot into which to turn the calves for exercise, they were given daily exercise by leading. Although the exercise was limited, it had much to do with keeping the calves in condition and free from the germs of disease.

At the sale of Holstein-Friesian cattle, September 23, the calves were sold and taken to different parts of the United States, where they are an improvement to the herds and the pride of the owners. No doubt many of them will be heard from in the future.

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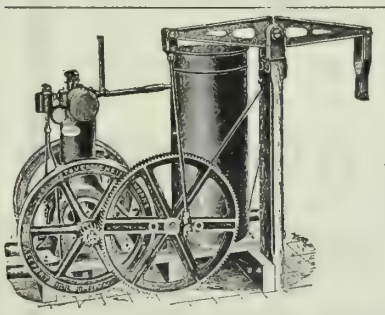
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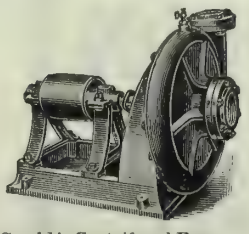
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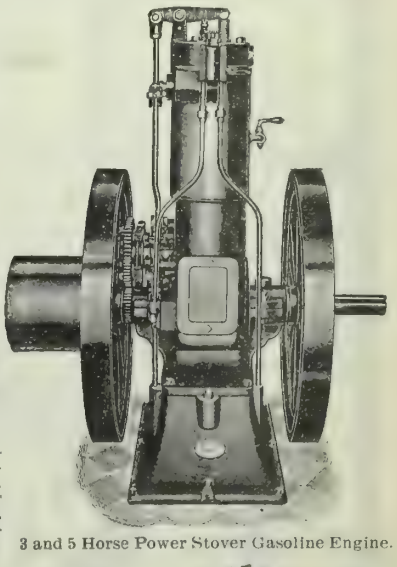
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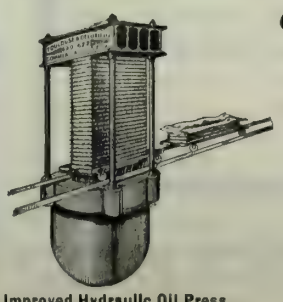
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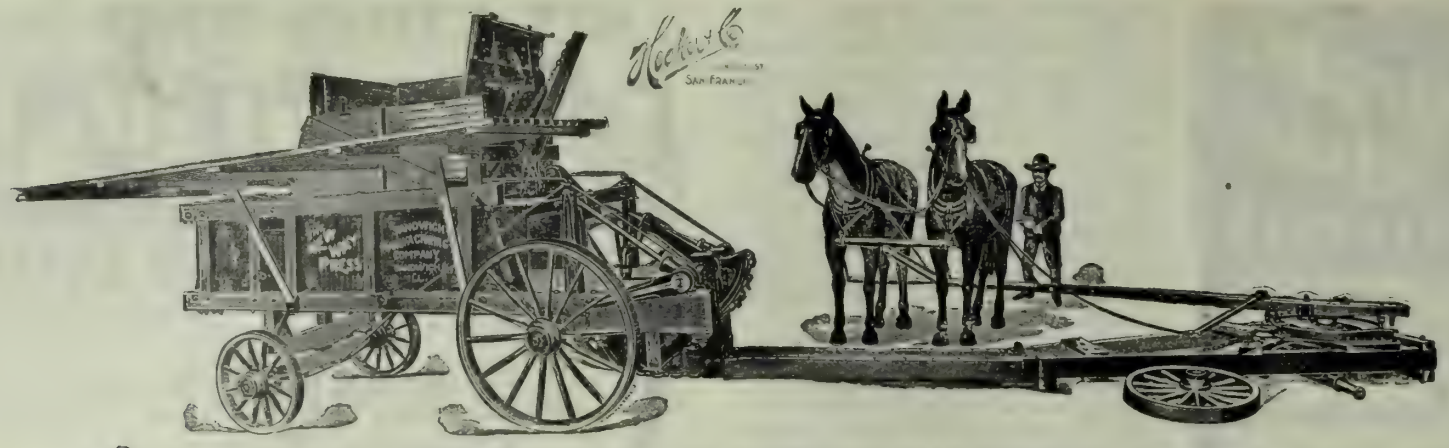
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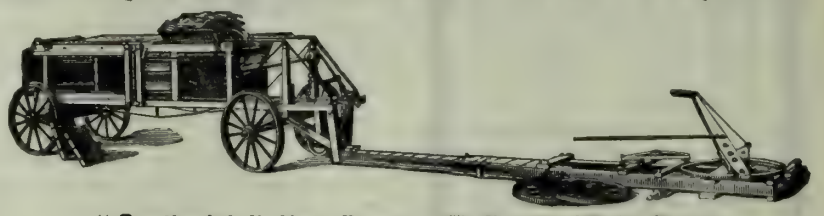
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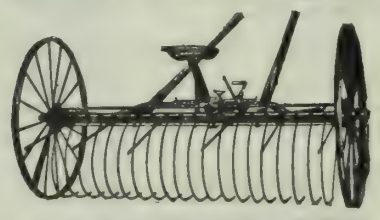
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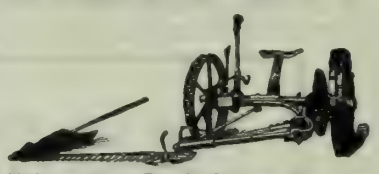
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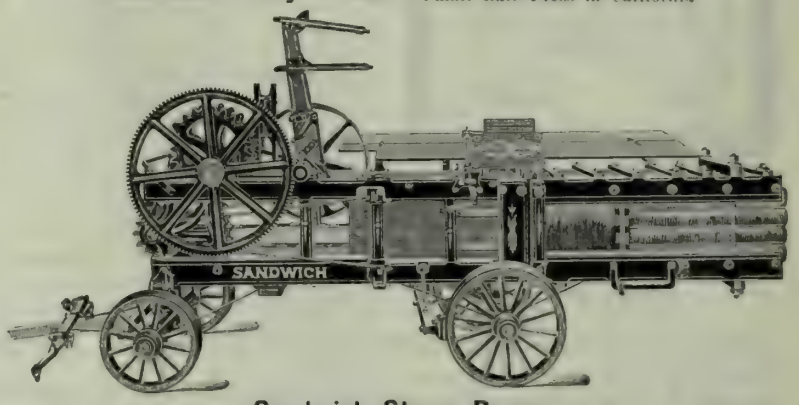
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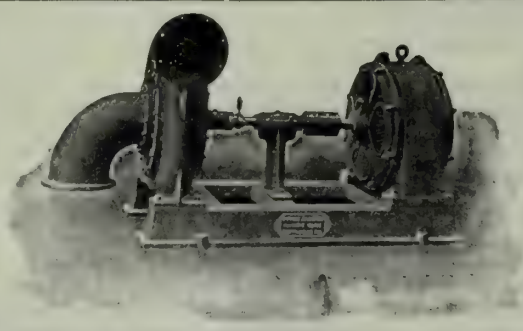
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Vol. LXIX. No. 22. SAN FRANCISCO, SATURDAY, JUNE 3, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Agricultural Uses of Electricity.

Unquestionably electricity as a source of light and power is to prove a very effective agency in the development of California agriculture. The State lies well for it, with two lines of mountains full of rapid streams, with countless elevated lakes as natural reservoirs, and, with many artificial reservoirs also to be provided in connection with irrigation progress, there is in all parts of the State water which will do Herculean labors while it makes its way to lower levels which consists of vast expanse of agricultural land. Already power lines traverse the State in all directions, but they are but an intimation of the thousands of miles of forceful wire which will be in place as the years go on. It is not too much to anticipate that within an ordinary lifetime there will be few valley farms which can not obtain cheap power from lines adjacent to them. This being the case, we shall have such power very largely displacing all others in the doing of agricultural work. At present, it is true, much is being done in this line, in the turning of pumps, in the running of motors for various purposes in the barns and farm shops, but these are only a foretaste of that which is to come. In the end we shall realize advantages from our vast flat valleys below and near to mountain ranges which were not counted at all in the early tributes to the advantage of our California topography.

Although we have in the State some of the greatest undertakings in the world in the length of transmission lines and the largeness of machines operated electricity, we have to take from Europe many hints of ways in which electricity can be turned to account in ordinary farm work and in making the force available to small producers. In a recent issue of the Electrical Review there was an interesting article by Mr. C. L. Durand which just meets the point we have in view and will be found very suggestive Mr. Durand shows that the uses of electricity for agricultural purposes are continually on the increase in Europe, especially in Germany, where it is employed on a number of large farms. Many of the leading proprietors have been brought to see the advantages which they could obtain by the use of electric motors placed throughout the premises for carrying on the different operations connected with farm work.

Some of the different uses to which motors can be put are shown in the present engravings. One of these represents a dairy plant which is laid out on modern principles. In the rear is a mechanical churn of large capacity which is driven by belt from a small direct current motor. A second motor is used to operate the butter-working machine, which is seen in the foreground. A model sheep-shearing plant is shown in another view. In this case a portable motor mounted on a four-wheeled truck is employed. The use of the portable motor is especially advantageous on a farm, as many different operations can be carried out by running the motor from one place to another, according to the needs of the work. A motor having about 3 H. P. capacity is generally sufficient for most of the light work such as is shown here. In some cases the electric machines were installed on the premises originally for lighting, and afterwards it was found that motors could be used to advantage; this keeps the plant running during the day and thus increases its efficiency.

One of the first applications of electric motors has been to drive threshing machines, and one of the engravings shows a plant of this kind. From 5 H. P. to 20 H. P. motors are required, according to the type of thresher used.

Electric motors are found to cost much less to operate than the steam locomotives which are often used to run the threshers. Thus a 10 H. P. steam locomotive is estimated to cost from 15 to 20 pfennigs ($0.038 to $0.050) per horse-power hour, while an electric motor under the same conditions can be operated for 8 to 10 pfennigs ($0.020 to $0.038) per horse-power hour. The present case illustrates the use of a new portable motor outfit which is being placed on the market. It drives the thresher by belt, and no change need be made in the case of threshing machines which were already adapted for use with steam engines. The portable motor can naturally be used for other operations when not employed here.

A question which has been much discussed of late is that of electric plowing. There is no doubt that motors will come into use extensively for this purpuse. In this case electricity comes into competition with steam, and under favorable local conditions the electric method has proved to be cheaper to operate, besides being greatly superior as to ease of handling. We illustrate one of the most recent methods of electric plowing which is used on some of the large German farms. It is known as the double-machine system. Two specially constructed portable machines known as plow wagons are employed. The wagons carry a motor-driven cable drum and the steel cable is stretched across the field, having the plow attached to it in the middle. The plow is thus drawn back and forth between the two wagons, and after one furrow is cut the wagons are advanced by the proper distance for cutting the succeeding furrow. Current is brought into the wagon by a separate drum, which rolls upon wheels in the rear of the wagon, and the cable is fed along the ground as the wagon advances. The plow is given a speed of 4 or 5 feet per second, using motors varying from 40 H. P. to 60 H. P. The motor is designed so that it will give a 4000-pound traction on the plow cable at the above speeds.



ELECTRICITY IN AGRICULTURE.

Fig. 1.—Working Dairy Apparatus. Fig. 2.—Working Sheep Shearing Machinery. Fig. 3.—Harvesting Machinery. Fig. 4.—Tilling and Sowing Machinery.

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The Week.

We are getting tired of talking about the weather. It seems very hard for it to put on an orthodox California summer aspect; cool temperatures and showers have continued and verdure is prolonged beyond the usual date for yellowing. It all looks very well, but really we had rather have weather which does not spoil the cherries and the hay, even if we do have to forego a little of the verdure. Our weather report on another page shows that the whole State is in the same condition, and the opportunity to maintain the view that the climate is changing was never better. We expect, however, that it will change back any day, so do not get too firmly set in that opinion.

The Japanese have knocked the last Russian fleet out of the water, and how they can be kept from having their own way on the east coast of Asia is difficult to say. All we can do is to hope that their way there will be the right way. The apprehension that the Japanese will now capture the United States by a peaceful process of occupation will now increase. If the Japanese had proved better laborers than they have, the California farmers would be more interested in having plenty of them. At present the general agricultural view is that, if we are to have plenty of Asiatics here, the Chinamen would be better for farm hands—and some are quite strongly urging that a turn about would be fair play, and that to put the Exclusion Act upon the Japanese and the free entry upon the Chinamen for a while would be a good move. All, however, will feel some alarm at the present attitude of the Japanese toward American agriculture. We find the following in a consular report just issued, concerning the operations of a Japanese capitalist:

Mr. Kinzaburo Gada visited the United States last fall and, recognizing the advantages offered for farming in the State of Texas, will collect about 1000 farmers within a short period, and, as a first undertaking, an area of approximately 9800 acres will be cultivated in the paddy fields on a large scale. In an interview Mr. Gada has made the following statement:

"Farming is the only enterprise that it seems can be profitably undertaken in America by the Japanese. In the manufacturing industries the Americans are using large capital and extensive machinery and are making every effort to reduce the cost of production. The progress in the economical use of machinery is very conspicuous, but in agriculture they are unable to employ these methods, and therefore do not question the comparatively high prices for vegetables and grains they consume. The reason seems to be their absolute devotion to the manufacturing industries, which leaves them no time to consider other enterprises. It is therefore in agriculture that the Japanese in America are most likely to meet with success."

This is a pretty sharp rap at American farmers, and we are glad that Mr. Gada's observations were made away down south in Texas. The idea that Americans do not see much chance in agriculture and are so struck after the chance in manufacturing that the Japanese can come in and run the farming, is a sad conclusion for our country. Is it true? It certainly looks that way to the Japanese and they are taking hold here as lessees and proprietors of land in a way to cause alarm for the future of American land ownership. How will it be for Americans to be shut up in factories and counting houses while the Japanese have control of our land, food supply and fresh air! It will do to think about that a little.

Spot wheat is firm and unchanged. May wheat is 5c higher and December is firmer than at our last report. Some new wheat is in and refused a bid of $1.30; it is a little shriveled. Barley is stiff and buyers hunting for it; new barley has sold from $1.21½ to $1.30. Another large lot of corn has gone to Central America and the market is strong. Beans are unchanged and firmly held. Bran is firm with light stocks, and middlings are unchanged. Fancy wheat hay is still firm; medium hay is steady and low grades weak. Meats are stationary. Butter is unchanged, the price kept steady by storage. Cheese seems to have struck bottom and is also going into storage. Fine selected eggs are firm and with an upward tendency; others are barely steady under a full supply. Some eastern eggs are arriving and the best of them going on the ice. Fine young poultry is firm; small and common old are lower. There are plenty of new potatoes, while old are in good demand for seed and firmly held. New onions are abundant and easy and old are firm. Oranges are still overripe, except Valencias, which are selling fairly—some of them to the Government for the Philippines. Lemons and limes are unchanged. Cherries are in light supply and fancy lots go high. Peaches are easier, while good-sized Royal apricots sell well. Bartlett pears are out of sight, the highest talk being $72 50 per ton so far; but that is not the end. Watermelons from Mexico have sold at 10 cents per pound. Black figs are in from Yuma. Dried fruits are firm; new crop apricots sold freely at 5¾@7½ cents in advance. Heavy shipments of prunes are still being made. Advance rates for prunes are held so high that dealers are scared off. Honey has gone to New York and more is in from Hawaii. The walnut crop is said to be shortened by the weather. Hops are talked higher by reason of poorer outlook and on the strength of a reported control by Oregon buyers. Wool is still high; bids of 30 cents for Humboldt and Mendocino are made and no one knows how much more.

We are much interested in the corn experiments in the Sacramento valley, and are glad they are being made all the way from Red Bluff to Suisun bay, as the valley papers say. We cannot help advising the promoters again that they should not expect too much from corn, nor place too great a stake upon it. One account says: "Indian corn is the best of fattening foods, and until California produces it in a large way or develops a substitute equally as good, her farmers cannot hope to produce the hams and bacon consumed here." We shall probably succeed on the substitute, for it is too much to expect that the great area of the valley will do much with corn. The common experience of the farmer that it is not a corn country should restrain the promoters from prophesying too much. Wait until the language of the tests is heard before too wide generalizations are made.

So there seems some hope of permanent service in the river dredgers after all. It is reported that after months of negotiations the United States Debris Commission has secured rights of way for the great system of restraining walls from Daguerre point to Marysville and the walls will be built this year to correct the channel of the Yuba river and cause it to scour and reduce its level. The walls will be built by mining dredgers without cost to the Government, the owners of the machines extracting the gold from the material while building the walls.

Here are some figures for the boomers. A single carload of cherries from San Jose sold in New York last week for $5342. So far as is known, no single car of cherries ever brought such a large return. The cherries were mostly Black Tartarians and averaged $2.35 a box. The top prices received, however, ran from $3 to $4.25 a box. Now multiply that by 1000 carloads—which we did not have this year.

QUERIES AND REPLIES.

Pecan Growing in California.

TO THE EDITOR:—I hear that there is a successfu pecan orchard in Napa valley. Can you tell us anything about it or about any other experience with the nut in California?—READER, San Francisco.

We do not know about the plantation in Napa county, but will take the first opportunity to look into it. It is evident from experience thus far that locations for pecan planting must be selected with some care. Although the trees have been growing around the Bay of San Francisco for thirty years or more, they have not demonstrated satisfactory bearing. The tree seems to go astray in the thermal situations in California, maintaining its growth too late in the fall and not ripening nuts properly; in fact, it has been claimed that as the wet season comes on that with the high temperature the nuts have been found to sprout down the trees instead of ripening properly. Mr. John T. Doyle of Menlo Park has given much attention to the pecan tree and pronounces it a failure from a nut-bearing point of view in his region. On the other hand, pecan trees are bearing well in some of the interior valleys—for instance, on the Bidwell ranch at Chico. From our observation we conclude that in moist, deep lands, in places where the changes in temperature are somewhat marked, as they are in the lower lands of the interior valleys, the pecan tree will do much better than it will near the coast. We also believe that it will not succeed on irrigated lands unless they have a deep soil and quite sharp fall and winter frosts. There have been many plantations made on dry uplands in southern California and elsewhere also, where nothing but disappointment has been reached. For these reasons one has to be very careful in recommending investment in the pecan industry. The Southern States nursery companies dealing in nuts and trees are continually pushing them in California, but our experience is that investment must be made with great circumspection and discrimination, and that the whole thing is still on an experimental basis. No commercial product has been produced as yet, although the nut was introduced into the State not less than thirty years ago.

Fruit Investments.

TO THE EDITOR:—What capital is required to buy an orchard bearing sufficient fruit to secure an income of £100 per year? How long does it take orange trees to grow before bearing fruit, and what does the land and cultivation cost? What prospect is there for a novice to succeed? When is the best time to begin?—INVESTOR, England.

It is exceedingly difficult to make you satisfactory answer, because there are so many conditions which render orchard income irregular. There are cases, for instance, in which one acre of bearing trees would produce $500 in a single year, and in other cases, owing to the orchard itself, perhaps, or to the marketing of the fruit, one might have twenty acres not producing more than the amount specified. It depends upon the orchard, it depends upon the man, it depends upon the trade. At the same time we have the general assurance that good orchard properties are profitable and are in demand, bearing trees selling all the way from $100 to $1000 per acre, the average being, perhaps, about $250. The prospect of a novice without knowledge of fruit growing succeeding at the beginning is not very good, although there are really many people who come to California who do succeed from the outset. Here, again, it depends largely upon the grower, but the general situation of product and trade may be at the time strongly in his favor. One should not decide upon investment in California property without studying the matter locally and deciding for himself whether he has the quality and conditions which favor satisfactory investment and effort. There is no particular best time for beginning in California, because our fruit interests are active the whole year. The citrus fruits begin to ripen in November and continue until the common orchard fruits begin in May, and these continue active until the citrus fruit opening again in the autumn. Cost of land and cultivation are so varied that no general estimate would be very instructive. Budded orange trees are usually planted out at three years of age from seed and begin to bear something of a crop the third year in the orchard.

A Lawn Contest.

TO THE EDITOR:—The Civic Federation of Eureka wishes to prepare rules and regulations to govern a lawn contest for prizes offered by the Federation. the object being to stimulate local pride and an incentive to improve the lawns of Eureka. What is the best kind of grass to be used? Should a lawn be solely of one kind of grass or mixed grasses, or grass or clover? Perhaps you know of some lawn contests that have taken place in the State, where rules and regulations have been adopted, and which we could obtain.—ENQUIRER, Eureka.

The lawn contest will certainly be an interesting undertaking and will stimulate local interest in gardening and educational in ways to attain the best results. The combinations, which are approved by experience of the bay district are two: First, English rye grass and white clover; second, Kentucky blue grass and white clover. For other lawns all these are sown singly, according to the taste of the grower, but our preference is for a combination, because the clover fills out well and helps to maintain verdure at times of the year when the grasses are apt to become rusty—so that, on the whole, the combination of white clover with either of these grasses seems to be desirable. English rye grass makes a coarser lawn than Kentucky blue grass, and yet produces a fairly green effect more quickly and with less water and less mowing, but the Kentucky blue grass is on the whole so much more beautiful that, if one is willing to give the constant attention in watering, in cutting and in fertilizing (all of which are necessary in our dry summer months to produce the best results), nothing surpasses the combination of Kentucky blue grass and white clover. We cannot at this time think of any earlier lawn contest, such as you propose, nor have we any record of rules for such contests.

Cows in Stable or Corral.

TO THE EDITOR:—Your advice to your correspondent who wished to stable his cows certainly describes the pleasantest way to do so, but how about keeping up the fertility of the land when the manure is left to go to waste, as is the case where cows run in the corral, under trees, etc., or do you consider that alfalfa alone will keep up the fertility without manure? I am interested in this and have been thinking on it. At present my cows run under the trees and are not shut up except when it storms. I hate to shut them up, just to get the manure. What shall I do?—ENQUIRER, Chico.

There is certainly a partial waste in corral feeding which cannot be avoided, but the waste is not as great as might be thought, if the corral is handled properly. If the manure is allowed to dry quickly it does not lose its value. If it is finely comminuted, as it is by the tramping of cattle, it becomes an absorbent and in that way fixes a good part of the liquid excrement, as well as preserving its own quality. In the long dry season of California, therefore, the waste in the corral is reduced to the minimum, providing the corral is thoroughly cleaned up and the scrapings hauled to the fields before the rainy season sets in. The loss during the winter will be more or less, according to the local rainfall, and this can be reduced in the wettest localities by freer use of the stable during that part of the year. Alfalfa is, of course, a soil preservative, but no manure should be wasted for that reason.

Corn in California.

TO THE EDITOR:—Can you furnish a book on corn growing in California?—READER, San Francisco.

We have no publications on California corn. Corn is a small crop in California and only few districts are well adapted to its production. Probably we could add to advantage more than is done at the present time, and in the Sacramento valley corn experiments are now in progress, but no results as yet attained. It may be said in a general way that the cultivation methods practiced in California are exactly the same as those in the great corn growing States of the central West, except that in some places irrigation is employed, although as a rule what crop there is is made upon rather moist land, on which by planting just as soon as frost freedom is assured the crop can be made upon the moisture retained in the soil by constant cultivation during the growing season. The methods of growing corn from the point of view of the vegetable are discussed in our book on "California Vegetables." Another interesting experiment now in progress in this State is an opportunity to determine whether corn must be protected from the corn worm which works serious injury to the ears. This experiment is but just beginning and therefore no results yet in sight.

Fruit Drop—Rose Rust.

TO THE EDITOR:—Please let me know why peaches fall from the tree before they are mature. I have an orchard here which contains a number of peach trees, about one-half the fruit have already fallen. The same happened last year, the trees are healthy looking and apparently exempt from disease.

I also have several rose bushes which were healthy up to two weeks ago, but the leaves have within the last week turned a saffron color. Some of my neighbors call it rust, but in the meantime have advised me to communicate with you.—FARMAR, Madera county.

It is always usual for some peaches to fall from the tree for lack of pollination or some other physical condition without the intrusion of some disease. This year the peculiar weather conditions seem to have promoted this falling to a very notable extent and in some cases the crop has been considerably reduced thereby. It is, however, not to be attributed to disease, but to the fact that growing conditions, owing to the unusual moisture and temperature, have not been favorable for the development of the fruit.

The rose bushes, of which you speak, are affected by an orange colored fungus, which is usually called "rose rust." It is a different fungus than that which causes the rusting grain and yet the effect is similar. The rust can be checked from spreading by the use of the Bordeaux misture, the same mixture which is used for checking fungus disease on fruit trees. In spraying for rose rust it is necessary to have a nozzle which shoots upward and to make the application as far as possible to the underside of the leaves where the fungus chiefly works.

Gumming of Peaches.

TO THE EDITOR:—I am mailing you to-day a peach twig which shows trouble with the fruit. Of course not all the fruit on the trees is affected, but quite a considerable quantity of it is. The trouble only appeared in the last few days.—D. W. M., Linden.

The little peaches show discolorations and exudation of gum in spots. The cause of this has never been made out. There is no insect injury discernible. Apparently something, the nature of which is not clear, has caused the gumming of the fruit at the pit and outward in places to the skin. As the cause is not known, the remedy cannot be intelligently prescribed.

Bleaching Sultana Raisins.

TO THE EDITOR:—How do California producers of Sultana raisins bleach them? We understand they use some kind of a chemical.—ENQUIRER, San Francisco.

Sultana raisins are bleached by dipping the fruit in the solution of about one pound of caustic potash to twelve gallons of water, the solution kept boiling hot and the raisins dipped in the substance and then plunged in fresh water for a thorough rinsing. During the hottest, driest weather in the interior the raisins are dried in the shade by leaving the trays in piles; in moister weather they are spread out. The product is of a handsome amber color. This is an outline of the process, which some growers modify somewhat according to their experience; in fact, the process is one requiring considerable experience and judgment and can be best learned by taking lessons from some successful operator.

Killing Worms in Horse Beans.

TO THE EDITOR:—I am very much obliged for your answer about killing the bugs in horse beans. I have examined a great many horse beans when they came to the warehouse, and I find, by opening same, that the bug is matured in the bean to the size of a pin's head. Now, what I would like to know is that, after this bug is killed—the dead bug certainly stays in the bean—will that make the beans unfit for eating purposes by either human beings or animals?—GROWER, Alameda county.

You need not apprehend any injury whatever from the remains of the exceedingly small larva left in the bean after killing by the bisulphide process. The application should, of course, be made as soon as possible after gathering the beans, in order that the insect may have little time to grow; but the effect is for the small body to shrivel and dry and to become objectionable neither by its appearance nor by its substance. If the killing is done early it will constitute no injury for the uses to which the dried horse beans are usually put.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending May 29, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

A severe "norther" at the beginning of the week dried green feed, but caused no other damage. Cooler and cloudy weather followed, with light rain Friday, and cool weather prevailed at the close of the week. Hay was slightly damaged by rain in some sections, and cherries and strawberries were quite seriously damaged, but grain was not injured. Haying is progressing rapidly and the yield and quality are both very good. The barley crop is estimated as greatly in excess of last season's. Wheat and oats are maturing and give promise of good crops. Hops are in excellent condition and growing rapidly; a full crop is expected in the Wheatland district. Green feed is still abundant, but cattle are being driven to summer ranges. Vineyards are very thrifty and deciduous fruits are making satisfactory progress. With the exception of pears and cherries, the fruit crop will probably be fully average. Citrus fruits are in good condition.

Coast and Bay Sections.

Cool and cloudy weather prevailed most of the week in the central and northern sections, but conditions were more favorable in the south. Light rain fell in nearly all sections Thursday night and Friday, causing some damage to hay, cherries and strawberries, but benefiting beets and beans. Haying is in progress in all sections and baling will commence this week; the hay crop is heavy and of good quality. Wheat, oats and barley are in good condition and rapidly maturing; large crops are probable in most places. Hops in the vicinity of Peachland are reported in poor condition, but they are looking well and making rapid growth in other portions of Sonoma county. Grasshoppers have appeared in the mountain ranches of San Luis Obispo county. The prune crop is reported light in the south and fair elsewhere. Nearly all other deciduous fruits except cherries will yield average crops. Grapes are in excellent condition and a large crop is expected.

San Joaquin Valley.

Clear and warm weather prevailed until the latter part of the week, when it became cloudy and cool. Light rains fell Friday in most portions of the valley and caused some damage to cut hay, cherries and berries. Wheat is improving, barley is ripening and grain harvest will commence soon. Haying is progressing rapidly and the crop and quality are good. The second crop of alfalfa is being cut. Deciduous fruits are making good growth. Apricots are being marketed; the crop is below the average and the fruit small. Grapes are very promising in the northern portion of the valley. Feed is plentiful and stock are in prime condition.

Southern California.

Cool, cloudy and foggy weather prevailed most of the week, retarding the development of crops to some extent. Light showers were beneficial except to grain and hay, which are needing sunshine and warmer weather. Haying is nearly completed in some sections and progressing elsewhere; the hay is of good quality and the yield fair to heavy. Grain continues in good condition and an excellent crop is expected in most places. Corn, potatoes, sugar beets and beans are doing well. Pasturage is abundant. The yield of honey will be the best for several years. Walnuts are very backward and deciduous fruits are making slow growth, owing to continued cool and cloudy weather. Vineyards are thrifty. Citrus fruits are in excellent condition and a large crop of oranges is expected.

EUREKA SUMMARY.—Prospects for grass, grain and fruit continue excellent. Some farmers have commenced haying. Oats on Arcata bottom land are badly affected with rust. Frosts injured cherries; the crop will not be as large as expected.

LOS ANGELES SUMMARY.—Cool, cloudy week with showers, not generally favorable for farm work. Clear, warm weather would benefit corn and other field crops and haying. Some reports show walnut prospects brighter; others crop backward.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, May 31, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.33	32 76	64 66	45 53	62	50
Red Bluff	.11	33 63	31 52	25 80	86	52
Sacramento	.15	21.98	16.87	19 85	76	46
San Francisco	.T	23 45	20 59	22 52	64	48
Fresno	.00	12 08	8 04	8 69	90	52
Independence	.10	3 99	2.59	3 71	80	40
San Luis Obispo	.03	23.53	16 99	20.06	66	44
Los Angeles	.03	19 49	8 72	16 42	72	50
San Diego	.06	14.32	4 40	8 17	68	52
Yuma	.00	8 69	1 00	2 89	90	54

HORTICULTURE.

How Walnuts Grow.

To the Editor:—"Experienced Planter's" note in the Pacific Rural Press of May 13, seems to me to be very much out of place, and more so his words: "It seems to me that he knows nothing about planting nuts," and again Professor Wickson's comment does not agree with Nature. If the learned Professor had given the matter a little thought he would have seen his mistake. The English walnut and all other nuts, including pits of peach, almond, apricots and all the plum family, also acorns, grow with the large end toward the tree, and from this blunt or large end of the nut, pit or acorn the germ or future tree sprouts, consequently should always be planted straight up, that is, the sharp part should be planted straight down. The first thing to start out is the root, no seed or nut of any kind ever sends out the top first. This every planter that has any knowledge of horticulture certainly knows, or ought to know, and I here repeat what I said in my article: Nuts should be planted with the point down. I do not wish to get in any controversy and will leave the matter for Mr. Felix Gillet, who is probably the best posted man on nut culture on the Pacific coast, to decide. I have been an experienced planter forty years, having been in the nursery and florist business for fifteen years before I came to California some twenty-two years ago, and I never try to pen an article unless I am well versed in the subject and know I am right. Now take the peach pit. Every experienced nurseryman knows if he does not plant his peach pits with the sharp points down a majority of his trees at the union of top and root will be crooked. The same way with the walnut.

Walnuts will spout in from fifteen to twenty days if soaked in warm water for twelve hours. Let the doubter plant a few and solve the problem for himself. J. Luther Bowers.

Monticello, Napa county.

COMMENTS BY MR. FELIX GILLET.

To the Editor:—In reply to Mr. Bowers' letter, since I have been asked my opinion on the subject, I will say that Mr. Bowers is singularly mistaken in his idea that a walnut tree comes out of the nut with the root through the small end and the tree through the big end, and that, consequently, the nut has to be planted with the small end down if wishing to have a straight tree. It is no such thing. Walnuts, like all nuts, should be planted with the suture or seam perpendicular to the line of the horizon, that is, lying on the seam and never on the face, or with the small or big end down.

I finished planting on April 29th 12,000 walnuts in nursery rows, the nuts having been kept in moist creek sand in the cellar since January, and when planted they were in all stages of sprouting, some even with roots 6 inches long, others just cracked open and showing the root and top ready to emerge, while the majority of the nuts were not even cracked open. This I prefer, as the planting is done easier and quicker, only the ground has to be kept constantly moist, and when too dry water has to be run in little ditches along the rows of nuts. In planting the nuts I selected a well sprouted one, with roots 6 inches long, and top of the tree like a little hook just out and half an inch in length, and had a photograph taken of it, so as to illustrate with a halftone cut the chapter on walnut planting and propagating for my coming pamphlet on "Nut Trees." I also had another photograph taken of a little tree just out of the ground, with roots over 6 inches in length and the top 2½ inches. This cut is a still better one, as it will show both how the nut has to be planted and at what depth.

With this letter I send you a well sprouted nut, having kept several in sand in the cellar, and it should be conclusive when laid before anybody's eyes as to how the nut should be planted, that is, with the seam down and surely not the small end down. You will notice how straight is the little tree, and that the two lobes of the seed, which with the walnut are the two halves of the kernel, are connected with the tree right at the collar by two little extensions like arms, the two halves of the shell being fastened together at the big end, through which Mr. Bowers makes the tree emerge. The sprout retains the shape of a little hook until it strikes the surface, after which it naturally straightens up of itself. When a walnut, put to sprout in moist sand, cracks open it will show the root in one of the seams running from the small end to the big end, while in the other seam is seen the top under the form of a little hook and of a cream-white color. No mistake can be made in planting such sprouted nuts, however should the nut be planted reverse before cracking open, in sprouting the germ will come all right through a like twist of itself and grow with the tree up and root down. By planting the nuts with the small end down some trees might grown straight, but you are more liable either to smother the germ or else make the tree grow crooked, that is, with an elbow to it.

I have been planting nuts of all kinds for thirty-two years and always obtained straight stock by planting the way I have described. I plant pecans, butternuts, black walnuts, hickories, almonds and chestnuts the same way; only I put the hard shell nuts to sprout in boxes with a thick layer of half decayed leaves between each layer of nuts, setting the boxes on the north side of the packing house and right under the eaves of the roof. Rain, snow and frost will sprout them splendidly, and if I do not put the walnuts to sprout in the same way it is because they would sprout too fast and before I am ready to plant them.

As to putting the walnuts to soak in warm water for twelve hours before planting instead of having them for a certain length of time in sand in the cellar, I have no doubt that they would sprout well, perhaps within twelve to fifteen days as stated by Mr. Bowers, who has had experience in that line. I have never done it, but think that it is well to know it, as sometimes it may be done to advantage, especially when having nuts received late in the season. I have just started an experiment with this method.

I will seize this opportunity to say a few words in reply to the query of Mr. Bogue of Marysville in regard to "seedling or grafted walnuts." What I called absurd was that proposition of the French nurseryman who deals largely in seedling and none at all in grafted walnuts, when he stated in a letter to Mr. Bogue that "the grafted walnuts do not grow well and do not produce the true varieties, etc." Now I want to know if grafted trees, whether nut or fruit trees, do not produce the true varieties, what does? Surely, not seedlings. Do any of your readers believe that a seedling Crawford peach, or Bartlett pear, or Newtown Pippin apple, will be truer than grafted trees of these varieties? I say the proposition is absurd, and is not worth while to discuss. That a seedling walnut may bear a larger crop than a grafted one, be more profitable to raise, etc., is another proposition, which is correctly pointed out by the editor in his remarks in the Pacific Rural Press of May 20th, but what I did call absurd was the silly proposition that a seedling walnut is truer than a grafted tree.

As to "grafted walnut trees not growing well, and the production being very difficult, and, where they grow, producing only 30% of a crop," that is all wrong; it is nothing of the kind. The greatest advantage of grafted walnuts is to give a homogeneous product, and I could give you many instances of grafted walnut trees in this State, Oregon and Washington bearing heavy crops, even so as to break down the trees under the weight of the nuts. The trouble with grafted trees is that they are very hard to propagate, especially young stock, and that is what is the matter with those nurserymen that run down that class of trees for the sake of selling seedling trees, and even they will deny that a "second-generation" tree is better and truer than a third, fourth or fifth generation one. Felix Gillet.

Nevada City, May 27.

We are thankful to Mr. Gillet for his kindness in acting as referee on the matter between Mr. Bowers and ourselves, and for furnishing so much additional matter of interest. The specimens of sprouted nuts which Mr. Gillet kindly sent are, of course, exactly as he describes them.

THE FIELD.

Fencing Against Coyotes.

We recently commended a pamphlet on coyotes in their economic relations prepared by Mr. David E. Lantz, assistant in the Biological Survey of the U. S. Department of Agriculture. The portion about protection against the beasts is particularly interesting and introduces much California experience.

Investigations Concerning Coyote-Proof Fencing.—The Biological Survey has undertaken an investigation of the feasibility of successfully fencing against the coyote. If a coyote-proof fence of sufficient cheapness and durability to be practicable can be brought into general use for pasturage, there is no reason why the sheep industry in the West should not be revived and greatly extended. If such a fence should at the same time prove efficient against dogs, the benefit would extend to the whole country and result in an enormous increase of the productive resources of our farms. A coyote-proof fence would prove valuable, even if its use were restricted to corrals and small pastures for ewes during the lambing season.

The writer, under instruction from the Chief of the Biological Survey, spent several weeks in the field during October and November, 1904, making such investigations as were possible during the limited time at his disposal. For the purpose of testing the ability of coyotes to pass over or through fences a unique experiment was made. The place selected was Chattanooga, Comanche county, Okla. South of the town lies the great Pasture Reserve, a large area practically without fences to interfere with the chasing of wolves. Since coyotes were abundant and the cowboys skilled in their chase, it was not difficult to procure the needed animals in an uninjured condition.

The experiment was made with all the forms of fence that could possibly be obtained or built with the limited resources of a new country. A long lane was first built, with sides 7 feet high, made with poultry netting of a small mesh. Fourteen cross fences of heights from 30 to 66 inches and of various designs were built at intervals along the lane. They were arranged so that the coyotes, introduced at one end of the lane, should have presented to them gradually increasing difficulty in passing the fences. Two coyotes were released singly into the lane, and their progress and methods of passing the cross fences were carefully noted. One was badly frightened by the presence and noise of dogs and men, but the experiment with the other was not made in public.

The coyotes ran with their noses close to the ground and seemed to have no knowledge of jumping. All attempts to pass the obstructions began with efforts to get the muzzle through openings. If the entire head could be thrust through and there was enough room for the shoulders to spread out laterally, the whole wolf was able to follow. Both went through rectangular openings, 5 by 12 inches and 5 by 8 inches, but the larger animal failed to pass a mesh 5 by 6 inches. The smaller animal went through an opening 4 by 12 inches and another 5 by 6 inches. Had these openings been triangular in form the animal could not have passed through.

The following conclusions were drawn from the experiments:

1. Prairie coyotes will not willingly jump over a fence above 30 inches in height.
2. They will readily climb over fences built of horizontal rails or crossbars, especially in order to escape from captivity.
3. Barbed wires do not deter them from crawling through a fence to escape. Whether they would go through a closely built barbed-wire fence to attack sheep or poultry is still an open question.
4. Woven-wire fences should have meshes, when rectangular, less than 6 by 6 inches to keep out coyotes. For such fences triangular meshes are much better than square ones.
5. In fencing against coyotes with woven fences care must be used to see that there are no openings at the ground through which the animals can force themselves, since they are more likely to crawl under a fence than jump over it.

In the experiments the animals, under some excitement, were attempting to escape from confinement. In the judgment of the writer, the experiments are insufficient to determine what a coyote would do if the conditions were reversed and, impelled only by the stimulus of hunger, he were attempting to enter an inclosure built of these fences. The barriers would surely be far more formidable. Experiments with certain types of fences, with sheep inclosed within them, and in a country with wolves as plentiful as they are at Chattanooga, would be far more conclusive in establishing a safe basis for practical recommendations to farmers.

What Kansas Farmers Do.—The writer interviewed a number of farmers in Kansas who have had experience with poultry and farm animals in coyote-infested country. Several of them had for some years been using for corrals and small pastures woven-wire fences, and had found those from 57 to 60 inches high entirely coyote-proof. These fences have triangular meshes and are of sufficient weight to be suitable for all kinds of stock. Such a fence, if set with the lower edge on the ground and anchored down where necessary, can safely be recommended as coyote-proof. Their cost, however, is possibly too great to bring them into general use for sheep pastures. Where land is valuable and pastures of the best, they will prove economical, for they have the merit of being both dog-proof and coyote-proof. Dogs, both large and small, that by chance get inside the inclosures are unable to get out, and have to be let out by the gate.

Between these rather expensive fences and the cheapest form that may be found efficient many grades may exist. In experiments to determine the efficiency of any form it is necessary to consider the familiarity of the animals with fences in general. In a new country a very simple fence might be ample at first to keep out wolves, but ultimately would prove insufficient.

Foreign Experience.—Mr. T. T. Hoole, of Cape Colony, Africa, in the paper already quoted, gives the following experience in determining upon a jackal-proof fence:

"My first importation of 2-foot 6-inch netting served its purpose for a year or more, when I found the jackals as troublesome as ever. The addition of a single barbed wire assisted for a time; but after some years of experience and comparing notes, I found that nothing short of a 3-foot netting and four barbed wires would be effective. I have given the above particular of my experience as a warning to the inexperienced, that half measures are simply a waste of money and that badly erected fences, although effective for a time, will end in disappointment and failure."

Mr. Hoole has 18 miles of the fence just described, while a neighboring stockman has 45 miles built. The cost, including labor, when built of the best material—sneezewood posts and kangaroo netting—was estimated at £106 per mile—about $500. This fence was designed for ostriches, cattle, springboks, and sheep; a fence intended for sheep alone could be built for less. Material and labor are both much more expensive than in the United States. A fence similar to that described by Mr. Hoole could be built in most parts of the West for about $200 to $250 per mile.

A writer in the Nor' West Farmer states that when he first began sheep raising in Manitoba a 2-strand barbed-wire fence was a complete barrier to the coyotes, but that in less than two years they became used to it and would go under or between the wires without hesitation. More strands were added without effect, until a woven-wire fence was adopted, which proved satisfactory.

In South Africa three types of fence have been in use for protection against jackals, and each has advocates among the farmers. The cheapest is built of strands of barbed wire placed close together and stayed at intervals by light strips of wood fastened

to the wires by staples. In the second form the staying is done by light, smooth wire woven in by machinery, involving more labor in the building. The third type is that recommended by Mr. Hoole. It is more expensive, but seems always to have stood the test of experience. The others have not always been satisfactory, but their advocates claim that the fault has been in construction and not in design. The jackals have entered the enclosures through openings at the ground.

CALIFORNIA COYOTE-PROOF FENCING.—Mr. J. H. Clarke of Laytonville, Mendocino county, Cal., has for several years succeeded in fencing coyotes from his sheep range. In a letter to the Chief of the Biological Survey, dated March 4, 1905, he describes the fence and relates his experience:

The fence, inclosing nearly 4000 acres, consists of redwood pickets, 6 feet long, driven into the ground 1 foot and leaving spaces and cracks not over 4 inches wide; posts 8 feet long and driven 2 feet, projecting 1 foot above the pickets; two barbed wires stapled to the posts, 5 inches above the pickets and some distance apart. These should be on the outside of the posts. The pickets are driven evenly by using a slat as a guide at the bottom and a line at the top. One barbed wire is placed at the bottom on the outside, to prevent digging. The pickets are fastened to a No. 9 cable wire with a No. 13 wrapping wire. The posts are set 12 feet apart, or less, according to the surface, at top and bottom of each rise or indentation.

Where gulches or small streams are crossed, boxes and gates are put in. Where larger streams are encountered a dam is first put in and the gate so swung as to rest on or against the dam head in the dry season.

The cost of construction varied from $320 to $400 per mile. Galvanized wire was used, and of the barbed the thickest set four-pointed wire obtainable. If four-point wire could be had, with sharp points set not over 2 inches apart, the top wire might be dispensed with.

While this fence was begun in 1897 it was not finished until three years ago. It was partly experimental at first, and at the end of the second year only that portion of the range used for lambing was enclosed in a coyote-proof fence. We do not know that a coyote has ever scaled or jumped it. A very large coyote that got in through an accidentally "propped" floodgate, though chased by dogs all day, could not be made to jump out, even when cornered. Considering the steep, wild and broken nature of the country, with several "slides" in the fence that could not be avoided when building, and which move and displace the fence during hard storms, it is not surprising that a few coyotes have gotten in. Fortunately, partition fences have aided in the capture of these before much damage was done. Two obstacles are encountered in keeping up this fence—trespassers (who cut or break a picket to get through) and slides.

Coyotes are very persistent, and when they see young lambs on the opposite side will follow the fence for miles, trying to find a hole. * * * None have gotten in this season.

When we began to fence against them, the coyotes were literally driving sheep out of the country. * * * Horses and cattle have taken their places, but return less than half the profit sheep did prior to the coyote's inroads. Excessive rains in winter and irregularity of landscape preclude the practicability of close herding With us it was either abandon sheep or fence the pest out. Fortunately we adopted the latter.

While the fence used by Mr. Clarke is expensive, the complete success of his experiment is of much interest. In most parts of the West woven wire would be cheaper than pickets and would require less labor in its erection. Where the land is as uneven as that just described, the use of woven wire may be impracticable.

Mr. D. W. Hilderbrand of California, who has built coyote fences for the ranchmen in the San Joaquin valley, recommends a 3-inch mesh woven wire fence, 36 to 40 inches in height, with two barbed wires on top, 5½ inches apart, and one at the bottom. He recommends that the posts be set 20 to 30 feet apart.

From data now available it seems reasonably certain that a fence constructed of woven wire with a triangular mesh not over 6 inches across, and of a height of 28 to 42 inches, supplemented by two or three tightly stretched barbed wires, would prove to be coyote proof. It is difficult to make exact estimates of the cost. Woven fences differ in weight, price and durability, and freight charges on materials depend on the distance from distributing points. The cost of posts and labor varies much. An estimate based on so many variable factors is of little value, but an average of $200 per mile would probably allow the use of the best materials.

Further experiments with wire fences will be made by the Biological Survey in co operation with sheep growers in the West, and the results will be given to the public as early as practicable. The matter is one of great economic importance, and the Survey will welcome correspondence with persons interested in the subject.

AGRICULTURAL SCIENCE.

Potash in California Fertilizer.

TO THE EDITOR:—In Bulletin 162 of the California Experiment Station are found some interesting features of the California fertilizer industry. The Bulletin reports upon eighty samples, representing fifty-four registered brands or fertilizing materials, selling above $8 per ton. It is also shown that 190 different brands were registered, although but fifty-four were actually found upon the market. It would seem from this that it is the practice of manufacturers to register and advertise to meet the supposed needs of farmers a large number of different fertilizers which are not actually carried in stock, but are made up as special mixtures only as orders are received. Notwithstanding this, the fact is that the trade in fertilizers is limited to a few standard brands and the samples.

It should be said here that it is the practice to use the terms "complete" and "special" fertilizer, according as the material carries all the requisite plant food elements, or but one or two of them. The three elements required to make up a complete fertilizer are nitrogen, potash and phosphoric acid. These must be present, and in proper proportion, to secure the highest returns, unless it is very positively known that the soil is well supplied with some one or more of the elements named, and in an available form.

If we examine the publication in question for the average composition of fertilizers on sale in California we find that the average guarantee and ascertained composion for the period included was as follows:

	Guaranteed, %	Found, %
Available phosphoric acid	8 08	8.72
Nitrogen	3.66	3.92
Potash	3.76	3.96

Out of the potash samples examined sixty were within the limit of efficiency legally allowed in all the ingredients. It is especially noted that eight of them, or 10%, fall below the guaranteed percentage of potash. This would seem the more important since nearly all of these fertilizers are used upon citrus fruits, and under the conditions in which potash should undoubtedly be used in order to properly balance the plant food, to make juicy and well flavored fruit.

Another thing of importance is the tendency indicated among growers to select low-grade fertilizers to their own disadvantage. The appreciable advantages of using a high-grade fertilizer will be seen by a comparison of the two following illustrations:

Suppose, for example, a fertilizer of this low-grade composition is offered:

	Lbs.
Phosphoric acid, 6%	600—20% superphosphate.
Nitrogen, 2%	275—blood and nitrate of soda.
Potash, 3%	125—sulphate of potash.
Total material used	1,000
Filler required to make ton, 1000.	

Another of this higher grade composition is offered:

	Lbs
Phosphoric acid, 12%	1,200—20% superphosphate.
Nitrogen, 4%	550—blood and nitrate of soda.
Potash, 6%	250—sulphate of potash.
Total material used	2.000
No filler required.	

Supposing the second formula to cost twice as much as the first money would be made by buying the second; because, for the same amount of plant food, only one-half of the second would be needed per acre and this would require but one-half of the freight charges and one-half the time spent in handling. Nor is this all. The filler is worthless to the farmer, but it costs the fertilizer manufacturer as much to mix and handle the filler as it does the fertilizing materials themselves, and he, of course, has to charge for his labor and time. Farmers have been heard to exclaim in disgust and surprise that they had seen fertilizers that actually contained sawdust, sand, cinders, etc. This is probably true. The manufacturer is at liberty to use anything he chooses as filler, so long as it is not an injurious material. The farmer himself is responsible for low-grade goods. He demands a fertilizer at a low price per ton, and the filler is absolutely necessary to make this, but he must pay a relatively higher price for the actual plant food present. The filler is simply used to dilute the other materials in accordance with the lower cost.

It should be said that the same principle holds true in the purchase of potash salts alone. The more concentrated and, therefore, the higher priced is the more economical to purchase for the same reasons as indicated above. While filling in the sense used above is not used in these salts, yet the natural impurities present serve commercially the same purpose, and increase the actual cost of the potash.

Another thing is clearly shown in the bulletin in question, viz., the most exclusive use of sulphate of potash in the fertilizers of California. Only small quantities of the chloride or muriate are shown in the materials constituting the complete fertilizers, and, in fact, in any of the materials reported upon. While this is doubtless the best in which to purchase potash for citrus fruits, yet for many purposes in market gardening and in many localities, the slightly cheaper muriate, carrying practically the same amount of potash as the sulphate, is likely to prove satisfactory; especially is this true where leafy crops are concerned, or where the use is for trees not yet come to the bearing age. G. W. SHAW.

Berkeley, Cal.

THE Windsor Herald says S. B. Henley, one of the leading chicken raisers, had 494 hens on his ranch in the spring of 1904. During the year he sold eggs and chickens to the value of $2045.35, and paid out for feed for his hens $348.60, making him a net income for the year of $1696.75.

THE POULTRY YARD.

Roup and Its Treatment.

Although much has been printed upon this subject it remains a constant topic of interest and importance to poultry growers. A writer for the Petaluma Poultry Journal recently gave his method of operating for roup, and Dr. Salmons' new book on the "Diseases of Poultry" sketches the disease and gives remedies. First take Dr. Salmons' suggestions:

SYMPTOMS OF ROUP.—"When first attacked the affected birds present the symptoms of common cold or catarrh. There is a watery secretion from the nostrils and often from the eyes, with general weakness and prostration greater than would be expected from simple catarrh. The birds sit with the back arched, the head and neck drawn down towards the body, the plumage roughened, the respiration is more or less obstructed, rapid, audible and strident; the vision is impaired and swallowing difficult. There is frequent shaking of the head, sneezing and expectoration of mucous secretions. If the mouth is examined at this early period the tongue is found to be pale, white; small grayish spots, shaded with black, and slightly projecting above the surface, are seen along the border, the upper surface or at the base.

"The following day the condition is aggravated, the temperature is several degrees above the normal, the appetite has disappeared, and there is diarrhœa with greenish or yellowish evacuations. From the open beak there escapes a thick, grayish mucus. The eyes are unnaturally dilated, projecting and partly covered with the thick secretion which has accumulated between the lids. The nostrils are obstructed by the thickened and dried secretion. Walking is irregular and difficult. The mucous membrane of the mouth and larynx is red, congested, inflamed and shows numerous dark-red elevations covered with fibrinous exudate. The patches on the tongue have increased in size. They are gray in color, dried along the edges of the tongue, but soft and flattened upon its surface and are covered with membranous deposits. The voice often fails.

"The third, fourth and fifth days the whole interior of the mouth may be covered with false membranes obstructing almost completely the opening of the pharynx and larynx. Swallowing is very difficult or impossible and breathing is liable to be arrested at any time. The false membrane first appears as a thin yellowish or grayish layer and becomes thicker as the disease advances."

Diphtheria of birds is undoubtedly contagious and preventive measures should be taken at all times. Disinfect the poultry houses and runs with a 5% solution of carbolic acid about once a month, and where the disease has made its appearance this solution should be used once a week until all traces of the disease has disappeared.

TREATMENT.—The prevention of diphtheria is more successful than its cure, but where the disease does make its appearance the sick bird should be removed at once and placed in a warm, ventilated, clean, dry hospital room, where they will not be exposed to draughts of air, and where they can be readily caught for examination and treatment. Apply three times a day to the diphtheric spots in the mouth and eyes a 2% solution of either creolin or of pure carbolic acid in water, and, if possible, inject a small quantity of the same solution into the nostrils. Remove the diphtheric membranes as soon as this can be done without causing bleeding from the affected surface, and continue the application of the remedy. Tincture of iodine has been successfully applied to the diseased parts of the mouth, and a solution of salicylic acid in water, one grain to the ounce, has been recommended for the eyes.

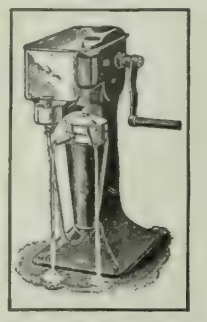
An excellent remedy is made by dissolving thirty-five grains of chlorate of potassium and two grains of salicylic acid in one ounce of water and adding one ounce of glycerine. This liquid should be applied to the diphtheric spots two or three times a day, and may also be given internally in the dose of a teaspoonful to each fowl. Stimulating and tonic remedies have been more or less successful, and are especially valuable in the chronic forms of the disease. The following combination may be used: Cayenne pepper, sulphate of quinine and sulphate of iron, of each one grain. Mix and make into pills with a small quantity of syrup. Give at one dose.

Fowls which have been affected should not be returned to the flock for thirty days after they have apparently recovered, otherwise they may still communicate contagion.

OPERATING FOR ROUP.—The writer for the Petaluma Poultry Journal, to which we have referred, gives these specific suggestions: To secure good results with any local remedy or application it is well nigh necessary, and always helpful, to first thoroughly cleanse the fowl's head, both outside and inside, from all growths and secretions resulting from the disease. For this purpose catch the fowl, place a sack across your knees, sitting on a stool or box, with your utensils near at hand. Place the fowl securely between the knees, then with a small piece of cloth, moistened with carbolized water or a solu-

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tion of chlorinated soda, wipe off the adhering secretions around the eyes and nostrils. If any canker appears in the mouth or throat, remove same with a hairpin, using the loop end for the purpose. Sometimes the deposit fills the slot in the roof of the mouth or bunches up in the passage leading from the eye. These deposits must be removed either by pressure on the sides of the head or by use of the hairpin. A small, smooth hairpin, with the loop part bent together to allow of its easy passage, may be inserted from the slot and put through the canal leading to the eye. A little practice will enable one to find the opening readily and to do the job without unnecessary pain to the fowl. Often a thick coating or film of the deposit is to be found under the inner lid of the eye, and should be removed.

In case a swelling is found, either under or over the eye, or at the hinge of the jaw or in the wattles, it should generally be removed. Experience will tell whether it is of a nature permitting removal.

If it contains a thick, cheese-like substance, a cut can be made with a sharp, small knife blade, and then with the wire loop the secretion can be removed.

In cutting under the eye and just back of the nostril care must be taken not to cut a vein, which experience only can teach one to avoid, but the chief difficulty if the vein is cut comes from the necessity of shortening the operation to allow the blood to thicken and stop the flow.

My experience has been almost uniformly successful when I have succeeded in getting all the stuff out of the cavity, but it takes care to tell if it has all been removed. By putting the finger in the fowl's mouth and gently pressing the side of the head between the finger and thumb, one can soon learn to tell whether any lumps remain.

The kind of swellhead that remains soft and watery is much harder to cure than when it forms a hard lump, and the kind that appears to be in alternate layers of flesh and secretion is well nigh hopeless to try to cure.

A swab wet with tincture of iron should be applied to the sore spots in the throat and on the head and inserted into the cavities whence the lumps have been taken.

The head may then be dipped in whatever preparation you may prefer, my experience causing me to favor permanganate of potash or kerosene.

After losing an entire hatch of chicks from roup I put a fine lot of twelve-weeks-old pullets into a tight roosting house, with only two six-light sash on opposite sides of the house for ventilation. In a few days five or six cases of swellhead appeared, caused by getting too warm at night and catching cold on being let out in the morning. Only one window was kept open at night. I at once put the affected ones in a separate run after dipping their heads in permanganate, then put the permanganate in the drinking water for all the flock, and cut a hole 3 feet square in the top of the east gable of the house, covering it with a gunny sack, single thickness. This treatment not only checked the spread of the disease in the large flock, but cured every one of the sick ones separated from the flock at the start.

THE DAIRY.

A Stanislaus Holstein Herd.

A writer for Hoard's Dairyman gives an interesting account of a Holstein dairy establishment, near Modesto, as follows :

Dr. Evans' ranch at Modesto, Cal., contains 210 acres, and the entire tract has been put down to alfalfa, and the doctor has cut some immense crops of this most valuable forage plant. He cuts some years as many as seven cuttings of hay, and then has lots of excellent pasturage.

Prominent features of the ranch were the big cow barn and a big stack of alfalfa hay. A comfortable dwelling is upon the place, but the doctor intends ere long to build a larger and more up to date structure, and then, he says in his joking way, "he will come out and stay over night once in a while."

As soon as the doctor had hitched the tall roadster we repaired to the big cow barn, and as the doctor opened the door leading into the long tie up I was for a moment lost in admiration at what I beheld—a great array of lusty black and white beauties, standing all in a row in regular order, and looking as much alike as a lot of peas that had come out of the same pod.

They were so large in frame, so perfect in form, and withal so good to look upon that I was more than interested; I was delighted; and it does one good in this age of shams to see men like Dr. Evans doing things on such a generous and thorough-going plan.

The doctor started his herd with twenty-two head of thoroughbred Holstein cows purchased from the Leland Stanford estate. Now he has 134 head of cows and calves and twenty bulls.

The doctor says that in the selection of his breeding stock he looks to constitutional vigor rather than blood lines. No matter how finely an animal may be marked with the best lines of its breed, if it has a weak constitution he does not want it.

I should say, by an inspection of the doctor's herd, that this theory works excellently well in practice. His cows, while large in frame and in limb, were well formed and trim looking. But a prominent and predominating feature was the universal ampleness of the udder, indicating remarkable milking qualities.

Among the matrons of the herd the doctor pointed out to me several examples of champion milkers. There was Madame Vecenia, now four years old. When three years old, and just after the birth of her second calf, she gave ninety-seven pounds of milk in one day.

The next ten standing in their order below Vecenia, the doctor said, were good for their ten and twelve gallons of milk per day. One that had been milked for six months gave fifty-seven pounds of milk the day next preceding my visit. Then there was Madame Ceruela, who last year, just on grass alone, made twenty-four and one-half pounds of butter in one week. Next came Senorita Ceruela, who, when twenty-six months old, and having but recently dropped her first calf, gave fifty-eight pounds of milk in one day. And so on down to the end of the herd. Next we went to see the calves, and a handsome lot of little fellows we found. They were lusty, happy and gentle. The doctor's method of rearing his calves is very simple indeed. Until the calves are two months old he gives them nothing but fresh milk. From that on, until they are five months old, he gives them partly fresh and partly skimmed milk; after that he gives them the skimmed article exclusively.

His feeding of cows is even simpler. He has confined their diet thus far to alfalfa alone. But he intends before long to add a ration of some kind of grain.

After patting and fondling the babies, as the doctor calls them, we went out to see the heifers, the most of whom were with their first calves and expecting soon to become mothers. These young females were off the same piece with the cows and calves; a nice bunch indeed.

Out in the corral surrounding the big alfalfa stack we found their highnesses, the herd bulls. At the head of these stood Ignaro de Kol, who stands 23538 in the Holstein-Friesian herd book and 251 in the Advanced Register. He is the sire of the cow Juliana de Kol, owned by the Pierce Stock & Land Co. of Stockton, Cal., and who was taken to the St. Louis Exposition last year by the California Promotion Committee. Juliana de Kol, when between two and three, won the world's record for cows of her age.

Next to Ignaro de Kol stands a grandson of the world's champion cow for all ages. He is known as Michaelas Mechthildus.

Then comes Parthenea Agnes Pietertje Netherlands, a grandson of the cow Mercedes Julip's Pietertje, the world's champion official cow of 1902.



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Agricultural Review.

Butte.

GRASSHOPPER CROP MAY BE LARGE.—Chico Record, May 23: Parties whose business takes them into the foothills state that there is every indication that there may be a scourge of grasshoppers later in the season, as they exist in quantities seldom ever seen before in this locality. A gentleman from the foothill section above Rock creek, states that in that locality they rise in clouds upon the approach of a person from the short grass on the ranges, but that they have not yet begun to migrate to the fields in the valley below. This may be accounted for by the fact that as yet they are very small, apparently having not attained their growth.

Colusa.

DOUBLE-HEADED BARLEY.—Sun: J. B. George of the East Side, brought to this office some heads of barley with two perfect heads, both starting out at the first joint below the head. Some of the stalks had three heads, but these were not so perfect as those of two heads, where both heads were perfect. Mr. George says that there are a number throughout his field, and that he will go over it and gather enough of the double heads to plant a plot of ground by itself next season and note the result.

Fresno.

EARLY HARVESTING. — Republican, May 27: Hector Burness, local representative of Balfour-Guthrie Co., believes he has broken two records this year. So far as he has heard he is the first to have begun harvesting, and has shipped the first carload of barley from this county. The barley was shipped Thursday from Clotho, the shipping station on the Waverley ranch, near Sanger. The harvesting began on the Waverley ranch Wednesday. The ranch consists of 3000 acres, a section of which is in barley and two sections in wheat. A combined harvester, drawn by thirty-two head of mules, was started, and another harvester will be put on in a few days. The crop is particularly fine. The barley will yield fifteen sacks to the acre, and the wheat will run from eleven to twelve. It is early sown summer fallow, having been put in by October 15th. The same firm has half of the Strathmore ranch of 4000 acres between Lindsay and Porterville in grain, and harvesting will begin there at once, the grain being also early sown. This is said to be the earliest harvesting ever done in Fresno county.

SMYRNA BARLEY. — Sanger Herald: Grain buyers say that the market for Sonora wheat will open at $1.25, and about $1.40 for milling. They estimate that rust has ruined at least one-third of the entire wheat crop of this section. Barley looks fine and there will be a heavy crop, but warehousemen are unable to quote prices as yet. A new variety of feed barley, known as the "Smyrna," which was introduced in this section last year by F. M. Miller, has produced heavy crops, and no doubt an immense acreage will be sown to Smyrna next winter. It weighs about 125 pounds to the sack, as against 105 pounds for the old varieties.

Glenn.

GRASSHOPPERS DOING GREAT DAMAGE.—Orland special to Sacramento Bee: Grasshoppers in large numbers are in the strip of country west of here, and continue to be a source of much anxiety to the fruit and alfalfa growers of Orland. The pests are traveling in an easterly direction and have already reached Orland in large numbers. They are now eating the leaves off the trees and taking the alfalfa as slick as a mowing machine could. Several attempts have been made to stop their advance, but without success. They are doing great injury to trees and vines, which nearly all die after losing their leaves.

Kings.

GOOD COWS.—Hanford Sentinel: M. P. Troxler is delivering 183 pounds of milk per day to the Kings county creamery, which he takes from only eight cows. He retains enough of the milk at home for family use besides.

LEVEES AGAINST TULARE LAKE.—F. V. Dewey, in Hanford Journal: The work of building new levees and strengthening old ones is going on all over the old lake bed, for it seems that again this year, the same as last year, there may be a contest between the spirit of the waters and the men who have risked their money and put in many thousands of acres of grain on the old lake bed, and from which they will, unless the lands are flooded, harvest immense crops, which will bring them great returns. Last year, as all our local people know, the levees broke in many places on the north and west sides of the lake, and thousands of acres of heavy grain, which bid fair to make the owners financially independent, were covered with flood waters from the river. The lake farmers this year are going to save their crops if they can, and they are apparently going to be successful, though the test of the effectiveness of their levees probably will not come for a month yet.

BIG BERRIES.—U. S. Wright is harvesting a fine crop of strawberries this season. He has several acres and some very fine fruit. He picked twenty-four berries of the Marshal variety last Thursday that weighed just a pound.

WHAT HIS COWS DID.—H. W. Bennett has realized from the sale of butter from four cows the past twelve months the sum of $336.50, or an average profit of $84 on each cow. However, this does not include the butter retained for family use nor the three calves which he sold during that period for the sum of $25.

Mendocino.

WOOL SALE DAY.—Ukiah City Dispatch-Democrat: R. R. Lucas announces that wool sale day will be on Tuesday, June 20. The outlook for a good price for wool is exceedingly bright, and at least 30 cents is expected by some of the wool men. Offers of that figure have been made in one or two instances. It has been nearly a quarter of a century since 30 cents was paid for wool here. The date for Cloverdale has not as yet been set, but it will in all probability be on either Tuesday preceding the Ukiah date or on the Tuesday following.

Riverside.

GREAT MELON CROP.—Los Angeles Herald: Beginning the first week in June, the melon crop in and around Coachella will be ready for shipment, and the estimated yield of 630 carloads of the fruit will be started on its way to all the large markets of the United States. From an industry which four years ago amounted to but little, melon growing in the southern part of the State has grown to be one of paramount importance. It is estimated that this season's yield will be double that of last year, but with the improved facilities for handling the fruit little difficulty will be experienced in placing it on the market in first-class shape. During the past eight months a number of icing and refrigerator plants have been erected at all the towns serving as depots and more are under process of construction. The one at Coachella, which is in the heart of the melon district, has been built at a cost of $45,000, and is to be used entirely for packing and preparing the fruit for shipment, all of which goes over the lines of the Southern Pacific. The California product is ready for market from three to five weeks earlier than the famous Rocky Ford melons and with an unexcelled delicacy of taste, together with the advantage of early ripening, threatens to take the place of the Colorado article. Last season growers of the district realized as a net gain from the growing of cantaloupes, $64,000, with $7000 from watermelons. The profits of the present season will be far in excess of that amount.

San Bernardino.

ORANGE SALE.—Sun: What is about the best sale of oranges in this section has been made between George Parsons and G. R. Hand & Co. Mr. Parsons received the sum of $1265 for the fruit from 219 trees, which occupy a little over two acres of land. The fruit was Mediterranean Sweets, and grown in East Highlands, the trees being about eight years old. As to what the fruit will bring in market is not known. They have not reached their destination.

San Joaquin.

SELLS GRAPES ON VINES.—Lodi special to Sacramento Bee: Wright Covell of Woodbridge has accepted an offer of $150 per acre for the crop on his 17-acre vineyard of Tokay grapes. The vines are fifteen years old and are considered the richest in this section. This is the highest price ever quoted here for grapes at this time of the year. By signing the contract the owner loses all responsibility as to the crop materializing, and should unfavorable weather conditions interfere with the grapes, the buyer stands to lose. On the other hand, should the crop reach expectations, the buyer will make an immense profit, securing the grapes for about 30c per crate and selling at from 60c to $1.50 in the Eastern market.

ONIONS HAMMERED DOWN.—Stockton Mail: The produce buyers, headed by Joe Cuneo, formed a little trust the other day and hammered down the price of onions, which had been selling for $1.25 a sack. The buyers finally decided that, instead of bidding against each other, they had better get together. They did so, with the result that onions dropped to 90c and then to 75c, with prospects that they may go even lower. It is a good thing for the buyers, but a mighty poor thing for the onion growers.

Santa Cruz.

BERRY CROP OF PAJARO VALLEY.—Watsonville Pajaronian: The berry outlook in the Pajaro valley this season is more encouraging at the present time than for several years past. While the output will perhaps not be so heavy in the aggregate, growers will no doubt make more money than they did last year, for prices are very fair at present and promise to continue so. Two strawberry growers in this valley have contracted their crops for the season to Hunt, Hatch & Co. of Oakland. The crops of J. W. Lamborn and the Butler Co. of San Francisco, both ranches located a few miles north of this city, have been purchased by the above company. It is reported on good authority that one of the above growers sold his entire crop on a $3 f. o. b. basis, while the other obtained a figure a shade lower. While the f. o. b. plan insures the grower a certain figure for his crop throughout the season, a number of strawberry men in this valley say that they do not care to contract their berries even at $3 a chest, but prefer to handle them on their own responsibility.

Solano.

HIGH PRICE FOR CHERRIES.—Republican: The Earl Fruit Co. sold on May 10 in New York six boxes of Tartarian cherries at $5.87½ per box. These were shipped by L. Cravea of Cordelia. This is the highest bona fide price paid for any single box of cherries shipped from Suisun this season sold at public auction.

Sonoma.

OF INTEREST TO PRUNE GROWERS.—Sheriffs Bros., the well-known prune packers and buyers of Healdsburg, and who have been successfully established in business for some years, have issued a card to the prune growers. Heretofore it has been largely the practice to buy prunes on the grader test, and while this is admitted to be a fair proposition for both buyer and seller, the firm has decided to buy this year on the bin test.

Stanislaus.

FARMERS FEAR HOPPERS.—Modesto Herald: The presence of grasshoppers in the Ceres neighborhood is becoming pronounced and some of the farmers are quite apprehensive. Mr. Averill on Saturday reported conditions on his place to Horticultural Commissioner Rutherford. He stated that he has twenty acres of alfalfa near Ceres that is simply alive with young hoppers, and he very much fears that as they mature they will take the crop, if not twenty acres of beets, adjoining, also. Mr. Averill states that other farmers report young hoppers in alarming numbers. He is at a loss to account for their presence in his alfalfa. They apparently bred there, and yet he observed no hoppers on his place last season to which to attribute the eggs.

Yuba.

CROPS SHORT.—Marysville special to Sacramento Bee: Ferdinand Hauss says there will not be enough fruit of the canning variety in this section to satisfy the packers already established in Yuba City and Marysville. He predicts also that the great majority of the orchards hereabout will produce very light crops of marketable fruits—far short of what the early part of the season promised. All this is owing to the rapid advance of the spring, which at times took on the warmth of summer, directly following a rainstorm.

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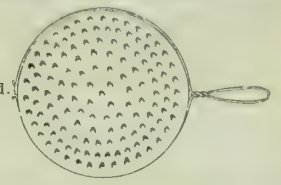
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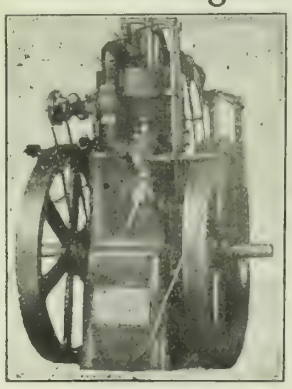
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What's the use to sit and worry if you lose, who thought to win?
Kick the worry out the winder—let the livin' sunshine in!
Time ain't sighin'—
He's a-flyin';
Worryin' is half a sin!

What's the use to work for worry? Ain't there any hope in sight?
Kick the worry out the winder, in the blizzard an' the night!
Time don't worry—
Too much hurry!
Swifter than an eagle's flight!

What's the use? There ain't a reason, nor the shadder of a rhyme,
When the worl' rolls on in music, an' the stars are keepin' time!
Time ain't cryin'—
He's a-flyin',
An' you're on the wings of Time!

—Frank L. Stanton.

At Table-Setting.

For the table-setting
Fewer are the places,
Fewer round the table
Grow the children's faces.

Changes, changes, changes
Life and Death are bringing;
Sore my soul misgives me,
Fears my heart are wringing.

Otherwise I fancied
As I hushed their weeping;
Otherwise I fancied
As I watched them sleeping.

Small, we kept them near us,
Thou and I together;
Hard the task without thee,
Lonely the endeavor.
Round the board so crowded
Wider grow the spaces,
For the table-setting
Fewer are the places.

—Evangeline Metheny.

Dreamland.

Here's the end of Dreamland, here's the Road of Day,
Kiss me of your kindness and let me go my way!
All the hours we squandered, all the miles we went,
They were the gold of Dreamland and all the gold is spent.
Hard and hard, O Heart of Me, overhard it seems:—
Lord! the pleasant palaces * * * in the Land of Dreams!

—Horatio Winslow.

The Chaperon Speaks.

I know it has become fashionable again to stick up for one's own family with a clannish energy in public, no matter what one's private individual opinion concerning the person in question really is. Nevertheless, I can't help feeling wickedly satisfied every time I think how completely let down Hermione was.

Hermione is twenty-five, looks twenty, has big black eyes, a perfect complexion, a glorious figure and marvelous clothes. Moreover, she is destitute of any tender feelings or sympathies of any sort—is the extreme limit so far as one type of the up-to-date girl is concerned. It would take a diamond glass cutter even to make a faint mark on the organ which does duty as her heart. Just because she is my cousin I don't feel ogblied to love her and I'm glad of it.

However, there may have been plenty of foolish men who have attempted the feat. They have all had their education extended, which, of course, was a good thing for them. Some have grown wise and taken their diplomas and retired, but several have hung on, hoping for better days to come. It speaks well for Hermione's ability as a masquerader. There isn't one of the faithful ones but would swear fervently that she was the tenderest, most sympathetic and utterly feminine creature in existence.

Oh, I have all sorts of admiration for Hermione—I don't see how she does it!

She got in a confidential mood the other day. The weather has lots to do with people being confidential and it was one of those gray, damp mornings when you feel so blue you'd weep on the cook's shoulder, if there was no one else handy and she gave you half a chance.

"I'm wasting myself and my life," Hermione began, decisively, throwing another stick of beechwood on the fire and fluttering down on the fur rug with the tongs in her hands. "Of course, it's awfully nice having so many to make things pleasant, but I realize that it can't last always. I'll get old some day."

"Impossible!" I protested.

"It will be a nuisance having a house on one's hand to manage," she went on, reflectively, "and I've no doubt I shall be bored to death seeing one eternal man 365 days in the year—but then I shall spend at least half the time abroad—and he certainly can't leave his business that long."

"Perhaps he won't want to if he could," I said darkly and a bit indignantly. Really, Hermione was too brutally cold-blooded.

"I'm trying to decide whom I shall marry," she went on, calmly. "It rather helps to talk it out—and then you are levelheaded enough to give advice worth while. Now, as to Dickson Temple—"

"Good gracious!" I broke in. "Have mercy on the boy, Hermione. He really loves you, you know, and if you don't marry him he'll cherish your memory to the day of his death as the one perfect woman. Let him have his dream."

Hermione glanced at me somewhat offendedly. "I'd like to know anyone else he might marry he'd care any more for," she said. "Besides, he's really too young to have the responsibility of so much money all alone. Well, Dickson aside, there's Richard—only he's set in his ways. John Faver is stingy, I'm almost sure. Somehow that Morton man doesn't appeal to me—though he has excellent discretion as to ordering violets and menus. Do you know, I'm rather seriously inclined toward Leslie Vincent? I'm glad to see you smile that way. You like him, don't you?"

"I certainly do," I said enthusiastically. "You have good judgement."

"Thank you," said Hermione, with gratified cheerfulness. "You don't know what a load you take from my mind by approving my judgement. I just needed some one's assurance that I was all right before I went ahead. Leslie hasn't been around so much of late and it's given me a chance to consider him more carefully. I haven't a fault to find with him, really. He's good looking enough and richer than I dared hope for, and such a charming appearing man that one could be justly proud of him.

"Then he really has a fetching way. And, consider, oh, consider that house of his on the drive. No, I couldn't expect to do better. I suppose I might just as well have said yes when he proposed a year ago."

She tilted her head to one side and laughed up at me questioningly. I didn't wonder that she fascinated them, one and all.

"Yes," I replied at last in my silkiest tone, "you really should have done so, for Leslie was here last night and told me he's to marry a Philadelphia girl next month."—Chicago News.

Items of Interest.

The finest building stone in the world is neither granite, sandstone, limestone nor marble, but the Fijian fossil coral. When first quarried it cuts like cheese, but after being exposed to the air it quickly hardens. With the years it becomes incredibly hard, and no more enduring stone is known.

In cutting breakfast bacon, lay the rind side down on the meat board, cut down to the rind as many slices as are needed, then cut it off in a block. Turn edgeways and cut off one end, then the other end, the inside, and last the rind, and you will have trimmed all the slices nearly as quickly as you could have trimmed one.

Don't think of the complexion only and fear tan and freckles; they can be removed. The sun is one of the most efficient of all surgical methods in the treatment of morbid growths, as warts, moles, and all parasitical skin diseases. Don't be afraid of sunshine. Curative powers are in the chemical rays of the sun, and they rejuvenate.

It is a curious fact that a boy's hair grows one-half slower than a girl's. In boys the average rate of growth is 3 feet 3 inches in six years, being an average of .018 inch a day. During the twenty-first and twenty-fourth years a man's hair grows quicker than at any other period. It takes an eyelash twenty weeks to reach a length of .429 inch, and then its life is from 100 to 150 days. By means of a camera the wink of an eyelid has been measured, and it was found that twenty winks can be made in four seconds.

Once upon a time the insidious grapeseed was looked upon as the arch enemy of man's appendix and the chief cause of man's appendicitis. People used to look grave if they happened to swallow one unawares, and an orange pit was looked upon in certain quarters as sure death. With greater experience has come a modification of these views. Physicians lay great stress on the avoidance of chills after exercise or when much fatigued in mind or body. It is also of prime importance to masticate the food well and not to swallow any food that has not been perfectly softened. Aperient salts, waters and pills must be avoided, unless prescribed by one's physician, and should in any case never be allowed to develop into a habit.

Persons who have been brought up to dread arsenic in green wall-papers will hardly know whether to be pacified or still further alarmed by a recent bulletin issued by the Department of Agriculture at Washington, describing a number of tests of wall-paper, furs, clothing, etc. It shows that while many papers do contain arsenic, hardly any have it in dangerous amounts, and that the danger arising from furs and certain articles of apparel was vastly greater. While only four in 537 samples of wall-paper contained more than one-tenth of a grain to a square yard, a brown bear rug contained 16.99 grains of arsenic to a square yard. Stockings, particularly black stockings, were found to contain arsenic in alarming quantities. Massachusetts is the only State in the Union that has a law regulating the use of arsenic in wall-paper, and this fixes the maximum amount at one-tenth of a grain a square yard. The Washington experts recommend that the limit be fixed at five-tenths of a grain a square yard—a far more liberal allowance of this deadly poison.

Attractive Back Yards.

Now that spring is here and housewives are beginning to think of the semi-annual upheaval of household goods, it would be worth their while also to take the back yard into consideration. It is usually a sadly neglected place. Fastidious housekeepers, who never fail to have their cellars and attics cleaned out, often neglect their kitchen yards or make them a dumping place for all sorts of things. Even in the country the back yard is neglected.

Many a beautiful flower garden is spoiled, as far as appearance goes, by an unsightly array of tin cans, mop cloths, kindling wood and ashes. Why not pile the kindling wood in a corner, with a screen of lattice work in front of it, or, better yet, in a shed built of latticework that is roomy enough to contain the garbage pail, as well as the ash barrel, rakes, hoes, etc.? Over the shed Virginia creepers and other vines can be trained to grow. The Japanese hop vine is excellent for this purpose, being a most luxuriant climber if it has the sunshine. Sweetpeas make a pretty lattice screen for a small garbage bucket, if a housewife feels that she have it conveniently placed beside the kitchen door. Old mops and brooms can be hidden in a closet kept for the purpose or in the latticework shed.

Other things have no rightful place in the back yard, but some women have a passion for saving useless things, with the bare hope of putting them some day to a good purpose, and in consequence they utilize the attic and the back yard as storage places.

In addition to the lattice shed and other utilitarian devices there may be a square bed of herbs placed near the doorway so that the cooks may easily select seasonings for soups and braises. This herb bed can be enlarged, if there is room enough, to include small rows of lettuce, young onions and radishes.

One housekeeping woman who loved flowers had built over her back door a broad cover or "hood," that reached out completely over the stoop. On either side of the stoop she placed long narrow boxes of geraniums, creeping plants and Japanese hop vines. The vines she fastened over the top of the "hood," thus making a perfect bower in summertime. The door led out into the back yard, which had been transformed under her hands into a "kitchen garden." On this embowered stoop one could shell peas or hull strawberries, away from the oppressive heat of the kitchen. A rustic seat in some quiet, out of-the-way corner of the kitchen garden near a sheltering grape vine or small fruit tree is also an ideal place for such work. Kitchen tasks become a pleasant pastime if performed in the pure outside air among the blossoming plants.—N. Y. Tribune.

Popping of lamp-chimneys is music to grocers.

MACBETH.

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Domestic Hints.

DUTCH SCRAMBLE.—Put a good-sized piece of butter in a saucepan, set it over the fire and when melted stir in a cupful of shredded codfish; allow the butter and fish to become well mixed, and if necessary add more butter; then break in five eggs and scramble. Season with pepper and salt and serve very hot.

LADY DAINTY CAKES.—Stir to a cream a cupful of fresh or well-washed butter; add slowly a cupful of granulated sugar, three eggs and two cupfuls of finely sifted flour. Mix and roll thin, then cut into small, round cakes. Beat a tablespoonful of powdered sugar into the yolk of an egg and spread the tops of the cakes with it, grate almonds over them and bake a delicate brown.

ONIONS AU GRATIN.—Cut Bermuda or any large onions of delicate flavor in thick slices, parboiling the slices in salted water. Arrange them in a buttered dish in layers with plenty of breadcrumbs, salt, pepper, and bits of butter. With the top layer of crumbs mix a generous quantity of grated cheese. Do not spread the cheese over the breadcrumbs, as the common custom is, as the cheese then becomes a crust, and is very indigestible.

WAX BEANS.— An English recipe for serving wax beans is novel. Cut the beans breadthwise in ½ or ¼-inch pieces and boil in salted water. Drain well and prepare the following sauce: Make a sauce with equal quantities of flour and butter, add salt and pepper and a cupful of sour cream. Add the beans and allow them to boil up once, stirring all the time. If no sour cream is at hand sweet cream or rich sweet milk with a few drops of lemon juice will serve.

PINEAPPLE ECLAIRS.—Into a cupful of boiling water stir one-fourth cupful of butter, a pinch of salt and one cupful of finely sifted flour. Stir briskly until the paste masses; then allow it to cool and add four eggs, beating one in at a time. Drop in long strips on buttered tins, and bake in a moderately hot oven until puffed up, leaving the oven door open for a little while before removing, so that they may not fall. When cold, split one side and fill with chopped pineapple. Ice the top surface.

Hints to Housekeepers.

The old idea of putting oilcloth under the washstand cover is now adopted for dollies on highly-polished tables.

Flaxseed tea with plenty of lemon juice and loaf sugar is very soothing to sore lungs, and will often cure a hard cough.

Add two tablespoonfuls of paraffine to one quart of water when cleaning windows; it will prevent dust from sticking, and will polish the glass brilliantly.

Cheese may be kept from being mouldy by wrapping it in a cloth dipped in vinegar and wrung nearly dry. Cover the cloth with a wrapper of paper, and keep in a cool place.

If new boots and shoes are varnished on the soles every few weeks with the best copal varnish they will last twice as long, and rarely want resoling. At first they should have two coats of varnish, as leather absorbs it very quickly.

If your white washing gloves have black points before washing them, slightly moisten a little salt, and with your fingers rub it well into the points. This will prevent the black from running, which otherwise it is very liable to do.

A good tonic for the hair is to get a penny-worth of quassia chips and pour on a pint of boiling water. Let stand for an hour or so, then strain through a muslin and bottle. Apply to the hair with a brush of a night. It is also exceptionally good for children's hair.

Clean hairbrushes are essential to the health of the hair and scalp, and the worst cases of dandruff are often to be traced to carelessness in this matter. Directly the brush shows the least griminess, wash it in borax water. Do not have the water more than lukewarm, and "pat" it with the brush, being careful only to dip it in the bristles, for washing is by no means improving to the polish of the back. When clean rinse in clear cold water and dry in the air. Do not put the brush in the sunshine or by the fire, or the bristles will soon become yellow.

A Chicago woman who manages a famous restaurant in that city originated an asparagus patty which is greatly relished by her patrons. The patty is the usual case of puff paste, only it is made long instead of round, and just the shape and size to hold short stalks of asparagus. A delicious Hollandaise sauce is poured over the patty before serving.

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Capital invested, $6,000,000.
Buildings owned and occupied in Scranton, 5.
Total floor space of buildings, 7 acres.
Cost of buildings, $550,000.
Number of employes, 3200.
Total number of students and graduates, Feb. 1, 1905, 755,000.
Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
Cost of preparation of textbooks and instruction papers, not counting printing, revisions, etc., $1,000,000.
Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.
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The Markets.

San Francisco Produce Report.

San Francisco, May 31, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 89⅜@ 90⅞	82⅞@ 83¼
Thursday	91⅜@ 90¾	83⅞@ 83⅛
Friday	89⅞@ 91½	83¼@ 83⅞
Saturday	91½@ 90⅛	83⅜@ 83⅛
Monday	89⅝@ 88⅝	83⅛@ 82
Tuesday	*—@—	—@—

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	48¾@49⅜	48 @48⅜
Thursday	49 @49⅝	48⅛@48⅝
Friday	48⅞@49¼	47⅞@48⅛
Saturday	49⅛@48⅜	48¼@47⅝
Monday	48⅜@47⅝	47⅝@48⅜
Tuesday	*—@—	—@—

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	May, 1905.	Dec., 1905.
Thursday	$ —@—	$1 35⅜@1 34⅜
Friday	1 55 @—	1 33⅞@1 35⅛
Saturday	—@—	1 36 @1 35⅜
Monday	1 55 @—	1 34⅞@1 35⅜
Tuesday	*—@—	—@—
Wednesday	—@—	1 35¾@1 35¼

*Holiday.

Wheat.

The local market has been decidedly firm most of the week, both for spot wheat and futures. There was not much wheat to be had for immediate delivery at any figure, nor is there likely to be any great quantity of spot offerings for some weeks to come. That the harvest in this State will not come up to the expectations of speculators who have shorted the market, and that prices will not rule as low as calculated on, is now clearly established. Even those who have been most pronounced bears now admit by their actions that they guessed wrong. The first new wheat of the year arrived Thursday last from Bethany, Contra Costa county. It was badly shrunken and received little attention from buyers, the best bid on it being $1.30, with $1.45 asked. Had it been No. 1 it would likely have brought $1.55, as good old wheat was not obtainable under this figure. Last year the first new wheat arrived July 6 and sold for $1.27½. The earliest receipt of new wheat at this port was on May 11, 1900, and the price for the same 92½c. On July 9, 1864, the first new wheat sold at $2.80, the highest figure on record here for first offerings.

California Milling	$1 57½	@1 62½
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 wheat	1 50	@1 55
Oregon Club	1 50	@1 57½

PRICES OF FUTURES.

During past week the range on options was:
May, 1905, delivery, $1.55.
December, 1905, delivery, $1.34¼@1.36.

Wednesday, at the forenoon session of Exchange, for May, 1905, wheat $1.55 was asked; December, 1905, sold at $1.35¾@1.35¼.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s10½d@-s-d	-s-d@-s-d
Freight rates	16¼@-s	23¾@-s
Local market	$1 27½@1 32½	$1 50@1 55

Flour.

Values are without quotable change, but for well and favorably known brands the market is firm at prevailing rates. Stocks of desirable qualities are not heavy. There is a moderate movement outward, and local business is fair, considering the time of year and that there is no special selling pressure.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Market has been lightly stocked with this cereal the current week and has ruled against buyers. New barley has put in an appearance, but only in a small way, and no large quantities of new are likely to arrive before July. That receipts will prove as heavy, when the harvest is well under way, as many have been calculating on, is very improbable. The first new arrived this year on the same day as new wheat, on May 25, the barley being from Williams, Colusa county, the quality only fair, and the price realized $1.21½. On this same day a small lot of new from Contra Costa county was sold by sample at $1.30. In the speculative market May barley sold up to $1.31, and December option was higher than previous week.

Feed, No. 1 to choice	$1 27½	@1 30
Feed, fair to good	1 22½	@1 25
Brewing, No. 1 to choice	1 30	@——
Chevalier, No. 1 to choice	——	@——
Chevalier, common to fair	——	@——

Oats.

Stocks of this cereal are small, are mostly held by one firm, and stiff prices are asked. There is no likelihood of supplies being large enough to permit of extensive operations until new crop begins to arrive in wholesale quantities. The oats now on market are principally whites and blacks of ordinary quality.

White oats, fancy feed	$1 65	@——
White, good to choice	1 55	@1 60
White, poor to fair	——	@——
Milling	——	@——
Black oats	1 50	@1 55
Red, fair to choice	——	@——

Corn.

Market is firm for desirable qualities, and not much of any kind offering at present, either on the spot or to arrive. Recent heavy shipments to Central America have reduced stocks to small compass, one steamer the past week taking over 500 tons. It is stated, however, that Central America now has all the corn she will need for some months to come.

Large White, good to choice Cal	$1 45	@1 50
Large Yellow	1 40	@1 45
Small Yellow	1 50	@1 65
Egyptian White	1 32½	@1 37½
Egyptian Brown	1 22½	@1 27½
Eastern, sacked	1 40	@1 50

Rye.

Stocks are light and market is firm at the same range of prices last quoted.

Good to choice	$1 55	@1 65

Buckwheat.

Market is practically bare of offerings, and values are consequently poorly defined.

Good to choice	$2 00	@2 25

Beans.

Good to choice beans are not being crowded to sale. Market for desirable qualities is firm at ruling rates. Two firms claim to have all the Limas. Stocks of Reds are too light to admit of other than small jobbing transactions.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 50	@3 00
Pinks	3 50	@4 00
Bayos, good to choice	3 25	@3 50
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	5 50	@5 75
Black-eye Beans	3 00	@3 15

Dried Peas.

There is some demand for choice Green and No. 2 Niles, and not many of either kind on the market.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

Market shows much the same mixed condition previously noted, growers and dealers continuing far apart in their views of values. The growing crop on this coast is in less promising condition than in the early Spring, the late cool and wet weather being unfavorable for the vines. Some growers are now talking 35c for last year's hops. This year's hops have been contracted for in this State in a limited way up to 17c, and 18c has been paid in Oregon. A Salem, Or., dispatch says: "The formation of a corporation to include all the hop growers of Washington, Oregon, California, New York, and even England, is the plan proposed in letters which have been sent out by the firm of Krebs Bros. of this city, the most extensive growers of hops in Oregon. The plan proposes a pooling of all the hops grown in the territory mentioned, and placing them upon the market at the discretion of a sales committee. The announced object of the proposed organization is to protect growers against market manipulation by the bear element." The New York Producers' Price Current says; "We do not hear of any contracts making for the 1905 crop, though offers of 15c are being made. Advices from this State show everything satisfacrory and the vines in very good condition. Remaining lots of 1904 hops in growers' hands in this State are very light, probably less than 1000 bales in all sections. We hear of a few sales making in the State at 25@26c. On the local market there is scarcely any trading. A sale is reported made last week of a small lot of western Washingtons at 25½c. Brewers are not showing a particle of interest and dealers have little encouragement to attempt to do any business. The reported reimportation of Pacific hops from London has shown its effects here in causing a little easier feeling and we make a little wider range in quotations of best grades."

Wool.

Most of the wool in this State has passed into the hands of dealers and speculators, the only noteworthy quantities now remaining unplaced being in Humboldt and Mendocino counties, where shearing has not yet begun. Much of the wool bought early in the season will net big profits to the buyers. Dealers gave out little or no information, and the Pacific Rural Press was one of the few papers which kept readers posted.

SPRING.

Humboldt and Mendocino	30	@—
Northern, free	28	@—
Northern, defective	22	@25
Middle County, free	26	@—
Middle County, defective	23	@24
San Joaquin and Southern, free	24	@26
San Joaquin and Southern, defective	18	@22
Oregon, good to choice	27	@30
Nevada	31	@29

Hay and Straw.

Common qualities of hay are being offered freely and at much the same low range of values as current for some weeks past, with little prospect of any special change for the better very soon. Choice to fancy old hay, more particularly Wheat, is offered sparingly and brings comparatively good figures. Values for new are not yet quotable in a regular way, very little new having yet arrived.

Wheat, good to choice	$11 00	@ 14 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	7 00	@ 9 50
Barley	7 00	@ 10 00
Alfalfa	7 00	@ 10 50
Clover	6 00	@ 9 00
Stock hay	5 00	@ 7 00
Compressed	12 00	@ 14 50
Straw, ₱ bale	25	@ 50

Millstuffs.

Although there is no active demand for any description of millstuffs, the market for most kinds is firm, owing to supplies being light and mainly in few hands.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 00
Middlings	24 50	@ 27 50
Shorts, Oregon	21 50	@ 23 00
Barley, Rolled	26 00	@ 27 00
Cornmeal	30 50	@ 31 50
Cracked Corn	31 00	@ 32 00
Oilcake Meal	33 50	@ 35 00

Seeds.

Market for the several kinds quoted herewith is exceedingly quiet, as is generally the case at this time of year. There are no heavy stocks. Desirable qualities are being steadily held.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa	8	@12½
Canary	6¼	@ 6¾
Rape	2	@ 3½
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

The ship Atlas, sailing Saturday last for New York, carried 236 cases Extracted, reported to be Hawaiian Island product. Offerings of this year's California honey so far have not been large, and mainly by sample. The movement on local account is light.

Extracted, White Liquid	5½	@ 6
Extracted, Light Amber	4	@ 5
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	11	@12
Amber Comb	8	@10

Beeswax.

Stocks in this center are of very moderate volume and mostly in few hands.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Live Stock and Meats.

Market is well stocked with prime to choice Beef and is quiet at last quoted rates. Veal is not in heavy receipt, neither is the demand for it very brisk; small in prime condition sells to fair advantage. Mutton is in ample supply for current needs, prices showing no quotable change. Lamb was in fairly liberal receipt and market easier. Hogs arrived in just about sufficient quantity to satisfy the immediate demand for fresh pork.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	—	@ 5
Beef, 3rd quality	4	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@ 5¾
Hogs, large, hard, over 200 pounds	5¾	@ 5½
Hogs, small, fat	5½	@ 5¾
Veal, large, ₱ lb	4	@ 6
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	8½	@ 9½

Hides, Skins and Tallow.

The future of the Hide market hinges greatly on the war in the Far East. Should hostilities cease there would be a less active demand for Hides and easier prices.

Bags and Bagging.

The harvest demand for Grain Bags has set in, and, as foreshadowed in these columns months ago, stiffer prices are being asked. Market is firm at the quotations.

Bean Bags	$ 5	@—
Fruit Sacks, cotton	6½	@7½
Fruit Sacks, jute, as to quality	5¾	@7
Grain Bags, Calcutta, 22x36, spot	6¾	@6½
Grain Bags, Calcutta, buyer June-July	6¾	@6½
Wool Sacks, 4-lb	32	@—
Wool Sacks, 3¼ lb	30	@—

Poultry.

Choice young fowls were not in excessive supply and met with a tolerably firm market. Large and fat Young Chickens were most sought after, some extra large in fine condition bringing an appreciable advance on quotations. Very small young and common old stock moved slowly at generally low prices.

Turkeys, choice Young, ₱ lb	$ 24	@ 26
Turkeys, live gobblers, ₱ lb	19	@ 20
Turkeys, live hens ₱ lb	19	@ 20
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	6 50	@ 7 50
Fryers	5 50	@ 6 00
Broilers, large	2 50	@ 3 50
Broilers, small to medium	1 75	@ 2 25
Ducks, old, ₱ dozen	5 00	@ 5 50
Ducks, large young, ₱ dozen	6 00	@ 6 50
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	1 25	@ 2 00
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	1 50	@ 1 75

Butter.

Market has ruled fairly steady, kept so through storing the supplies. Receipts are on the decrease, but there is still considerably more arriving than needed for immediate use. Most of the butter coming forward is of the higher grades.

Creamery, extras, ₱ lb	20	@21
Creamery, firsts	19	@20
Creamery, seconds	18	@19
Dairy, select	19	@20
Dairy, firsts	18½	@19
Dairy, seconds	17½	@18
Mixed Store	16½	@17½

Cheese.

For good to choice flats the market is tolerably steady, there being some speculative demand. Some cheese is arriving too fresh to be desirable or to be fit for storing. Market for small sizes is firm at ruling rates, owing to very limited supplies.

California, fancy flat, new	9½	@—
California, good to choice	9	@ 9½
California, fair to good	8½	@ 9
California, "Young Americas"	10	@11
Eastern	17	@18

Eggs.

The demand for eggs on cold storage account has about ceased for the season, and with arrivals still moderately heavy, the market has presented an easier tone, especially for other than most select. Some Eastern eggs are arriving, the firsts going into cold storage and the seconds being placed on the market, selling mainly to bakers.

California, select, large, white and fresh	21	@22
California, select, irregular color & size	19	@20
California, good to choice store	17	@18
Eastern firsts	—	@—
Eastern seconds	—	@—

Potatoes.

The market for Old is not lacking in firmness, present inquiry being mostly for seed. Stocks of Old are almost wholly Eastern product. New potatoes are arriving freely from River sections and Bay points. Many of the New are small and unripe and for these the market is decidedly weak.

Cal. Early Rose, ₱ cental	1 00	@ 1 50
Salinas Burbanks, ₱ cental	—	@—
Eastern Burbanks, ₱ cental	1 30	@ 1 60
River Reds, ₱ cental	—	@—
Oregon Burbanks, ₱ cental	——	@——
Chile Garnet, ₱ cental	1 40	@ 1 65
Sweet Potatoes, ₱ cental	—	@—

Vegetables.

Asparagus of high grade was not in heavy receipt, but common was in liberal supply. Tomatoes made a fair display, offerings including the California product, as well as importations from Florida and Mexico. Green Peas, String Beans and Summer Squash were all in increased receipt and market was easier. Green Corn which was choice sold readily at good prices, but there was not much of this sort on market. Red Onions were in good supply.

Asparagus, No. 1 to choice, ₱ lb	5	@ 7
Asparagus, No. 2, ₱ lb	4½	@ 5
Beans, Lima, ₱ lb	—	@—
Beans, String, ₱ lb	3	@ 5
Beans, Wax, ₱ lb	—	@—
Cabbage, choice garden, ₱ 100 lbs	50	@—
Corn, Green, ₱ doz	20	@ 35
Egg Plant, ₱ lb	15	@ 20
Garlic, ₱ lb	6	@ 8
Mushrooms, ₱ lb	—	@—
Onions, Australian, ₱ ctl	6 00	@—
Onions, New Red, ₱ ctl	1 10	@ 1 35
Peas, Green, ₱ sack	1 25	@ 1 75
Peppers, Bell, ₱ lb	—	@—
Peppers, Green, ₱ lb	10	@ 20
Rhubarb ₱ box	50	@ 75
Summer Squash, small box	75	@ 1 00
Summer Squash, per large box	1 50	@ 2 00
Tomatoes, Los Angeles, ₱ box	1 25	@ 1 50
Tomatoes, Florida, ₱ crate	2 00	@ 3 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Apricots of the Royal variety were in fair receipt, but only a small proportion of offerings could be termed choice, and for such the market was moderately firm. For Pringle Apricots the demand was not very brisk and was principally local. Green Apples were in sufficient supply to give buyers the advantage on the ordinary run of offerings. Peaches were in increased stock and the quality showed some improvement, but it was the exception where they were well colored and fully ripe. Early Plums made a fairly good showing as to quantity and improved

condition as to quality over previous arrivals. Receipts of Cherries continued of rather small proportions and for choice the market favored the selling interest. Black Figs were on the market from Yuma and were held mainly at $1.25@$1.50 per box. Watermelons from Mexico were offering in a limited way at 10c per pound. There were no heavy arrivals of Currants or Gooseberries, and the former ruled higher. Blackberries sold at a wider range, with market firm for finest. Loganberries were in liberal supply most of the week and market was easier. Raspberries were in slim receipt. Of strictly choice Strawberries offerings were not excessive.

Apples, fair to good, ₱ 50-lb. box..	1 00	@	1 50
Apples. green, ₱ small box	40	@	75
Apricots. Pringle, ₱ crate	50	@	75
Apricots, Royal, ₱ box.....	75	@	1 00
Blackberries, ₱ chest.....	4 00	@	7 00
Cherries, Black, good to choice, bx	75	@	1 20
Cherries, White, good to choice, bx	50	@	90
Cherries, Royal Anne, ₱ box.....	75	@	1 20
Cherries, loose, ₱ lb.....	4	@	10
Currants, ₱ chest.....	4 00	@	7 00
Gooseberries, English, ₱ lb.....	6	@	8
Gooseberries, other kinds, ₱.....	3	@	5
Loganberries, ₱ chest.....	5 00	@	5 00
Loganberries, ₱ crate.....	75	@	1 00
Peaches, ₱ box.....	75	@	1 00
Plums, Cherry, ₱ box	30	@	75
Plums, Clyman, ₱ crate	75	@	1 00
Raspberries, ₱ drawer.....	75	@	1 00
Strawberries, Florin, ₱ crate	50	@	75
Strawberries, Longworth, ₱ chest	7 00	@	10 00
Strawberries, large var., ₱ chest.	3 50	@	8 00

Dried Fruits.

Considering the light quantities of most kinds of dried fruit lately in stock, and the advanced date of the season, there has been a fair outward movement the past week, and as is to be expected, Prunes took the lead in the matter of quantity. The steamer City of Puebla, sailing for British Columbia May 25, carried 143,175 lbs. Prunes, of which 107,550 lbs. were for Northwest Territory. The same steamer took 18,000 lbs. other dried fruit, including 5875 lbs. Apricots, 4000 pounds Peaches, 3125 lbs. Pears, 2750 lbs. Figs, 2250 lbs. Plums. The ship Atlas, clearing for New York, carried 2631 sacks Prunes, about 265,000 lbs. Other shipments of assorted dried fruits, amounting to considerable in the aggregate, were made to Central and South America and Oriental points. Market for desirable qualities of all varieties of last year's dried fruit is firm at ruling rates. Some new Apricots have been contracted for, mainly within range of 5¾@7½c, as to quality. Pears will be scarce, Nectarines very light, and little probability of excessive stocks of Peaches or Plums.

EVAPORATED OR BLEACHED.

Apples, 50-₱ boxes, rings, pressed, good to choice.....	5½@ 6
Apples, extra choice to fancy, 50-₱ boxes.	6½@ 7
Apricots, Moorpark.....	—@—
Apricots, Royal, good to choice, ₱ ₱.....	6 @ 7
Apricots, Royal, fancy.....	7½@ 8
Figs, 10-₱ box, 1-₱ cartons.....	55 @60
Peaches, unpeeled, good to choice.....	5¼@ 6½
Peaches, unpeeled, fancy to extra fancy..	7 @ 9
Pears, standard, ₱ ₱.....	6½@ 7
Pears, choice to fancy.....	7½@11
Plums, Black, pitted.....	5½@ 6½
Plums, Red, pitted.....	7 @ 8½
Plums, Yellow, pitted.....	6½@ 7½
Prunes, Silver, good to fancy.....	—@—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 2¾@3c; 60-70s, 2¼@2⅝c; 70-80s, 2@2¼c 80-90s, 1¾@2c; 90-100s, 1½@1¾c; small, 1¼@1½c

COMMON SUN-DRIED.

Apples, sliced.....	2½@ 2¾
Apples, quartered.....	3 @ 3½
Figs, White, in bulk.....	3 @ 3½
Figs, Black.....	2½@ 4

Raisins.

There is a moderate movement at generally unchanged values. The steamer City of Puebla, sailing Thursday last, carried 13,125 ₱s. for British Columbia and Northwest Territory. Minor shipments were made to other points by sea and rail.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-₱ box....	85	@	——
London Layers, 3-crown, 20-₱ box.....	90	@	95
Fancy Clusters, 4-crown, 20-₱ box.....	——	@	1 30
Dehesas, 20-₱ box.....	——	@	1 85
Imperials, 20-₱ box.....	2 25	@	2 35
2-Crown Standard loose Muscatel.....		3½@	3⅝c
3-Crown Standard.....		4 @	4¼c
4-Crown Standard.....		4¾@	—c
Seedless Thompsons.....		—@	4½c
Seedless Sultanas.....		—@	3 c
Fancy, 16-oz. Seeded.....			6 c
Choice, 16-oz. Seeded.....			5 c
Fancy, 12-oz. Seeded.....			4⅞c
Choice, 12-oz. Seeded.....			4½c
Bleached Sultanas, Woodland Dist., 50s..		4¼@	4¾c
Bleached Thompsons, Woodland Dist., 50s.		5½@	8 c

Citrus Fruits.

Oranges were in liberal supply for this time of year, with demand not very active and offerings mostly under choice. For common qualities the market was weak. Valencias were steadily held. The Government purchased 350 boxes of this variety for shipment to the Philippines. Lemons were in ample supply for current needs and were held as previously quoted. Limes continued to be offered at last noted decline.

Oranges, Navels, choice to fancy, ₱ bx	2 25	@	2 75
Oranges, Navels, fair to good, ₱ box.	1 50	@	2 00
Oranges, Valencias, ₱ box.....	2 50	@	2 75
Oranges, Cal. Tangerines, half box...	1 25	@	1 75
Lemons, California, select, ₱ box....	2 25	@	2 50
Lemons, California, good to choice..	1 50	@	2 00
Lemons, California, fair to good.....	1 25	@	1 50
Grape Fruit, ₱ box.....	1 50	@	2 25
Limes, Mexican, ₱ box.....	4 00	@	4 50

Nuts.

Little doing in this line. There are no heavy offerings of desirable qualities of either Almonds or Walnuts, and no changes to record in quotable values. The coming Walnut crop in this State will be light, in consequence of unfavorable weather while the fruit was setting.

Chestnuts, Italian, ₱ ₱	—	@—
Nonpareil Almonds.....	13	@16
Ne Plus Ultra Almonds.....	11	@14
Languedoc Almonds.....	8	@11
Peanuts, fair to prime.....	4½@	5½
Cal. Walnuts, No. 1 soft shell.....	12	@13
Cal. Walnuts, No. 2 soft shell.....	10	@11
Cal. Walnuts, No. 1 hard shell.....	11	@12
Cal. Walnuts, No. 2 hard shell.....	9	@10

Wine.

The wholesale market shows much the same general condition as previously noted, being rather quiet. Dry wines of last vintage are quoted at 14@17c per gallon, San Francisco delivery, with little demand for ordinary stock and not much high grade obtainable. Sweet wines of 1904 are quoted at 25c per gallon for fair quality in bulk at wineries, and 27½c per gallon in a jobbing way, San Francisco. Receipts of wine at San Francisco last week were 367,900 gallons, and for preceding week were 316,750 gallons. The ship Atlas, clearing for New York on May 27, carried 6370 barrels or about 325,000 gallons wine. The steamer City of Para, sailing May 25, carried 96,609 gallons and 16 cases, mostly for New York. The steamer City of Panama, sailing May 29, took 14,283 gallons and 24 cases, mostly for New York.

PROLIFIC BLACKBERRY.—Reedley Exponent: John Duff has a vine of the Mammoth blackberry variety growing on his place, near town, which is a most prolific bearer, having at the present time over a hundred pounds of berries on its branches. The vine when planted, a year ago last March was not over 6 inches tall.

Cures Curbs, Ringbones and Cramps.

Baldwin, Kans., Nov. 3, 1904.

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Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904	Same time last year.
Flour, ¼ sks.....	74,921	4,199,719	5,028,389
Wheat, ctls.....	44,425	2,652,170	2,293,442
Barley, ctls.....	18,523	3,340,170	5,344,668
Oats, ctls.....	909	813,076	847,370
Corn, ctls.....	9,039	263,748	153,922
Rye, ctls.....	347	54,637	58,049
Beans, sks.....	3,105	628,039	706,614
Potatoes, sks.....	17,413	1,209,428	1,270,895
Onions, sks.....	4,358	137,322	152,095
Hay, tons.....	2,775	166,817	163,555
Wool, bales.....	1,376	75,253	67,142
Hops, bales.....	133	39,316	29,487

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk.....	58,408	2,757,636	3,092,072
Wheat, ctls.....	749	806,245	1,001,983
Barley, ctls.....	7,889	1,876,290	4,183,280
Oats, ctls.....	309	80,373	24,123
Corn, ctls.....	10,874	147,307	18,075
Beans, sks.....	371	49,553	39,652
Hay, bales.....	2,508	230,553	224,610
Wool, lbs.....	.....	884,219	2,518,642
Hops, lbs.....	415	387,602	591,848
Honey, cases.....	2	2,773	4,841
Potatoes, pkgs.....	746	108,203	106,268

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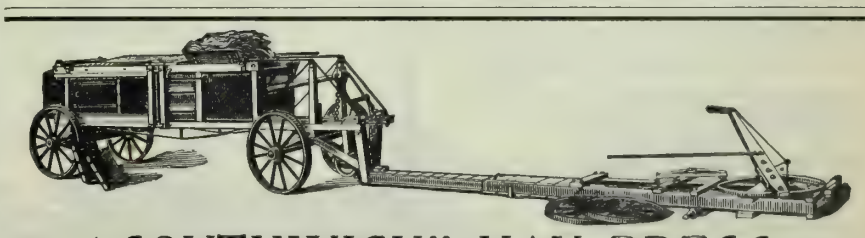
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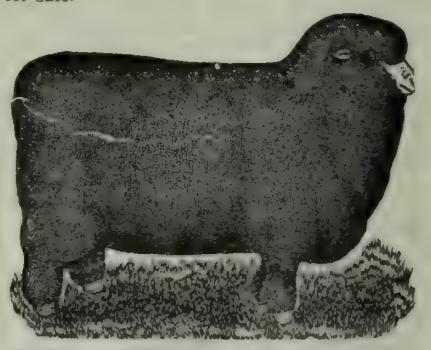
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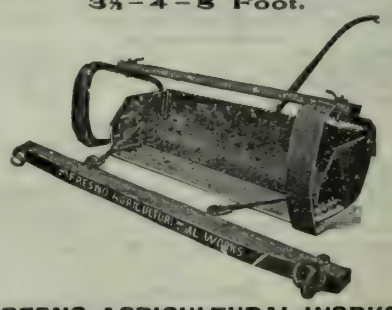
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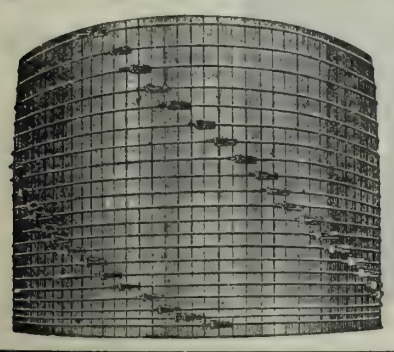
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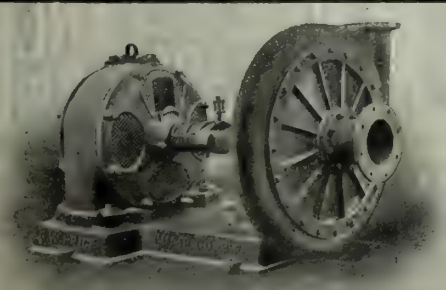
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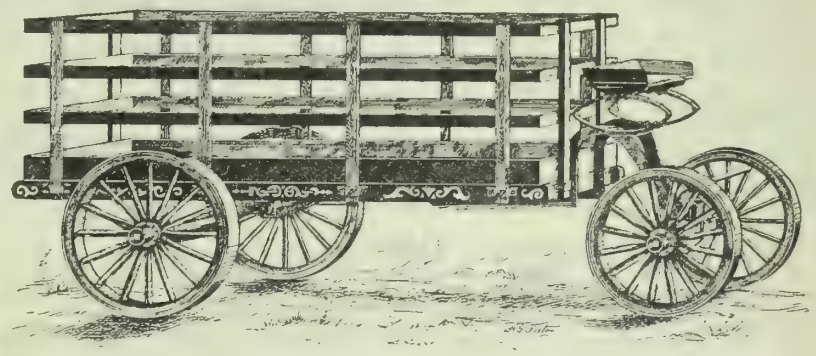
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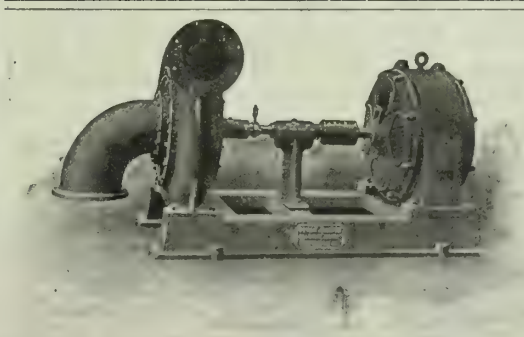
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List of Granges and Officers.

ALHAMBRA, 230.—M., H. C. Raap; L., James Kelly; Sec., Mrs. L. T. Raap. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Martinez.

AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE, 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d & 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D Magnon.

At San Jose Grange.

San Jose Grange held its regular weekly meeting May 27th. Immediately following the opening exercises, which were conducted by Past Master J. O. Cook, came the installation of the newly elected Master, State Past Master G. W. Worthen as installing officer, with Miss Alice Phelps as assistant, inducted into the office of Master Hugh Leigh, who served efficiently in that position five years ago.

D. T. Bateman, from the committee on education, announced that an effort is being made to have Luther Burbank address the County Teachers' Institute next November, and asked the Grange to unite with the county board in extending the invitation to Mr. Burbank.

The programme of the day was in charge of the legislative committee. "What legislation does the Grange want and what means shall it use to obtain it?" was the topic of F. H. Babb's remarks. He held that the success of the National Grange in having its legislation favorably acted on by Congress is due to the fact that it knows what it wants and keeps steadily at its work. In the East the Grange is a numerous and influential body. In California it represents not only its membership, but to a great extent the agricultural and horticultural interests of the State and wields an influence greater than that of mere numbers. He advised the Order to decide on what it wanted and then not to be too modest in pressing its wants on Boards of Supervisors or Legislatures.

Judge B. G. Hurlburt explained at some length the methods by which an aspirant to hold office may obtain the nomination of his party and the possible influence that may elect him.

Mrs. A. R. Woodhams spoke of the need of the ballot in the hands of women as a means of purifying politics, and as a measure of justice. She held that men and women should be equal before the law, and to be equal must have an equal voice in making law.

This week a class of five candidates will be initiated in the first and second degrees. And the discussion of the resolution relative to the co-operative marketing of fruit, introduced by S. P. Sanders, will be the special order of business.

Grange Notes.

Master of the State Grange H. C. Raap of Martinez was the orator of the day at the exercises in connection with the annual picnic of the Bennett Valley Grange held last week. The picnic was largely attended and a merry time was had. There were musical and literary features. The State Master's address was heard with much attention, and he was heartily thanked for his presence and remarks. At noon a basket picnic was enjoyed and an excellent spread it was. The afternoon was devoted to dancing and games, in which old and young participated.

Members of Progressive Grange of Healdsburg enjoyed a picnic last Saturday at the McClish grounds, on Felter creek. There was a large attendance, a bountiful supply of good things, and everybody enjoyed the day. J. D. Silvia, Master of the Grange, arranged a short programme after dinner.

THE Empire Cream Separator Co., of Watsessing, N. Y., has bought two suits against the De Laval Separator Co., and the De Laval Dairy Supply Co., Jersey City, N. J., claiming damages for alleged libel. The Empire Company made a specialty of cream extracting machinery, designed upon what is known to the trade as the "bowl" principle, while the defendant companies utilize a "disc" pattern. It is set forth in the declaration that June 30 last the defendant companies issued circular letters to the trade, their superintendents, representatives and agents generally, to the effect that the Empire Company had decided to abandon the manufacture of the bowl pattern machines, as they were antiquated and not as good as the disc machines of the defendant corporations. The latter further declared, it is alleged, that the Empire Company was stocked with 5000 of the old machines, which it was anxious to sell to the trade, and that it had experienced a poor season. For such alleged issuance the Empire Company sues for damages for libel and slander. Henning G. Taube, of Montclair, N. J., is president of the Empire Company, and Ernest E. Bell, of Glen Ridge, N. J., general manager.

Jan. 21, 1886.

Dr S. A. Tuttle, Dear Sir.—This is to certify that I have used your Elixir and find it all you recommend it. I have tried it for colic and bone spavins and can fully recommend it to all, and would not be without it. D H. POWERS,
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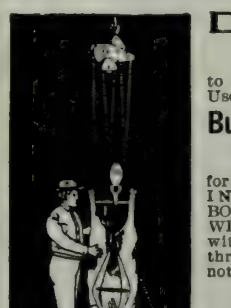
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THE VETERINARIAN.

Traveling Permits for Scabby Sheep.

TO THE EDITOR:—Is there any part of the law whereby any State or county official can issue traveling permits to drive sheep infected with scab over certain county roads named therein?—READER, Dixon.

REPLY BY THE STATE VETERINARIAN.

TO THE EDITOR:—Section 5 of the Sheep Inspection Law is as follows:

Any person, company, association, or corporation desiring to move his or their sheep which are not sound or are infected or affected by scab or any infectious or contagious disease shall obtain from a deputy inspector a traveling permit. Such permit shall only be granted for the purpose of moving said sheep to some place where they may be dipped for said disease, or on account of shortage of feed, and then by such route as the deputy sheep inspector may designate.

The only State or county officials who can legally issue these traveling permits are the State Sheep Inspector and the deputy State sheep inspectors who receive their appointments directly from the different county boards of supervisors.

CHARLES KEANE,
Sacramento. State Veterinarian.

Controlling Grubs in Cattle.

Mr. N. S. Mayo of the Kansas Experiment Station gives the following account: Warbles or grubs are the larval form of the ox bot fly or heel fly. The grubs or warbles are noticed as little lumps or bunches just beneath the skin of the back. Directly over each warble there is a small pore or opening in the skin through which the grub breathes.

The adult heel fly or warble fly is a little larger than the common house fly. In the latter part of the summer she deposits her eggs upon the hair of cattle in the region of the heels. The presence of the flies among cattle causes much annoyance. The animal licks the part and the larvæ are taken into the mouth. From the throat or gullet the small larvæ bore their way through the tissues until they locate beneath the skin of the back, where they increase in size quite rapidly, so that the lumps are large enough to be noticed by the latter part of December or early January. In February or March these larvæ or grubs work their way out through the small hole in the skin, fall to the ground, burrow into dirt or litter, pupate, and some weeks later transform into adult flies.

As the adult flies do not travel far, a cattle owner can free his herd pretty well from these pests by treating them at this season of the year. If other cattle in the immediate vicinty are affected, the adult flies will travel far enough to infest neighboring cattle. All cattle owners should unite to destroy this pest.

Treatment should begin as soon as the warbles are noticed upon the animals' backs. Most of the warbles or grubs can be destroyed by putting turpentine, kerosene, crude petroleum, or mercurial ointment in or on the opening through the skin directly over the warble. If the opening is very small, it should be enlarged by using a smooth, pointed stick. A machinist's oil can having a slender nozzle furnishes an excellent method of applying the medicine. By running the cattle through a chute they can be treated quite rapidly. They should be examined in about ten days, and any that escape the first treatment should be destroyed by a second; or, better, squeezed out and crushed; or they can be crushed beneath the skin by pinching the lump, or killed by inserting a pointed wire or large, blunt-pointed needle. It is important that any grubs squeezed out or escaping naturally should be destroyed or they will transform into adult flies.

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Canistota, So. Dak., April 26, 1902.
The Lawrence-Williams Co., Cleveland, O.:
For some years I have been introducing your GOMBAULT'S CAUSTIC BALSAM, and I put it out on a guarantee to cure. I have had to back up against a veterinary here, that condemns it, for no other reason than that it has taken trade away from him, and he don't like it. What can you let me have two dozen bottles for?
McKINNON & CO.

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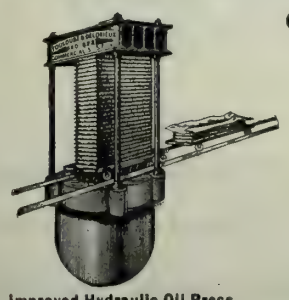
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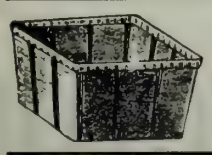
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This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular trips.

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Eibe.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,
Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California

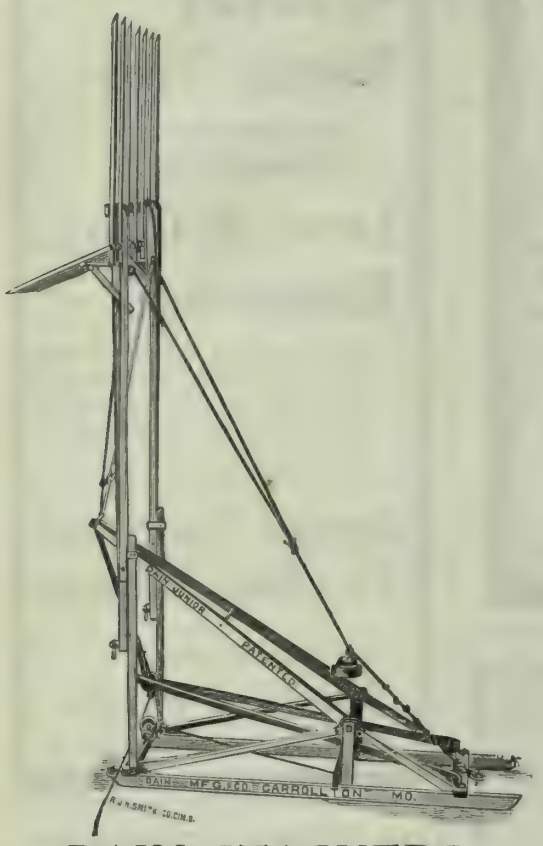
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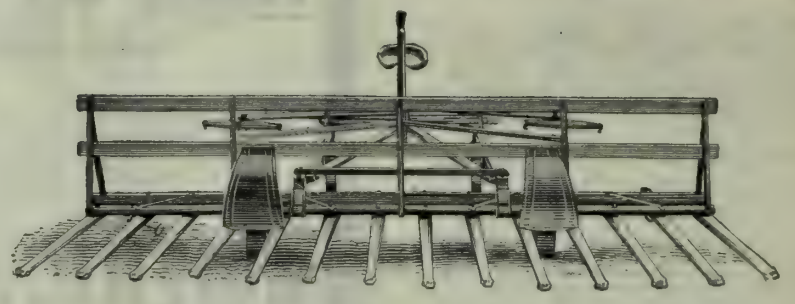


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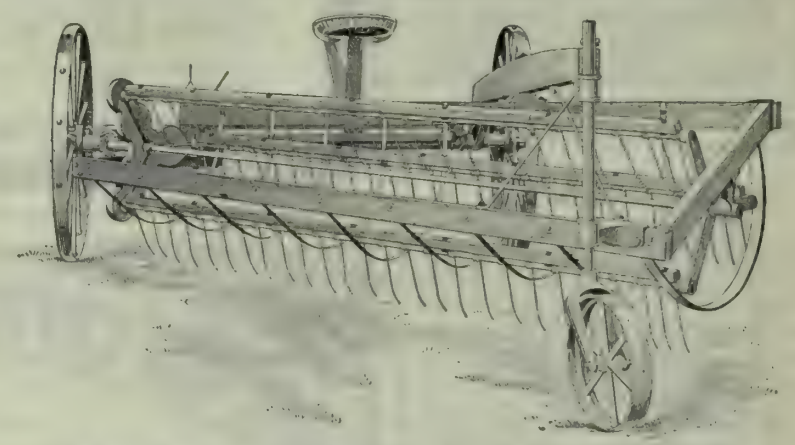
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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXIX. No. 23. SAN FRANCISCO, SATURDAY, JUNE 10, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Scenes in Farther Alaska.

Although it is now the time to go to Alaska, and the disposition to summer cruise in Alaskan waters is greater than usual this year, we can take readers on this page on an Alaska jaunt to which the common run of Alaska tourists do not attain. For it is nearer-Alaska with its coast so set with densely forested islands as to appear almost like inland seas which is most popular with summer voyagers, and it is the inlets with their glaciers over which they most loudly exclaim. Far beyond all this is the region in which this week's pictures were taken. They represent life on the Yukon which, as is common with rivers in frigid countries, serves as an iceway in winter and a waterway in summer. Our views this week show rather primitive modes of using this highway. At another time we may show more dignified means of travel.

Since the discovery of the rich gold deposits in the Yukon basin numerous towns have come into existence and many thousands of people now winter in the Far North, but little removed from the Arctic circle. Dawson, Forty-Mile, Eagle, Rampart and Fairbanks are all within 100



Preparing to Go Down the River on Breaking Up of the Ice on the Yukon.



Prospectors Rafting Down the Yukon.

to 200 miles of the circle, and Fort Yukon is directly on the Arctic circle, at the most northerly point reached by the Yukon river. From there it flows southwesterly into Bering sea. Although the Yukon rises in British territory, only a few tributary streams heading in Alaska, the greater part of the length of the river flows through Alaska—the stream crossing the international boundary at Eagle City. The Tanana also heads in the Yukon Territory, but the greater part of it is in United States possessions.

Mining outside for placer gold is mostly carried on during the months from June to October. Those wintering in the country have, of course, the advantage of an early start, as transportation is not open until after mining operations are possible in the interior. During winter the miners work in their claims, drifting out the frozen ground by the use of "steam points." These are pipes drawn to a point and perforated with small holes. The pipes are driven into the gravel and steam turned in from a boiler located on the surface. Many schemes for thawing the frozen ground have been tried, but the steam point has proven the most economical and satisfactory. The gravel, softened by the steam, is sent to the surface and dumped. In this manner large piles of gold-bearing gravel are accumulated, to be washed the following summer when water is available.

The accompanying engravings will give a good idea of the life of a miner on the rivers. During winter the streams are frozen solidly to a considerable depth and some of them to the bottom. Traveling on the ice by means of sleds drawn by horses or dogs is the usual method of moving about and is the least expensive means of transporting freight of any description. As summer ap-



Rafting on the Yukon.



Traveling on the Ice on the Yukon.

proaches, the snows soften, the ice becomes slushy and for a time travel is practically at a standstill. Soon, however, the warmth of the sun, which increases with the growing length of the days, causes the streams to flow. The ice breaks up and floats away. Often at some point, usually at a bend in the river, the ice forms a jam and the floating ice from up the river, continuing to come down, increases the obstruction rapidly, causing the water to back up over a considerable area, until it either overflows the barrier of ice and carries it away or cuts for itself a new channel across the low flats adjacent to the river. This is reported to have happened within a month near the town of Fairbanks. When the rivers are free from ice the prospectors can go up or down the stream in boats or canoes, and those desiring to go up stream often improvise a vessel in the form of a small raft.

One of the engravings shows two men sailing in their ship of fortune. Another gives a view of several larger rafts and scows, some of which are covered with tents or tarpaulins as a protection against the changeable weather. They are waiting for a clear river. A fourth view shows one of the larger scows.

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E. J. WICKSON ..... Horticultural Editor

SAN FRANCISCO, JUNE 10, 1905.

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The Week.

Weather conditions have improved somewhat and crops are going ahead rather better; but there is still chance for a little more heat and clearer skies. As previously noted, this year's atmospheric conditions have brought an amount of plant diseases, which people are apt to consider new and mysterious because they do not usually have such wide range and effectiveness as they have shown this year. Many instances come to our notice where grain has failed without the manifestation of pest or disease which could explain the condition. Such areas are, fortunately, rather restricted. Such troubles must usually be charged up to the exceptional temperature and moisture conditions. Again, there has been an unusual prevalence of certain well known fungus diseases, like the potato blight and onion mildew, and some alarm has been occasioned thereby. This is due to the activity of old diseases, which find these conditions enabled them to expand their field and to do injury which is usually checked by the earlier occurrence of the dry heat of the California springtime. This occurrence is not necessarily continuous—an occasional occurrence holds the disease in check, but this year there has been practically an absence of such restrictive influences, and plants have suffered by the hunger and thirst of their enemies, which proceeded unchecked along that way. It is fortunate that things are mending and that we may expect soon to return to normal California growing conditions, which are unsurpassed and which, perhaps, we do not adequately appreciate until they are partially denied us, as they have been this year.

Spot wheat is dull and little new arriving. Prices here are unchanged, and though Chicago futures are lower they are unchanged here; although on the whole December prices here range a little higher than a week ago. The wheat on hand is only one-third of the supply a year ago, and estimates of current local consumption are about 50,000 tons above the annual product. One charter has been drawn at 22s 6d for wheat and 23s 9d for barley, or 1s 3d less for a direct port. Barley is demoralized, old being used up and new being hammered down. Spot barley is 5c per cental higher than barley to arrive a week hence. Minor cereals are unchanged and stocks light. Choice beans are firm, especially Limas; the visible stocks of beans are one-third less than last year. Bran and middlings are firmly held in few hands. Choice old hay is doing fairly, but new is not wanted; some new rusty oat hay and new alfalfa bring ridiculously low bids. Strictly choice beef is firm; other meats are quiet. Choice creamery butter is higher. Southern California buyers are chasing favorite Northern creameries, and the Government is a buyer also. Cheese is firm. Eggs are higher for fancy, which are scarce, and this helps common local and Eastern to sell, but the supplies are large. Poultry has a wider range according to quality, large fat stock being in request. Potatoes are fluctuating, a few choice new going well, but the market is unsettled. New red onions are low and a few new yellow are now arriving. Tomatoes and peppers are in from Florida and Mississippi, which seems unnecessary. Oranges are unchanged and not brisk except for good shipping stock. Lemons and limes are unchanged. Pomeloes are selling better. Fresh deciduous fruits have rather an easy tone. Dried fruit is firm for all spot stock, and little here. Futures on Santa Clara prunes are firmly held on a 3c basis, but buyers are still shy. There is nothing doing in nuts. Little honey is arriving and the demand is also light, though selling fairly locally. Hops are firmly held, but quotations are nominal. Oregon wool has sold here at 30c.

Mr. G. Harold Powell, who, as special expert of the pomological division of the United States Department of Agriculture, has done such good work in southern California during the past winter, is now in the central part of the State to see what opportunity there is for work with the handling of deciduous fruits. Mr. Powell's specialty is fruit during storage and shipment, and how much he found to be done in improvement of the handling of citrus fruits has already been fully set forth in our columns. Unquestionably there is quite as much to bring to light in the way of mistakes and carelessness in the handling of fresh deciduous fruits, and we hope that the growers and shippers of such fruits may co-operate with Mr. Powell and enable him to pursue his investigations and tests under favoring conditions. Mr. Powell is much interested in California affairs and wishes to assist in their promotion and development.

The Portland Fair opened well on June 1 and now only needs millions of visitors to make it a great success. The display is said to be very fine and well advanced. The Exposition was electrically opened from Washington by the President, and the significance of it well pointed out by the remarks he made when he pressed the button in the White House. He said:

The Exposition marks the feat of exploration a century ago which was the first step in the expansion of this republic westward across the continent, the most important step in changing a straggling line of seaboard commonwealths into a mighty continental nation. It was one of the epochs of our history, and it is eminently fitting that it should be commemorated by the Exposition at Portland as is now being done. As the civilized world has spread, the nations of the world have come ever closer and closer together. When the civilized world was grouped around the Mediterranean, when the Atlantic was an unknown sea, the peoples around the Mediterranean were sundered from one another by time, by manners, by habits of thought, to a degree which we can now only imperfectly appreciate. I, here in Washington, start the Exposition in Portland, and the same forces that have knit together the different sections of this great country, that have rendered it impossible to keep our nation more emphatically one in spirit, now that it has spread over the continent, than was the case when it occupied but a small fraction of the continent, will, I firmly believe, bring the nations of the earth ever closer together and enable us all to work together in peace and harmony for the future of mankind.

This is a noble sentiment and puts the western edge of the country in proper relation to the rest of it. However, it seems to need something stronger than electricity to bring peace on the east coast of Asia. Still, it is wise to hold high anticipations and to hope.

Speaking about electricity, and especially about its uses in agriculture, to which we alluded last week, one cannot forget how subtle a fluid we have to deal with and to be proportionally careful. The Santa Rosa Democrat shows how small a matter may turn the powerful agency astray. There was trouble on the power line, and the local manager and his companion set about an investigation as to the cause of the trouble. He noticed a single straw had lodged against a wire on the pole, and looking across to the other side of the electric railroad track he saw a small bunch of hay lodged on top of a smaller pole which carries the railroad telephone. He also noticed that for a distance hay had been blown against the fence. He concluded from these and other circumstances that in the early morning a sudden small sized whirlwind had caught up some of the loose hay in the field and carried some of it onto the potential line, and as the hay was damp with the early morning dew when it touched the wires it caused a short circuit and burned off the wires. Straws show the way the wind blows and the electricity goes, so be very careful.

QUERIES AND REPLIES.

Pear Blight.

To the Editor:—Please give me information that will of use in relation to the pear blight. I have about 400 trees and all are more or less affected. I am keeping the blight cut off and burn it. I am about to experiment with coarsely ground salt; will dig a trench about 18 inches from the tree to the roots and place salt in the trench, covering the same up with earth, and will watch for results. I will put more salt on those badly affected, keeping tag on the amount of salt in each case. I think I will use only fifty pounds at first as an experiment. Some say that it does not do any good to cut off the blight. What is the history? Does the tree always die? A friend of mine says that he intends to take bluestone and lye, dip nails into it and drive them into the trees. I will let you know the result of my experiment.—Grower, Vacaville.

So far as we know there is no promising treatment for pear blight except cutting out the blighted portion below the visible injury. This should be done as soon as the blight is seen, and should be continued during the latter part of the summer, so that the blight may not be allowed to hold over on the tree and furnish spores for the propagation of the disease early the following season. All the treatments like those you describe—treating the roots or making injections into the substances of the tree—are irrational, from what we know of the nature of the disease and of the behavior of the materials which are introduced into the trunks of trees. This method has been advocated for decades for all the ills to which fruit trees are heir, and there never has been a case in which good results could be clearly attributed to the treatment. For this reason we have no faith in it whatever. There may be a cure by natural processes in spite of the treatment, but nothing can be clearly attributed to the agency used. Of course, anything whatever that you can apply to the roots or inflict upon the trunk which will check the growth of the tree will, to that extent, discourage the blight because the blight can only develop rapidly upon fairly active tissue; but this fact does not properly support the direct remedial effect of the application. We shall be glad indeed to hear of any results that you may attain by the treatment which you propose, and to have your exposition thereof.

Trees in Bad Places.

To the Editor:—I have a few trees for our own use and two of my finest apricot trees have played out almost at once. They are five years old, bore nicely last year, have grown nicely this year with a small crop, when a short time since the leaves on one tree began wilting and falling. On examination we noticed wax curling out at different places. Digging to discover the cause we found the inner bark brown and sour. The trees next to them and in the same row look healthy and are doing nicely. The trees affected occupy a little the lowest ground and the wash from the barn yard settled about them to some extent. Also we had a nice almond tree three years old leaved out and blossomed then withered and died. I dug about it, but can discover no cause. Also I have one orange tree which grew nicely last year. We put sacks about it for the winter as usual, driving in stakes to keep sacks away from tree. The frost got it all the same, but it did not start out this spring as usual. It stands on the warm side of the barn where considerable lye from the stable drains. Will that kill it? If so, I had better remove two others near by. What kind of trees should I plant in such places? How shall I kill green lice on trees?—Amateur, Alameda county.

Your apricot trees were undoubtedly killed by the

water standing about their roots during the past winter, and this trouble comes under the common name of "sour sap." The reason for the name you discovered by your investigation of the bark. It is probable that the almond tree perished for the same reason, although the result may not be so manifest. It is probable that you are right as to the loss of the orange tree. No fruit tree can stand too strong leaching from a stable, and unless you can change the course of the drainage the other trees should be removed. We cannot name any kind of fruit tree which would endure a very strong application of that kind. You can readily kill green lice by spraying with kerosene emulsion, or any of the insecticides which are sold in the stores. Even strong soap suds are usually affected. You need, however, a proper spraying apparatus to throw the insecticide against the under side of the leaves where the lice generally congregate.

Sweet Clover in Alfalfa.

TO THE EDITOR:—Please tell me the names of the two plants enclosed. The alfalfa growers here say one is alfalfa, the other is "run out alfalfa." These are taken from young plants, seed sown on summer fallow this March.—NEW SETTLER, Modesto.

One plant is alfalfa; the other is the so-called "sweet clover," an entirely different plant—in fact, a Melilotus, instead of Medicago, which is the genus to which alfalfa belongs. This Melilotus is a weed in the alfalfa field and very undesirable, because stock do not take very kindly to it, and because its smell in alfalfa hay is very undesirable. It grows quite freely, however, in alfalfa fields and alfalfa seed is often foul with the seed of the Melilotus. This undoubtedly explains the way in which it was introduced to your fields. We are not surprised that the farmers call it "run out" alfalfa, because sweet clover probably has the ability to chase out the superior plant and to take its place. It ought to be pulled out and prevented from spreading itself by seed.

Bees and Railway Racket.

TO THE EDITOR:—Can you tell me if the presence of a railroad track and the consequent jarring caused by the passage of some six daily trains will in any way disturb bees? Should I place their hives 100 feet from the track? Will the bees cross the track for feeding purposes?—KNICKERBOCKER, San Francisco.

Your questions can only be answered from actual experience; but we may hazard the opinion that the bees will not be disturbed in any way. If anyone knows otherwise, let him speak.

For Vine Eaters.

TO THE EDITOR:—I planted Zinfandel grapes last season and they grew well, but small insects ate the leaves. I took one pound of bluestone, two pounds lime, and mixed them in twelve and one-half gallons of water. When the dew was off I sprinkled it on the leaves. It answers well, but do you know anything better?—B. B., Santa Cruz.

The bluestone and lime is a good fungicide, but you can kill insects better by adding an ounce of Paris green to the mixture which you give.

Stock for Almonds.

TO THE EDITOR:—What is the best root to use in grafting or budding the almond to resist sour sap and black knot?—O. C., Capay.

The plum root is best to resist the troubles you mention, but we would rather hunt a free, well drained loam which favors an almond root, than to attempt to have the almond tree on the plum root.

How Walnuts Grow.

TO THE EDITOR:—I am sending you by mail to-day one sprouted English walnut. The nut was put in warm water May 15th, put in the soil May 16th and taken from the soil May 29th. By observing carefully, you will see that the root is coming from the sharp point, and, if you will cut the nut open, you will see the germ or future tree, not yet started, but ready to start in the opposite direction. which, of course, will be upward, and will not have to turn, as you stated.—J. LUTHER BOWERS, Monticello.

We are sorry that this specimen did not arrive in time to be noted in connection with Mr. Gillet's reply to Mr. Bowers in last week's PACIFIC RURAL PRESS. The specimen is as Mr. Bowers describes, except that the shoot will appear at the same place where the root is now appearing, viz., at the sharp point of the nut. We hope Mr. Bowers will continue to notice the growth of his walnuts and tell us if he finds anything coming out at the base or blunt end of any of them.

We Do Not Doubt It.

TO THE EDITOR:—I notice in your last issue, in answer to inquiry how to kill Bermuda grass, that you treat my experience presumably more or less as a joke, because you write "that the method is out of the question, except on a small piece of land on which cost is of little moment." Now let me tell you I can show you and describe you private places at or near Sacramento, Visalia, San Rafael, Oakland, where I have treated such lawns as I have described in your last issue, especially one place in Sacramento, which had a frontage of 100 feet by a depth of 160 feet. This lawn is sown to blue grass, and is a beauty, and there are roses and other shrubs planted on a terrace 5 feet high. It may be that it looks comical in seeing a landscape gardener near Folsom, but I am no stranger in San Francisco or the whole State, neither do I need to be ashamed to sign my full address, having plenty proofs for my accomplishments from here and abroad, but I will refrain from now on to answer any such inquiries.—CHAS. J. SCHMID, Practical Landscape Gardener, Folsom.

We do not doubt your statements nor did we intend to treat them as any sort of a joke. We were talking from the point of view of a field and to treat land by the acre according to your plan would cost several times as much as agricultural land is worth. We do not question your success nor its applicability to house lawns where people are willing to pay for it, and to such persons your statements will be very valuable. We do not think it is at all comical to have landscape gardeners near Folsom. We wish they could be found in every township in the State. As for refraining from giving your views upon what you see in the PACIFIC RURAL PRESS, please don't do it, and the madder you get at your treatment the more we wish to hear from you.

Erinose and Blackberry Rust.

TO THE EDITOR:—I should be obliged if you could let me know what is the matter with the enclosed Muscat leaves. Last summer the leaves on some of the vines, and sometimes on only one cane of a vine, would drop off—and they were always covered with burnt-up looking spots. The vines affected appear to be in patches, and no doubt the disease spreads from a center; it is only last year that I noticed it. My Mammoth blackberry vines have a very brown look—the wood looks scorched and the foliage a rusty color, and the berries shrivel. Is it rust, and, if so, what is the remedy?—VINEYARDIST, Dinuba.

The spotted appearance of the vine leaves is the disease known as erinose, and it is caused by a mite which burrows in the leaf tissue. You cannot do anything effective now, but you should spray the stumps thoroughly with kerosene emulsion next spring just before the growth starts, for the pests winter in the old bark. Your blackberries have the fungous disease, known as rust, and you should spray with Bordeaux mixture, as prescribed for rose rust in our last issue.

Eradicating Bermuda Grass.

TO THE EDITOR:—The PACIFIC RURAL PRESS of May 27 has inquiry of J. R. C., "How to Kill Bermuda Grass," and the answer was of such nature as to convey the idea of its being quite impossible. I will give your readers some of my experience with Bermuda or Sandwich Island grass. It is not impossible, nor even difficult, to get rid of it where it grows naturally in the open field or lot. It is a somewhat tedious process, but it is quick work and no need to cart off 1 or 2 feet of soil and put "medicine" on the subsoil.

If it is a small patch or a good sized one on a city lot, turn over the sod with a spade in convenient pieces to handle. Let it lie and dry out enough to shake the dirt from the roots and cart them off to a convenient place where they can dry more and then be burned. Then rake the ground carefully and gather up all stray roots and pieces of roots, and the job is more than half done. Keep the ground open, so that the balance of root fragments will continue to grow, and go over the ground carefully and root out all subsequent growths. A year or less is time enough to get the last root. The process can be hastened by irrigation, so that no time be lost in the final growth and digging out, and when, after a few weeks, no more roots grow in the irrigated soil, you can safely conclude that it is all disposed of. Of course, to rid a large area it would be more practical to turn the sod with a plow.

But there is another phase of the question that can not be disposed of. If the grass has a covert under trees or walls or under house foundations or street gutters or paved sidewalks or any other hiding place where you can not get the whole root, your only alternative is not to fret about what you can't possibly help, for all that can be done is to fight it as fast as it comes into the open by digging it out, so that it shall not spread to adjacent territory.—L. H. GARFIELD, Santa Barbara.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 5, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cool and partly cloudy weather prevailed during the week, with light rain in some sections Friday. Severe thunderstorms occurred in Colusa, Shasta and Trinity counties, accompanied by heavy rain in places. Hay was somewhat damaged by rain, but other crops were benefited. A heavy crop of hay is being harvested. Grain is rapidly maturing and harvest will commence soon. Grasshoppers are causing some damage in places to grain, alfalfa and trees. Hops are making satisfactory progress. Green feed is abundant and cattle are doing well. An unknown disease is seriously affecting the potato and onion crops along the Sacramento river. Deciduous fruits are ripening rapidly and shipments have commenced; prospects are good for fair crops of most varieties. Grapes, olives and citrus fruits are in excellent condition.

Coast and Bay Sections.

Clear and cool weather prevailed during the week, with light fogs in the coast districts. Strong northerly winds caused slight damage in a few places. Hay harvest is progressing rapidly and baling has commenced; the yield is heavy and the quality very good in most places. Grain is in excellent condition and maturing rapidly; harvest has commenced on some of the early grain and will soon become general. The outlook is good for large crops of wheat, barley and oats in most sections. Corn is backward. Hops made some improvement during the week and are in fair condition. Green feed is still plentiful and stock are doing well. There is no improvement in the cherry crop, though some varieties are yielding better than expected. Other deciduous fruits are ripening slowly, but good crops are expected. Grapes are in excellent condition.

San Joaquin Valley.

The weather was partly cloudy and cool during the past week, which was beneficial to most crops. Grain harvest has commenced in all sections; the wheat crop will be light in most places, but good crops of barley and oats will be harvested. Haying is progressing rapidly and a large crop of good quality will be harvested. The second crop of alfalfa is quite heavy. Large shipments of early peaches and apricots are being made and some drying has commenced. Good crops of loganberries and dewberries are being gathered. Early apples are ripening fast and will be a good crop. The grape crop is promising except the seedless varieties. A large number of young orange trees has been planted this year in the Porterville district. The orange crop is promising. Feed is plentiful and stock are in good condition.

Southern California.

The weather during the week was generally clear and cool, but favorable for all crops. Most of the summer crops are somewhat backward, owing to continued cool weather. Hay harvesting and baling are progressing rapidly and the crop is very good in most places. Grain continues in excellent condition; the crop in some sections will be the largest for several years. Beans and beets are looking well and give promise of large yields. Corn, potatoes and vegetables are in good condition. Berries of all kinds are unusually abundant and of superior quality. Deciduous fruits and walnuts are doing well, but are somewhat backward. The season's orange crop is nearly gathered and shipments are falling off. New oranges and lemons are in excellent condition. Grapes give indications of a large yield.

EUREKA SUMMARY.—Weather cool. Condition of crops excellent, but made slow growth. Some early oats cut and new hay will be on the market in a few days. Rain needed in the interior.

LOS ANGELES SUMMARY.—Continued cool and cloudy weather is not conducive to good growth. Haying is about finished in some places and baling has begun. Deciduous fruit crop reports are not favorable except apricots. Some beans required replanting.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 7, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.04	32 76	65 16	45 79	62	50
Red Bluff	.11	33.74	31.52	25 92	86	52
Sacramento	.00	21.98	16 87	19 89	82	48
San Francisco	.00	23 45	20 59	22 57	68	50
Fresno	.00	12 08	8 04	8.72	88	52
Independence	.00	3 99	2.59	3 73	82	46
San Luis Obispo	.00	23.53	16 99	20.09	72	42
Los Angeles	.00	19 49	8 72	16.44	78	54
San Diego	.00	14 32	4.40	8 19	78	54
Yuma	.00	8 69	1 00	2 89	100	64

THE GARDEN.

Hints on Glazing Greenhouses.

There is a tendency to use more glass in California horticulture, and for this reason hints on glazing are becoming more interesting. An Oregon correspondent of the Rural New Yorker recently asked these questions:

What is the most improved method of glazing a greenhouse? I have heretofore let the glass lap about one-eighth of an inch, bedding the glass in putty and fastening with two-pointed tacks. In one season the tacks would work loose, and many of them came out so the wind would take the glass out and break it. Are any houses glazed with the glass placed end to end and fastened with strips nailed on the sash bar? I now have two houses side by side, each house 30x150 feet, and I want to put them up as one house 60x150 feet. Is it better to have a solid roof of glass, or make it in sections of 6 or 8 feet in width? Will the glass in a solid roof expand and shrink so as to loosen the glass more than if it were in sections?

The questions were submitted to a number of practical greenhouse builders and the following suggestive answers were made:

Lapped Glass Preferred.—The method most widely used in glazing greenhouses is that now used by this correspondent, namely, that of lapping the glass from one-eighth to one-quarter of an inch, bedding in good putty and fastening down with brads or double-pointed tacks. The loosening of the tacks may be due to not having driven them deep enough, or else is caused by the kind of wood used for strips; for example, cypress may not hold the tacks quite as well as yellow pine, though the former is perhaps the most popular wood for greenhouse building at the present time. But, if the double tacks are unsatisfactory, I would suggest the use of ordinary wire brads, ¾-inch No. 16 brads having given us good service for many years, though this system requires the use of four brads for each pane, instead of two double tacks. Some greenhouse men are enthusiastic on the subject of butted glass, and sash bars may be had with the separate strips for covering the glass; but unless the roof has quite a steep pitch, and the glass is carefully sorted and fitted, there is usually much more leakage from a butted roof than from one in which the glass is lapped, and, consequently, the believers in butted glass are in the minority among the florists of our country. In building a house 60 feet wide it would be much better to use what is commonly known as the "ridge-and-furrow system" than to build one large roof, dividing the roof into four sections, each of which would be 15 feet in width, and supporting the intervening gutters and also the ridge poles upon light iron posts. Wrought iron pipe, either 1½ or 2 inches in diameter, is a good material for the posts, being sufficiently strong and not casting much of a shadow over the growing crop.—W. H. Taplin, Pennsylvania.

How to Use the Brads.—To my knowledge there have been no great innovations in glazing greenhouses in recent years. Many greenhouse builders use the Peerless glazing point, which is a double-pointed carpet tack with a kink in it so as to fit the glass, whether the glass is single or double strength, there being two sizes made on that account. When ordering, state what kind is used. I can not understand, if the points are driven in sufficiently firm, how they could work loose in one season or more. It looks at this distance as though the lumber used for the sash bars was not sufficiently well seasoned, and in the natural process of drying the shrinkage caused the tacks to become loose. Many builders of greenhouses secure the sash bars (the lumber from which they have been made is either naturally well seasoned or is kiln-dried) often long before the building operations are commenced, and they are given two coats of paint, the first being made of the best white lead, not too thick, in which is mixed a dash of "metallic brown" to give a pinkish tint, and when this, the first coat, is thoroughly dry, one with more body to it is then given. The best putty made is none too good on which to embed glass for greenhouse glazing. A few years ago there were some complaints about the Peerless glazing points, because they rusted out too quickly; but now an improvement in that respect has been effected by making them of a non-rusting material, I understand. Many florists prefer to use zinc shoe brads, those known as "6–8 slim" being the most in use, though others prefer to use those known as "6–8 stout."

The first move in glazing is to drive the first brad in the wall plate perpendicularly, or nearly so, for the first pane of glass to rest upon. The next is to drive a brad on each side in the sash bars an inch or so from the lower end of the glass, then at the upper end of the glass, one on each side, an eighth of an inch below the edge; this will allow for a lap of an eighth of an inch—that is most in general use. It thus takes four brads to each separate piece of glass, excepting the first, which requires five. With a putty knife take off the putty flush with the glass; no putty as in olden times is used over the glass. As soon as possible after the roof is glazed, a good coat of paint is given, taking care to rub same in well to fillI up what few cracks in the putty there may be, and also that part of the sash bar exposed to the outside weather. The sash bar on the inside of the greenhouse is better painted with a portion of zinc, as being less affected by the discoloring mildew than it is if painted with only white lead and linseed oil. There are a number of commercial greenhouses glazed on what is known as the butted glass system, especially among florists in Canada; but wherever it has been tried around Philadelphia it has not proved to be as satisfactory as the "lap" plan. When the butted glass principle is used, glass that is as "broad as long" is most frequently used, as a better opportunity is thus given to make a more complete fit, as that is the secret in glazing to avoid "drip" as much as possible. Instead of the strips that are used to secure the glass in position being nailed, screws are used, preferably those with round heads.

Greenhouses have been built in the neighborhood of Philadelphia 56 feet wide—the sash bars are 32 feet long; but personally I would prefer them on what is called the "ridge-and-furrow" plan, or, as your reader says, "6 or 8 feet in width," with the gutters 7 or 8 feet high, as there would be naturally less strain on the lesser than on the larger roof, especially in windstorms. At some points on the Pacific slope what is known as the redwood lumber is in general use for all purposes, being very durable, and is very often used without any paint whatever. A first-class job of glazing greenhouses can not be made without at least three coats of paint.—Edwin Lonsdale, Pennsylvania.

SERICULTURE.

The Latest Silk Venture.

The hundreds of Californians who have undertaken silk growing during the last forty years will be interested in the experience and enthusiasm of the latest venturer, as told by an appreciative writer for the Sacramento Union. Some weeks ago the Union told the story of the beginning of an experiment in sericulture in this city by S. R. Bellany. At that time it was recited that he had brought out from Italy 20,000 silk worm eggs of the best known variety, with the idea of testing this climate for silk growing. The truth is that Mr. Bellany had very many more eggs than he supposed. It is probable that his order was filled with nearer 40,000 eggs than the smaller figure.

The Beginning of an Experiment.—At the time of the item referred to Mr. and Mrs. Bellany, in one small room in a modest cottage, had six trays of eggs, carefully disposed upon layers of mulberry leaves, and the hatching had just begun, with the thousands of diminutive worms just struggling into life and Mrs. Bellany diligently replacing the bored and eaten leaves with fresh ones, handling the little worms and the still unhatched eggs, mere black specks, with infinite patience and great care.

Strangest House in Sacramento.—Yesterday the cottage presented a strange appearance. No other house in all California was ever adorned, as is Bellany's simple home. It is not to be told where it is, since too many visitors might result in injury to the experiment. The worms, now 3 and 4 inches long, have simply taken possession. They have not only loaded the stacks of wheat straw with great white and yellow cocoons, and these bouquets fairly fill all the floor space in all the rooms of the cottage; they have not only filled all the willow twigs, which Bellany pere has been able to gather; they have not only loaded down great bales of the straw and dried foliage with cocoons, but they have festooned the doors and windows with them.

They Have Taken the House.—They have ascended the walls and woven their delicate work upon the papering; up and down every molding, along the edges of doors and windows, in the cracks of the walls, under and over the furniture, over and along the sashes, and even upon the wash boards and panels they have located and in regular order, as if a decorator of taste had done the work, they have hung their flossy globes and suspended their delicate tombs, within which they have buried themselves to continue their work until they die, and harden, and at last out of the ashes of death give forth new life in the form of the dusky moth that will come forth to lay more eggs, to develop more worms, to weave more cocoons, and so continue the process of silk growing.

"But," says Mr. Bellany, "I shall permit only just enough moths to develop and eat their way out to furnish me with eggs sufficient, for the eating out spoils the cocoon commercially." He will, therefore, by the devices known to sericulturists, stop the moth-developing process in time to save at least 25,000 of the cocoons.

Pleased With the Experiment.—He is greatly pleased with his experiment thus far, and it is to be seen in all stages of its progress except the hatching, for while he has a house full of cocoons, hanging in clusters, massed 2 feet deep in stacks of straw, and even invading the bedrooms of the house with their line upon line of graceful silken tracery, there are some thousands still of soft-tinted worms crawling upon beds of leaves, and which Mrs. Bellany is constantly engaged in changing to new feeding beds. "For these industrious fellows are voracious, and it seems scarcely possible to furnish them with food enough, for mulberry trees are scarce now in Sacramento. Years ago the berries fell so thick from the trees lining Sacramento streets that the walks were all awash with their juicy fluid, and so the authorities ordered the trees felled, and but a few now remain. The trouble was," says Mr. Bellany, "that Sacramento should have planted the seedless white variety, which sheds no berry and supplies the worm with just the food he wants.

No Loss of Worms Here.—"I am wonderfully pleased with this experiment here," said Mr. Bellany. "In Italy they think they do well if they lose only 33% of worms, but, do you know, I have not lost one except by accident, stepping on some of the fellows which have taken this little house by storm, so that we have not a 2-foot walk width in the place, as you see. I am gratified, because even with a cold spring it has now been demonstrated that this climate is ideal for sericulture. When they tried it in the Santa Clara valley it was too near salt water. The worm will not flourish as it should except in a dry climate, unaffected by saline atmospheres, so to speak. The humidity must be slight and the place of growth not near large bodies of salt water.

An Exhibit for Portland.—"I am going to take to Portland an exhibit of this success, prosecuted, as you see, under conditions as to house not at all what they should be, and with proper food scarce for my industrious friends. Did anyone ever see finer, larger, stouter cocoons? Well, I never did here or in Europe. I tell you, sir, I believe this is just the place for sericulture. And Europe will take the cocoons if we want to sell them over there. There is little danger of overproduction, for silk will be worn, and if it is cheapened a bit, well, so much the better for the user of it. I tell you that in Italy the growing of silk is an industry that gives thousands of families employment and gives the women and children easy, light work, and it teaches patience also.

Only Experimental.—"Of course this is only an experiment, but I believe it is of value. I hear that thousands of dollars have been spent in California with no good result of much volume in culture of silk, but maybe we can learn and succeed. I see no reason why we should not do as well here as they do anywhere with these crawling fellows. Just witness what they have done for me, with no proper place fixed for them."

HORTICULTURE.

An Advocate of the Sugar Prune.

To the Editor:—As you say in "Queries and Replies" of May 27th issue, it is only fair that the "other side" of the Sugar prune should be heard from.

True, the tree "overbears"—so do peach and apricot "overbear"—unless pruned and thinned. Yet we growers do not reject those fruits—rather do we like them the better for being able to regulate the crop and produce the sizes we desire by putting on a reasonable amount of work. Perhaps if some of those who complain of the Sugar prune overbearing would put a little time and work even on their French prunes we might have fewer 120's, etc., to spoil the markets for those who grow fancy fruit.

"It will not make a good union on peach." True again—but what of it? Sugar prune makes a perfect union on apricot and myrobolan and a fair one on almond. There is no need for putting it on peach in the nursery, and as for grafting old peach trees—we all know the best way in the long run to graft an old peach tree is with "an axe underground," and then replant with the desired variety.

The wood of the Sugar prune is amply strong to bear up under any load that it is able to fill up with sugar, unless the trees have been allowed to run away with themselves before beginning to bear through lack of care. Those whose Sugar prune trees "will not carry the load" should try thinning—it will pay.

As to "quality." I can only say that the Sugar prune has with us a finer flavor than any French prune, and we do not find the coarseness that some complain of. Used as stewed prunes, or simply steamed and used as a confection without cooking, we find them universally praised, both for flavor and texture.

Personally, however, I really hope that other districts in the State cannot grow them satisfactorily, as there will thus be less danger of glutting the market with a grade of fancy fruit such as cannot be produced on the old French prune tree.

Harold O. H. Shelley.

Cupertino, Santa Clara county.

Another Friend of the Sugar Prune.

To the Editor:—For the benefit of those who are in doubt as to whether the Sugar prune is a profitable fruit to grow, and who have read the several fierce attacks on that splendid but much abused prune, will you kindly publish the following?

Four years ago the writer grafted a block of four-year-old French prune trees (Petite) to Sugar.

Last year the fruit was thinned out, as it had set too heavy on many of the trees, at a cost of $3 per dry ton. Four-fifths of the cured fruit graded thirty-five to the pound. This year the fruit has been thinned again and promises as good results as last year. The trees are as strong and hold up as great a weight as the French variety and are not as bushy, therefore do not require so much time spent in pruning. Sugar unites well with apricot, almond and plum stock, but, so far as the writer has observed, does not take well on peach. If allowed to overbear, much of the fruit will be small, deficient in sugar, and will shrink badly in drying; but if tree and crop receive proper attention, then the Sugar prune is easily the most profitable as well as the most reliable prune grown in this locality.

Morgan Hill. J. T. Green.

FORESTRY.

Employment on National Forest Reserves.

The Bureau of Forestry has published a circular giving information regarding employment on the National forest reserves. This circular explains how appointments to the Forest Service on the reserves are made, states the salaries of its members, and indicates the knowledge and experience required of rangers and supervisors, and the duties each must perform. The future organization will include Forest Supervisors at $1800 to $2500 a year, Deputy Forest Supervisors at $1500 to $1700, Forest Rangers at $1200 to $1400, Deputy Forest Rangers at $1000 to $1100, and Assistant Forest Rangers at $800 to $900.

The law requires that every applicant for a position in the Forest Service pass a Civil Service examination. Legal residence in the State or Territory in which employment is desired is generally necessary, since only where examinations fail to secure thoroughly satisfactory men are vacancies filled by the examination of applicants from other States. Appointments of Supervisors are made, so far as practicable, by promotion of competent rangers or forest assistants.

To be eligible as Forest Ranger the applicant must be physically sound, accustomed to outdoor work, and know how to take care of himself and his horse in regions remote from settlement and supplies. He must know something of surveying, estimating and scaling timber, lumbering and the livestock business. Some of the reserves require a specialist in one or more of these lines of work. The applicant must be thoroughly familiar with the region in which he seeks employment. The entire time of Rangers is to be given to the service. Rangers, under the direction of the Forest Supervisor, patrol to prevent fire and trespass; estimate, survey, and mark timber, and supervise its cutting; issue mining permits, build cabins and trails, enforce grazing restrictions; investigate claims, and make arrests for violation of reserve laws.

Forest Supervisors must have all the qualifications of Rangers, combined with superior business and administrative ability. They deal with the public in all matters connected with the sale of timber, the control of grazing, the issuing of permits, and the application of all regulations for the use and occupancy of forest reserves. Knowledge of technical forestry is desirable, but not essential.

Work upon the forest reserves offers good and increasing opportunity for men of the right sort. Requests for information about the times and places when and where examinations will be held should be addressed to the Civil Service Commission, Washington, D. C.

Timber on the Forest Reserves to Be Sold.

Information comes from Washington that the mature timber on the National forest reserves is to be offered for sale. The announcement is in line with the declared purpose of the Department of Agriculture to develop the National forest reserves by use. The restriction formerly laid upon the export of timber from the States in which the forest reserves were located has been removed, and the law now places no limitation on the shipment of timber grown on any forest reserve except those in the State of Idaho and the Black Hills Reserve in South Dakota. The effect of this change in the law, and the declared policy of the Department of Agriculture, is that the timber on the reserves may now be cut and disposed of to the highest bidder. On many of the reserves there are great quantities of mature timber, and on some of them the facilities for getting it out at a reasonable cost are excellent. The Forest Service, which has charge of the administration of the reserves, is anxious to begin the cutting of this mature timber as soon as possible, and it is prepared to consider offers from lumbermen who wish to undertake such operations.

It is perhaps well to call attention to the fact that this announcement does not mean that the forest reserves are going to be devastated under authority of the Government. On the contrary, the distinct and definite purpose of the Forest Service is to improve the reserves by utilizing the material that is now fit for lumber. In doing so, it will also provide for the reproduction of the forest and the restocking of those areas upon which forest conditions are defective. Work of this kind has been successfully carried on for some years in the Black Hills Forest Reserve, and has been begun with the greatest promise of success on the lands of the Chippewa Indians, in northern Minnesota, from which it is proposed to create another National reserve.

The public in general, and the lumbermen in particular, will be interested to know that in this last case the restrictions imposed by the Forester have in no way hampered the lumbering operations. Timber sold at public sale, with full knowledge of these restrictions, brought higher prices than were ever obtained for white and Norway pine in the same region, and the slash has been burned and got out of the way at a cost of about 12 cents per thousand feet board measure.

The supervisor of each forest reserve is authorized to receive applications for the right to cut timber; intending purchasers should communicate with him, not with the Department at Washington.

Planting Forest Trees on Hillsides.

To the Editor:—I wish to say to your "Reader" from Simi Valley, Ventura county, who is asking for information about forest planting on the hillsides in Ventura county, in last week's Pacific Rural Press, that nearly all the foothills and hillside land in Ventura and Santa Barbara counties can easily be planted to timber if the work is done right and in the right time of the year, but the land owner must plant such kind of trees as the land is suitable for producing. Redwood and pines would probably grow in a few moist localities, if small plants were set out in the fall. But the California black walnut would be the cheapest and easiest to start a forest on the hillside. The nuts should be planted in November. I aim to put the nuts in a sprouting pit for a month before planting. I have trees of Eastern black walnuts and the California black walnuts planted last fall that are now from 2 to 3 feet high. California white oak would grow, but the acorns should be planted as soon as they can be gathered from the trees. Mountain maple would also grow from seeds. The Arizona ash would also grow, if 1-year-old trees were planted in December or January.

Eucalyptus plants can be set out during the rainy season on the hillsides without plowing the land or cultivating it for a number of years, but it is necessary to keep the grass or weeds down. The trees will, of course, not grow so fast, but the expense will not be so high, but stock should not be allowed to pasture on the land after the trees or seeds have been planted. A. J. Drothzen.

Covina, Cal.

THE STABLE.

The Popular Horse.

Mr. Francis L. Hodgkins, the well-known horse breeder, gives the California Cultivator his idea of the horse which is in constant demand and how to get such an animal. His points are as follows:

1. For ordinary farm use the average farmer likes a 1300-pound horse. This sized horse is large enough to put into the plow and do a good day's work—he makes a good size for orchard cultivating, or can be hitched on to the mower and hay wagon and give good satisfaction, and is also not too large to trot into town with a small load and make a quick trip. A good horse of this size can cover a good deal more ground than a large draft horse and is a very convenient weight for general ranch work.

2. There are comparatively few full-blooded mares of either the Belgian or Percheron breed in California, and the male offspring of these mares are generally used for stud purposes. The average weight of a Percheron stallion in good flesh is from 1800 to 2000 pounds, and of a Belgian stallion from 2000 to 2300 pounds. The Belgian breed is by far the larger in most cases.

3. The cross of a good Percheron stallion on our ordinary farm mares makes an exceedingly fine work horse. The Percheron stallion is without exception the best known stallion of the draft breeds in America to-day. You have only to look at the geldings used by all the large circuses to get an idea of how this breed crosses with our mares. Look at most of the brewery teams, Wells-Fargo teams, fire engine horses, in fact anywhere a medium sized large work horse (say from 1600 to 1800 pounds) is needed to do quick and fairly heavy work, and you will find that most all of these horses show very distinctly the Percheron type. I do not say that the Belgian, Shire, Clyde, or any of the other draft breeds, do not produce as good geldings as the Percheron, but the trouble seems to be in getting mares of sufficient draft to cross with them to get the desired result. In my mind the Percheron stallion crosses better with the average California work mare than any of the other draft breeds. I might say here that the Percheron team of geldings shown at the St. Louis and Chicago horse shows took the first prize at both places.

4. I think that there is a good field for the production of full-blooded horses of the draft breeds in California. The farmer who raises a few colts every year has to have stallions to breed his mares to, and the day when anything but a full-blooded sire will do is past. Consequently, now they are buying imported stallions from the old countries (France, England, Germany and Belgium). With our climatic conditions I cannot see why the stock raisers of California cannot produce as good an animal as can be produced anywhere in the world.

Of course, to do this the mares have first to be found, and a really first-class brood mare (full-blooded) costs very nearly as much as a stallion. Providing that we have the mares, and the stallion, we can surely raise as good, if not better, stock than can be raised anywhere in the world, and with our climate they ought to mature very much quicker.

5. There is no doubt in my mind that there will be as great a demand for good, sound draft geldings ten years from now as there is at the present time. California is noticeably very shy on good brood mares, and we have first to raise the mares before we can expect to be able to raise the strictly first-class gelding that will command the top price. Not very long ago I was talking to one of the biggest buyers of draft horses in California, and he told me that next year he expected to have to go to the Chicago market for his draft geldings, as he could not find enough in this State. The horse that will command the highest price in the future is the large, sound truck horse, and the man that has this kind for sale need never be scared of not getting a good large price for them, and I do not think that there is any danger of the horse market being overrun with this kind of a horse. In the dullest of horse times a good large draft gelding always brought a good figure.

ARBORICULTURE.

Handling the Pepper Tree.

Mr. J. H. Reed of Riverside, one of the most observant and incisive horticulturists of the State, writes for the Enterprise some suggestions which will be widely helpful:

We find many unshapely trees on our streets. The disfigurement may be avoided by proper treatment when young. The pepper is a tractable tree, and behaves well if it has a little intelligent attention in its first shaping. Some of the "go-as-you-please" old pepper trees—one on Fourteenth street at head of Main, for instance—the real tree lover would not care to have different. But we would not want long streets lined with such.

As a rule, on our streets, the pepper should have an upright growth of from 6 to 8 feet, free of branches, with clean, shapely stem to commence with, and a little timely attention will easily secure this. Immediately after planting the young thing, it should be carefully tied to a suitable stake, and even quite crooked stems can be brought into shape by special care with soft twine. If left to itself the pepper is inclined to head out too low down. To prevent this the terminal shoot should be protected in its effort to make an upright and strong growth; often an ambitious side bud will push out, use up the sap before it reaches this upright shoot, and form the main stem, with an unseemly angle; or if several of these strong shoots are allowed to grow near together a head will be formed too low. In either case this may easily be prevented by carefully cutting out the strong side growth before permanent mischief is done. Should anything happen to the terminal shoot the next nearest upright branch should be made to take its place, and by a little careful force with the tie strings the stems may be kept erect and fairly straight. After reaching the proper height, branches to form the permanent top should be taken from those starting at an angle of 45° or such a matter, and those at right angles with trunk, and those growing downward should be removed. In this way a deep opening under the future top is secured.

In taking off the side branches all foliage should be left on the trunk. These leaves are as necessary to proper growth as the roots. If the young tree is inclined to grow too slim for its height this may be remedied by allowing a few small side branches to remain till they begin to get woody, when they should be carefully cut out with a sharp knife. With care in this cutting, knotty excrescences seen on so many of our street trees may be avoided.

Next in importance to getting the street trees planted is the early shaping that will add most to the pleasure. Most of our outdoor adornment of streets or premises will be comparatively temporary, while the right tree with proper early training will abide to be a comfort and pleasure indefinitely.

Agricultural Review.

Butte.

Moravian Barley Promises Well.—Chico Record: At the invitation of Homer Craig of San Francisco, who has taken a deep interest in the bettering of the crops of cereals grown by California farmers, a Record representative yesterday visited the farm of H. C. Compton, and an inspection of a field of Moravian barley was made. Accompanying the above were P. H. Dorsett of the National Plant Introduction Garden and Thomas Murphy. Mr. Craig is an enthusiast on the possibilities of this variety of barley and the Compton field of about seventy acres seems to bear out his claims, and the claims of the Agricultural Department, that this variety will before long supersede the Chevalier variety of barley.

Disease of Bees.—Chico special to Sacramento Bee: J. M. Rankin, a specialist in bee culture, has arrived here to take up his branch of work at the Plant Introduction Garden at this place. One of the principal features of this experimentation will be to determine the character of diseases which are decimating the apiaries of this State, and which to a degree are special to this coast. In addition to this, he will give the entire subject of bee culture a determination, and likely will be engaged in his work in this State for several years.

Strawberries on Young Vines.—Gridley Herald: Eli Sala of Gridley set out a strawberry patch this spring, and took good care of the plants, watering them as they needed it and cultivating them with care. They are now loaded with berries, one specimen measuring 5½ inches in circumference the largest way, and 4½ the other. It is a Canadian variety of berry, and is delicious of flavor and symmetrical in shape.

Fresno.

Raisin Prices.—The directors of the new California Raisin Co. have issued a circular to the members of the company and all growers not to sell raisins of the coming crop for 3c a pound. The argument is put forth that the sound holdover raisins are now worth 3½c per pound, and will bring 4c if the new company gets control of the crop. The address also advises that any price now established by the outside growers will be the high-water mark in prices in 1905, and an appeal is made to growers not to contract to any packers for 3c a pound until they are fully posted on conditions.

Glenn.

Wants Season Shortened.—Willows Journal: Game Warden Slye is circulating a petition asking the supervisors to shorten the season during which doves may be killed. The State law allows the killing of doves from July 1 to February 15. Mr. Slye asks the board to make the open season in this county from August 1 to February 15. He contends that there are many young birds in the nests on July 1, while many sportsmen contend that there are just as many young birds on August 1, as the doves raise several broods during the summer. The petition is being signed by many citizens, while some who claim to know all about the birds refuse to sign.

Humboldt.

Rust in Oats.—Arcata Union: Crops on Arcata bottom are looking well, with the exception of the winter sowed oats, which is showing bad signs of rust. The rust is also observed on the barley, but is worst on the oats, and some of the crops are badly affected. The peas and beets are doing well, and it is yet too early to tell whether the worms are going to do much damage or not. It has been suggested that the matter of the rust be submitted to the University professors of the State experiment station when they come to Arcata, and see if some preventive cannot be found. The rust will mean the loss of many thousands of dollars to the farmers of this section this year.

Kings.

Loganberries.—Lemoore Leader, June 3: S. J. Wilson, who has a half acre of loganberries at the old Sammy Kidd ranch, says there is big money in loganberries. From this half acre he has already sold $160 worth of fruit from the vines and says he will harvest $140 worth more, or $300 from the half acre in one year, or $600 per acre.

Los Angeles.

Walnut Crop.—Monrovia Messenger, June 2: Throughout El Monte and adjoining districts in the walnut belt the groves are in splendid condition and the yield will probably be greater then ever before, because the orchards are older and a large acreage is just coming into bearing; but, in proportion to bearing surface, the yield will be less than in some previous years. Three or four weeks ago there was every promise of the largest crop, even in proportion to bearing surface, ever known; since then "dropping" has materially reduced the prospective crop, though the trees are still well laden. Experienced orchardists generally attribute the dropping to late rains and cold, foggy nights; a few, however, are inclined to the belief that cultural conditions cause it. None of the groves in the district have ever been fertilized, though some careful experiments with different kinds of fertilizer are being conducted this season. The dropping of the nuts has now ceased, and no further diminution of the crop from this cause is expected.

Mendocino.

Hay Crop Will Be Short.—Ukiah Dispatch-Democrat: The long continued cold weather has kept the hop vines back so that they are about a month behind ordinary year crops at this date. The growers are somewhat gloomy over the outlook, as not even a half crop can be secured this year. The increased acreage, however, will help swell the crop some. Before last year there were a little over 1000 acres of hops in the county, but about 580 or 600 acres of new hops have been put in since.

Modoc.

Machine-Sheared Sheep.—A dispatch says mutton buyers are refusing in Modoc county and southern Oregon to pay as much for machine-sheared sheep as for those that are sheared by hand, and in some instances decline to purchase the first kind at all. The reason for this is that the machine shears the animal so closely that the sun burns the flesh and renders it unpalatable. From one-half to one and a half pound more wool can be obtained per sheep by the machines than in the old-time way of clipping the wool with shears. This increase is more than enough to pay for the shearing. At Warner canyon, near Lake View, a steam-shearing plant is operated. A fleece can be taken from a sheep in two minutes and the wool is clipped off as closely as though with a razor.

Nevada.

Offers Prize for Raising Sugar Beets.—Boca special to Sacramento Bee: W. S. Lewis, general manager for the Boca & Loyalton Railroad, announces that he will give a prize to the rancher who, during this season, raises the most sugar beets containing the greatest percentage of sugar. The winner will be determined by the State Experimental Station experts at Berkeley. Mr. Lewis is doing all within his power to encourage the raising of sugar beets in Sierra valley.

Sacramento.

New Disease Attacks Potatoes.—A press telegram from Sacramento says growers of potatoes and onions throughout that region are confronted with a prospect of loss more serious than has ever been experienced. An unknown disease has attacked every potato and onion patch in the rich river district, and growers are rushing to early market such of their crops as have not yet been affected.

San Joaquin.

Too Wet to Harvest Grain.—Lodi Sentinel, June 3: Two or three harvesters started out on the West Side this week, but the grain was found so damp that it was decided in most cases to postpone harvesting until there was some warm weather. The recent rains and damp mornings have kept the wheat and barley heads moist and it was next to impossible to shell the grain properly. With a few days of warm weather, harvesting will be commenced with a rush throughout the San Joaquin valley, as there is a large acreage to be cut before the rains set in.

Cool Weather Benefits Hay.—The cool weather has proved of great benefit to the hay crop as well as to the grain. Had there been a warm spell following the last rain, says a Stockton paper, some of the cut hay would have been damaged to a considerable extent, but the mornings have been cool and just damp enough to keep the feed from being mildewed and it is believed that very little of it will be injured by the late rain. Quite an acreage had been cut on the West Side and on the uplands and the farmers have been closely following the prevailing conditions, but the danger point has been passed. The crop is in fine shape and the yield will be large. Contracts for hay are being made in all sections of the valley and very good prices are being paid.

Shasta.

Straw in His Flesh.—Dana special to Sacramento Bee: H. F. Crum of Dana, early in February, accidentally ran the prong of a hayfork into his right hand at the base of the thumb. The wound healed up quickly, the only remembrance being left in a little lump in the palm of the hand. This caused absolutely no inconvenience until about two weeks ago when the hand became swollen and had to be lanced. Then it was that the piece of straw was discovered and removed. The wound caused by the straw was a great deal more troublesome than that made by the hayfork.

Solano.

Abandon Harvesters for Headers and Threshers.—Rio Vista special to Sacramento Bee: Not less than a half-dozen farmers in this vicinity, who are conducting operations in the adobe section, have determined to abandon the use of harvesters this season and will revert to the use of headers and stationary threshers. It is claimed that the harvesters are the cause of much land becoming foul. With the stationary threshing outfit the bad seed can be destroyed, but with the harvesters it is scattered over the ground. The straw can also be better handled and would pay considerably toward the expense of harvesting.

Sonoma.

Famous Vineyard Sold.—Cloverdale Reveille: The famous Madrone vineyard, owned by Mrs. Phœbe Hearst, located in the Sonoma valley, between Eldridge and Sonoma, has been purchased by the California Wine Association. The sale of the property has been pending for some time. The vineyard consists of over 1200 acres. The ranch has a historic significance, as it was under the spreading trees on the ranch that Generals Joe Hooker, Grant, Sherman and others had their camp one time in the old days of the Mexican war trouble. The ranch is a splendid piece of property.

Success of Poultry Business.—Healdsburg Enterprise: W. I. Beeson of this city claims to have all records broken for the number of eggs laid per hen. From 500 hens he secured an average of 206 eggs per hen for the year. He has been interested in the business for some time and says his smallest net income was $1.50 per hen annually, while he has made as high as $2.50 annually off each hen. Mr. Beeson raises cabbage, kale and rape for green food and keeps only the Brown Leghorn variety of poultry. He now has 500 grown hens and 1000 young chicks, and is furnishing many eggs to Petaluma chicken men for setting this year, as it is said that they have been unable with the White Leghorns to get an average of 200 eggs per hen annually.

Sutter.

English Walnuts Do Well.—Yuba City Farmer: There are many English walnut trees in the yards around this town that are loaded each year with fine nuts and produce as high as $10 or more to the tree. Some few small groves have been planted and are now coming into bearing, showing the good profits to be derived from walnut culture. We understand that several growers are getting ready to plant the walnut quite extensively this coming season. One man will plant about eighty acres now in grape vines, putting in the trees among the vines about 40 or 50 feet apart. Another grower will set out his forty-acre vineyard. In about eight years the vines will be pulled out and the land devoted entirely to the walnuts. They will plant the black walnuts and then bud or graft to the English stock.

Tehama.

Early Apricots.—Corning Observer, June 1: E. C. Sherwood of Henleyville has the earliest apricots of the season in Tehama county. The first were marketed Saturday. Mr. Sherwood has three acres in early apricots, the Newcastle being the first to ripen. They are selling readily for 3 cents per pound. The gentleman says the trees this year will produce an average of $1.50 each, and have brought as high as $3 each.

Tulare.

English Walnuts Pay.—News: The English walnut trees on a thirteen-acre grove in this vicinity were planted 40 feet apart and in many places the branches of one row overlap those of the next. The trunk of one tree is 28 inches in diameter 4 feet from the ground. The yield of nuts from one tree last season was 400 pounds, or $40 worth.

Important Sale of Tulare Lake Land.—Register: A sale involving 18,712 acres of land a few miles north of Lemoore that was formerly covered by the waters of Tulare lake took place in Hanford last Saturday. The sale was made by Referee W. F. Hall in a friendly partition suit in which E. O. Miller of Visalia was the plaintiff and George D. Bates and the heirs of Samuel Davis, deceased, defendants. About 4000 acres of this land are in alfalfa. The last bid made by the Davis estate was $275,000, but Mr. Miller raised it $5000, making the total bid $280,000, and the land was knocked down to him. About $50,000 worth of improvements have been put on the land, and it is quite probable that it will be subdivided and sold.

Big Price For a Colt.—Visalia Delta: George Kirkman of Exter sold his two-year-old colt for $13,000 to a Los Angeles race horse man. The gentleman from Los Angeles, whose name could not be learned, was at Tulare and saw the horse work out on the track. The colt made a record of 2:19, and practically not in condition at this time of the year. The capitalist was so impressed with the colt that he made the offer for him delivered at Los Angeles for $13,000 and Mr. Kirkman accepted it. The colt is sired by Stoneway, formerly owned by R. O. Newman. The colt was on the track at Hanford, San Jose and Tulare last fall and for a colt made a phenomenal record. Horsemen claim that he will be a world beater. It is also said that Mr. Kirkman was offered $500 for the suckling colt, which is a brother to the colt he sold.

Ventura.

Beet Yield.—Oxnard Courier, June 2: From an interview with one of the field men of the sugar company, whose jurisdiction extends pretty much all over the county, the information is derived that the prospect of a good crop is the very best now that it has been at any time this year. Some weeks ago there was a small scare about the army worm, and a little later about the cut worm, doing damage both to beets and beans, but both of these ravagers have disappeared now and there is nothing to prevent a big harvest. The beet crop will exceed 14,000 acres, of which there is probably not 250 acres but what is exceptionally good. The worms did a little damage at first, but when the warmer weather commenced they stopped work and the damaged plants soon regained their thrift. Some of the beets are already large enough to harvest. One man reports that his workmen told him that his beets in a certain field would weigh three and one-half pounds apiece. This the owner rather scouts, as that would bring the crop of that field up to over forty tons per acre; but he says he thinks the yield will go above twenty-five tons, which is extra good for that kind of land. It is the same with nearly all of the fields — big beets, which look as though they contained plenty of sugar.

Yuba.

Currants and Raisins in Pound Boxes. — Marysville special to Sacramento Bee: An innovation to be introduced by a horticulturist of this section this summer is that of packing in one-pound cartons, sealed, labeled, and ready for the market, his crop of raisins and currants. Ben G. Campbell, an enterprising grower, who for several years has been doing his own packing in the regulation wooden boxes, has determined to try the carton as a means of marketing his products this season. He expects to get enough help from among the young people residing in the neighborhood of his vineyard to complete the packing in good time. He will put the goods out under a private brand.

Horse Owners! Use

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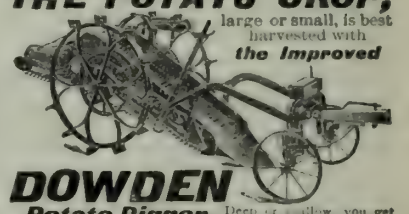
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We will sell you a Sharples Tubular, guaranteed to make enough more butter than the other from the same milk to pay 25 per cent yearly dividend on the whole cost of the machine. You test them side by side.



Pierpont Morgan is hunting a place to put money at 6 per cent: here is a guaranteed 25 per cent to you. While this dividend pays your bills the Tubular makes your life more pleasant by pleasing your wife. A waist low milk vat saves your back. Simple bowl—easy to wash—the only one that is so. Automatic oiling; the only one that has. Easier to turn than others and safer. Catalog A-131 explains better

Sharples Co. Chicago, Illinois — P. M. Sharples West Chester, Pa.

THE DAIRY.

The Dairy Bureau's Notice to Dairymen.

An act of the Legislature, approved March 20, 1905, more properly known as the "Sanitary Dairy Law," imposes certain requirements upon those who conduct dairies, creameries and other factories of dairy products, as well as stores and depots that make a specialty of selling dairy products, to which it is desired to call your special attention in order that you may not come into conflict with the officers of this Bureau, who are directed by the law to enforce its provisions. The law has been in effect since April 20, 1905. Copies of the complete law may be had by applying to the Bureau. For the sake of convenience, and in order that all may readily understand what is required under the law, the Dairy Bureau has prepared an abstract in the form of rules printed below with which dairymen, factory operators and dealers must comply in order not to violate the law. The constructions given are subject to any changes this Bureau may see fit to make in the future.

I.—RELATING TO DAIRIES AND MILK AND CREAM SELLERS.

(A) PRODUCTS.

1. No stale, unclean, unwholesome or impure milk, cream or other dairy product shall be offered for sale. This is taken to mean that rancid, decomposed, gassy, sour milk or cream, or if contaminated with dirt, such as manure and dust, or if contained in dirty receptacles, cannot be sold or offered for delivery to a factory without making the seller liable to prosecution.

2. It should be noted that the law also applies to other "articles produced from milk or cream." Hence any "unclean, unwholesome, stale or impure" butter, cheese or other product of milk is not permitted to be sold.

3. Milk drawn from cows within five days after, or fifteen days preceding, parturition (calving) may not be sold.

4. Milk or cream containing coloring matter or salicylic acid, formaldehyde, or other chemical added to keep it sweet may not be sold.

5. If milk or cream has added to it borax, boracic acid or other compound of boron, unless the name of the compound added is marked on the receptacle (that is, the can, bottle or whatever the receptacle may consist of), it cannot be offered for sale.

6. If gelatine or other thickening material is added to milk or cream, the name of the article added must be marked on the can, bottle or other receptacle containing it.

7. Packages of butter must not bear the word "pasteurize," or any of its derivatives, upon their labels, unless in making the butter, either the milk or cream has been heated to over 150° F.

8. Butter must not bear any label or other marking that misrepresents the name of the maker or the location where it was made.

(B) DAIRY AND SURROUNDINGS.

9. The water used by the cows and otherwise in connection with the dairy must not be stagnant or in any way liable to contamination from drainage, manure, urine or decaying animal or vegetable matter. It should be pumped from a deep well located outside of cow yards, or otherwise located so that it may not become contaminated, or from a flowing uncontaminated stream.

10. The yards in which cows are kept must be free from mud or dust.

11. Manure must not be permitted to accumulate in cow yards.

12. Stables must be clean and as free as possible from manure, urine and other dirt.

13. Stables must be whitewashed at least once in two years.

14. No decaying food or other decaying or foul material must be allowed in mangers and feed boxes.

15. Milking pails, coolers, strainers and cans and all articles coming in contact with milk must be thoroughly clean, including sterilizing or scalding with boiling water or steam under pressure.

16. The body, and especially the hands, of milkers and others coming in contact with milk must be clean.

17. The clothing of milkers and others coming in contact with milk must be clean.

II.—RELATING TO FACTORIES.

18. Creameries and other factories of dairy products will observe rules from Nos. 1 to 8, inclusive, relating to dairy products.

19. A creamery or other factory must not receive milk or cream showing excessive age, foreign odors, gas, or other evidence of advanced fermentation, nor must it receive the same in dirty cans.

20. Utensils used must be clean and sterilized with steam or boiling water.

21. Drainage system must be perfect so as to carry away all washings, waste milk, sewage and other dirt. The floor must be of such a nature that waste water and sewage cannot soak through it.

22. Cesspools, privy vaults, hog yards, slaughter houses, manure and other decaying animal or vegetable matter must be at sufficient distance from the factory to prevent odors from them reaching the factory.

23. Factories must be provided with good light and ventilation.

24. Factories must be free from insect life (flies, cockroaches, etc.).

25. The walls, floors, windows and machinery must be clean and free from milk or its products.

26. The bodies and clothes of persons employed in factories of dairy products must be clean.

III.—PENALTY.

The above rules cover the various details of the law, the violation of any one of which makes the responsible party liable to prosecution. The penalty upon conviction for violating any provisions of the law is a fine of not less than $10 nor more than $100, or by imprisonment for not less than 10 days nor more than 100 days.

WM. H. SAYLOR, Secretary.
San Francisco.

Weight of Butter Rolls.

TO THE EDITOR:—I have the letter of your subscriber submitting the following inquiry, to which I reply:

"Suppose the butter inspector should come around and find the 2-pound roll in the store unmarked, but weighing 2 pounds 2 ounces. Would the maker be under the displeasure of the law?"

The law relating to the matter of marking the weight on packages states that it is unlawful for any person to offer for sale or sell any butter in packages containing more than ½ pound and less than 6 pounds "unless the exact weight of such butter contained in such package or packages" * * * * "shall be printed or durably marked on the wrapper or other container." Hence it is plain that an instance like the above would be a violation of the law.

W. H. SAYLOR,
Secretary State Dairy Bureau of California.
95 Market street, San Francisco.

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THE U. S. CREAM SEPARATOR

takes out more cream than any other because of the unique construction of the bowl.

AN EXCLUSIVE FEATURE

Only two simple parts inside the bowl, one fits into the other, both fit into the steel bowl shell.

When put together there are three bowls in one.

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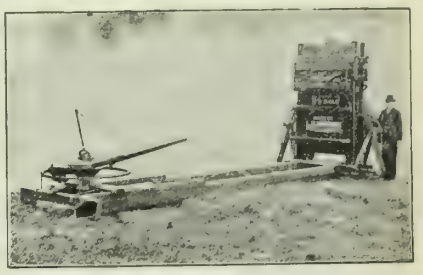
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The Home Circle.

At Least One Merit.

Dear friends, I am grateful and thank you sincerely
For all the kind sayings you've linked with my name;
They pass my deservings, but, frankly and clearly,
I'll say there's one virtue I feel I can claim—
I boast not of speeches, addresses, orations,
Of verses I published or essays I burned;
But proudly I'll state, in the face of the nations,
The books that I borrowed I always returned.

Some people there are who—with honest intention—
Your favorite volumes will take "as a loan;"
Perhaps the excuse for their final retention
Is that they regard them at last as their own.
If sometimes they think about due restoration,
The date for that function is ever adjourned,
And this is the sum of the whole situation—
The books that they borrow are never returned.

My faults have been many—I sadly admit it—
Deserving of censure to any amount;
Yet some folk may find when this scene I have quitted,
An item or two for a "contra" account;
Some lovable soul, touched with tender emotion,
May say that the loss of such men should be mourned,
And plead in defense of so startling a notion,
"The books that he borrowed he always returned."

—Westminster Gazette.

Cupid Defeated.

A half repentant bachelor, with quite a pile of rocks,
Dropped in one day, beside the way, and bought a pair of socks.
Arrived at home—romantic joy!—he wond'ringly drew out
A note deep hidden in the hose—from some fair hand, no doubt!

"I'm twenty years of age," it read, "and called a country belle.
With you I'd like to correspond—if you will never tell;
My object matrimony is, and yours, I hope the same;
If you'll address me, I'll respond." And then she wrote her name.

On fire with hope, the bachelor that very evening wrote,
And folded his epistle with a kiss inside the note.
Sly Cupid had him in his mesh—no very clever catch.
For, after all, quite foolish is a half repentant bach.

But oh, how sheepish did he feel, when from the fair unknown
This answer came, to quench his flame:
"An old maid I have grown!
Alas! 'twas forty years ago I planned that fond surprise,
Defeated by a heartless wretch who wouldn't advertise!"

—Printer's Ink.

An Armful of Joy.

Care is a feather and grief is a bubble—
Armful o' joy in a world full o' trouble!
Bright as if skies
Made the blue of his eyes,
With red lips that know not the meaning of sighs.

He weeps not the future—he knows not the past,
Yet he knows there are loving arms holding him fast;
His pillar of rest
Is a mother's dear breast,
And that's the sweet pillar he's loving the best!

Blue skies and balmiest blossoms above him—
Roses for playmates, and lilies to love him!
Walk, little feet,
In Life's rosiest street,
'Till with roses of heaven these earth roses meet!

—Atlanta Constitution.

The Peddler's Pack.

Every now and then the swinging signboard creaked and groaned as if it were determined to attract attention. And it was usually successful. In addition to the name of the inn, it bore a weather-worn representation of something that faintly resembled an overgrown soldier's knapsack.

"What does that signify?" inquired a traveler, glancing up at the picture.

"Ah! They don't carry things of that sort nowadays," answered the gray-haired landlord, pointing to a pile of commercial travelers' sample cases, "but the 'road boys' were not such aristocrats when I was younger. Then, they used 'packs' just like you see pictured up there. I was a bit hard on one of them long ago, and ever since I've tried to make up for it by treating them as well as I can. It was in one of their 'packs' that the biggest slice of luck I've ever known came to me." As he spoke he shuddered and sighed in a manner that betokened some mystery behind his words.

We were high up on the wagon road that runs through Serafina Pass, and the name of the little inn, "The Travelers' Refuge," was thoroughly appropriate, for not a bagman that went that way but was fain to rest for a space within its hospitable doors.

The landlord, it was clear, was most anxious to have an opportunity of unbosoming himself further, but he waited until his daughter, a buxom matron, had left the room. "Yes," he mused, half to himself, "I was a bit hard on one of 'em—there's no mistake about it. It ain't a pleasant story, but I like to tell it just to remind myself that the worst thing a man can have in this world is a hot, obstinate temper. You see, I came to this coast soon after the gold fever broke out, and settled down in the Josita Valley, below here, ranching. I was a widower even then, and brought with me from the States my only child—a daughter past seventeen.

"She was a pretty girl, if I do say it, and, being as good as pretty, you can imagine I was quite wrapped up in her. Of course I was anxious to keep her with me, and, if not that, at least I looked for her to do something better than fall in love with a peddler."

"And did she?"

"Yes; you see in those days the country was full of young fellows who had struck out for themselves, and were trying to get a start by carrying knick-knacks around from one mining camp to another. Some of them were lively chaps enough, and well educated: but I was fresh from the States, with all the eastern prejudices, and it almost drove me wild when Mary told me she wanted to marry a young fellow who brought his pack through our district a good deal oftener than the trade seemed to require. I was a hot-tempered fool in those days, so I stormed, threatened, locked Mary up for a week and sent word to her lover that I had loaded my gun for wild-cats and peddlers."

"What did Mary do?"

"You might have guessed it. One day when I came back from a cattle sale she was missing. I chased her a couple of days, but they had taken to the tall timber and it was of no use. After a while I got a letter, and I wrote back saying that I disowned her, and that he had better keep out of range of my rifle."

"What did you do then?"

"Suffered, mister—just suffered. I knew I was wrong, but I'd have died rather than give in. For three years I lived like a toad in a rock, hating the whole world. All the pleasure I had was in watching for peddlers. One evening, after a terrible rainstorm, one of the tribe came to my house and asked for shelter for the night. He was a thin, weak-looking fellow, with his face covered by a huge ragged beard. He carried on his back an enormously long and heavy pack, and seemed so exhausted, with his tramp through the mire, that I hadn't the heart to do more than order him off the place."

"That was pretty hard," said the listener.

"I suppose it was. The peddler seemed all broke up when he found I wouldn't even give him a bunch of straw in the stable, and no other house within twelve miles. Instead of complaining, however, he merely begged that I would let him leave his pack, which he said contained goods of value, under shelter from the rain. I finally consented to this. So, as I had sworn none of his trade should ever cross my threshold, I carried his pack inside, while its owner limped off to crawl under some bush or other."

"Didn't you feel mean?"

"Yes; mean and bitter at the same time, for something about the man reminded me of Mary's husband a little. However, I locked and barred all the doors and windows, as usual, for some road agents had been around those parts about that time, and had stood up and robbed several ranchers; and, as I told you, I was all alone. Somehow, I couldn't go to sleep when I went to bed. After tossing around for awhile, I got up and sat by the fire, brooding over my trouble, and trying not to think of the poor chap shivering out there in the cold and rain somewhere. I looked at his pack sitting up in the corner, and wondered what made it so long. As I watched it I fancied I saw it move."

"Saw it move?"

"Exactly. I wouldn't believe my eyes at first, but after watching intently for a while I distinctly saw the front of a hand pressed against the canvas from the inside. Like a flash, then, I understood the whole thing. The peddler was one of the road agents' gang, and knowing I had considerable money about the house, they had adopted this plan for smuggling one of their crew inside the house. After I had gone to sleep, the fellow inside could let in the rest and finish the job. I walked quietly across the room, took my gun from the antlers, knelt down a few feet from the pack, aimed square in the center and pulled the trigger."

"Go on," murmured the listener, with a shudder.

"But the gun didn't go off," continued the landlord, clearing his throat.

"The nipple was rusty and wouldn't work, so I laid down the rifle and got an axe from the kitchen. It had been newly ground that day, and, when I lifted it over my head, I counted upon cleaving that pack, robber and all, clear to the floor. Just as I raised the axe and braced myself for the blow I—saw a ghost."

"A ghost?"

"Yes, sir. The pack opened, and I saw sticking out of its top the curly yellow head, blue eyes and rosy cheeks of my Mary when she was a little tot of four. The shock staggered me so that I sank on my knees. I wiped my eyes, and wondered if I had gone crazy. I was almost certain of it when the ghost stretched out a pair of chubby white arms and said, 'Deevnin', drandpa!'"

"Ah," said the guest, with a relieved sigh, "I begin to see. And what did you do then?"

"I don't exactly know," said the landlord softly; "but if there is anything that will bend a stubborn neck quicker than the arms of a little child, I'd like to know what it is. I put the tired little prisoner down by the fire, opened the door, and held out my arms."

"And the mother—"

"Yes," nodded the landlord, "they were both there; and, mister, I guess that's the end of my story," and the old man wiped his eyes.

"You must excuse me," he said weakly, "but that was a wet evening, and somehow I haven't got quite dry since."—Grand Magazine.

Wild Flowers in the Home.

Not every one has a flower garden, but every one who spends even a part of the summer in the country has the freedom of the roadsides, pastures, meadow and woods; the wild gardens which belong to every man and no man, where every one is free to gather, and no one to forbid. Of course it is by courtesy and custom that this freedom extends to the fields and woods, and perhaps the unacknowledged obligation enhances the privilege of leaving the long, narrow roadside flower beds, and looking for rarer and more effective things along fences and hedges, and in shadowed and solitary places.

If one has acquired the habit of wild-flower gathering, and the knowledge of what to gather and how to bring her gleanings safely home, and the still further knowledge of the best decorative effect to be gotten from them, she has reached a possibility of great satisfaction and every-day happiness.—Candace Wheeler.

A Good Farmer.

One day in the summer of 1857 Abraham Lincoln was sitting in his office when he was visited by one of his neighbors, an excellent farmer, but one inclined to increase the size of his crops even after harvesting. He had given on this particular morning a skillfully padded account of the hay he had put in.

"I've been cutting hay, too," remarked Mr. Lincoln.

"Why, Abe, are you farming?"

"Yes."

"What you raise?"

"Just hay."

"Good crop this year?"

"Excellent."

"How many tons?"

"Well, I don't know just how many tons, Simpson, but my men stacked all they could outdoors, and then stored the rest in the barn."

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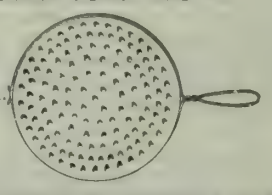
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Hints to Housekeepers.

Don't use borax and rosewater to remove tan and freckles without putting on a little cold cream afterwards, for borax makes the skin dry.

A glass of water drunk half an hour before meals and just before retiring will frequently regulate the bowels, so those troubled with constipation will be all right.

Camphor is very useful to freshen the air of a sick room. Put a piece on an old saucer, and on it lay the point of a red-hot poker, when its fumes will quickly fill the room.

In testing a piece of cloth to see if it is a cotton mixture, if you cut a small piece off and put a match to it, if it is all wool it will only singe, but if cotton is there it will flare up.

To remove old putty and paint, make a paste of soft soap and a solution of caustic soda, or with slaked lime and pearlash. Lay it on with a piece of rag or a brush, and leave it for several hours, when it will be found that the paint or putty may be easily removed.

It is not generally known that eggs covered with boiling water and allowed to stand for five minutes are more nourishing and more easily digested than eggs placed in boiling water and allowed to boil furiously for three and a half minutes.

To tell if a diamond is genuine make a small dot on a piece of paper with a lead pencil, and look at it through the diamond. If it shows but a single dot the diamond is genuine; if it shows more than one, or the mark appears scattered, it is false, no matter what it cost.

Make a delicious violet perfume by putting half an ounce of small pieces of orris root into two ounces of alcohol. Add to this a bunch of newly picked violets, cork and bottle tightly and shake well. After it has been standing four or five days a few drops on the handkerchiefs will leave the scent of fresh violets.

When the handles of steel knives and forks come off they can be easily mended with resin. Pour a little powdered resin into the cavity in the handle. Heat the part of the knife that fits into the handle until it is red-hot, and thrust into the handle. It will become firmly fixed by the resin when it becomes cool. Protect the blade from the heat.

Domestic Hints.

FRUIT JELLY.—Soak one box of gelatine one hour in one pint of cold water; when soaked, pour on one pint of boiling water, then put in a quart of fruit. Pineapples, canned strawberries or raspberries or other fruits may be used. Add one-half cup of sugar and one teaspoonful of lemon, then pour in mold to harden. Serve with whipped cream.

SCALLOPED WHITE FISH.—Mince some nicely cooked white fish until you have a cupful; season with pepper and salt and a generous bit of butter. Into this stir a cupful of breadcrumbs and two eggs, then turn the mixture into a baking dish which has been well buttered, and pour over it a half cupful of milk, drop pieces of butter over the top and bake twenty minutes.

STRAWBERRY DUMPLINGS.—Roll out a layer of cream of tartar biscuit dough very thin; butter and spread very thickly with ripe strawberries which have been rolled in sugar; then roll the dough up, pinch the edges tightly together and steam for three-quarters of an hour. When done, serve immediately, cutting slices from the end, jelly-roll fashion. An egg sauce or whipped cream is delicious with this dessert.

VEAL CURRY.—Veal is one of the meats especially adapted for curries. Here is a recipe, recommended at the New England School of Cookery: A slice of veal, half an inch thick, weighing a pound and a half, is cooked quickly in a frying pan without any butter. The surface should be quickly seared. Take out of the pan and cut in pieces about an inch and a half square. Make the curry sauce as follows: Fry two sliced onions in half a cupful of butter, take out the onions and add to the butter the meat, half a tablespoonful of curry powder, and boiling water to cover. Cook slowly until the meat is tender. Thicken when done with flour stirred into cold water and season with salt, cayenne and a squeeze of lemon juice. Serve with a border of boiled rice.

PINEAPPLE CUSTARD.—Make smooth three tablespoonfuls of flour with one of butter and stir into a quart of boiling milk. Have ready the beaten yolks of eight eggs, add to them two-thirds of a cup of sugar and turn into the milk, stirring constantly for three minutes; add, when cold, a cupful of chopped pineapple and four tablespoonfuls of lemon juice. Cover with a meringue of the whites of the eggs and four dessert spoonfuls of powdered sugar. Brown lightly in the oven.

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Cost of buildings, $550,000.
Number of employes, 3200.
Total number of students and graduates, Feb. 1, 1905, 755,000.
Mail matter handled each day, 15,000 pieces.
Daily output of Printing Department, 1½ tons.
Cost of preparation of textbooks and instruction papers, not counting printing, revisions, etc., $1,000,000.
Amount now being spent annually for improving and revising textbooks and instruction papers, $250,000.
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The Markets.

San Francisco Produce Report.

San Francisco, June 7, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 88¼@ 86⅝	82 @ 81
Thursday	87⅞@ 89	81⅝@ 82⅝
Friday	88⅛@ 89⅜	82⅝@ 83⅛
Saturday	88⅛@ 88⅜	82⅝@ 82
Monday	88⅛@ 87	82 @ 81¼
Tuesday	87⅞@ 88¼	81⅜@ 82⅜

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	49 @ 49⅝	48⅛@ 48½
Thursday	49⅝@ 51	48⅜@ 49¾
Friday	50⅛@ 50¾	49¾@ 49¼
Saturday	50⅛@ 49⅝	49½@ 48⅝
Monday	50¼@ 49¼	49½@ 48⅝
Tuesday	50 @51 *	49⅛@50

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Thursday	$1 35⅛@1 36	$ ——@——
Friday	1 36 @1 35½	——@——
Saturday	1 35⅝@1 35⅛	——@——
Monday	1 34⅞@1 36	——@——
Tuesday	1 36½@1 37¼	——@——
Wednesday	1 36¼@1 36	——@——

*Holiday.

Wheat.

Most of the influences on the wheat market the current week have been of a bearish character, or operators have tried to make them so, as is generally the case at the close of the season, with conditions just now favorable for the bear element getting in its work in this country, stocks of wheat throughout the United States being exceedingly light and permitting of only small trade on domestic account. Despite all the efforts of buyers, however, the market for new wheat does not give promise of opening at very low prices. The yield in this State will not be as heavy as was generally estimated during the Spring months, and much of the grain will be under No. 1. There will probably be a tolerably wide range in values, and no necessity of holders of good to choice wheat selling at unremunerative figures. December wheat has been slightly above $1.35 the past week, with no disposition shown to short it heavily at the prices ruling. Ocean freights on wheat for new crop loading are 22s 6d to Europe, usual option, or at 21s 3d if cargo is cleared for direct port. Four ships are now on the engaged list.

California Milling	$1 57½@1 62½
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 50 @1 55
Oregon Club	1 50 @1 57½

PRICES OF FUTURES.

During past week the range on options was:
December, 1905, delivery, $1.34⅞@1.36½.
Wednesday, at the forenoon session of Exchange, December, 1905, wheat sold at $1.36¼@1.36.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s10½d@-s-d	-s-d@-s-d
Freight rates	17¼@-s	23¾@-s
Local market	$1 27½@1 32½	$1 50@1 55

LOCAL STOCKS OF GRAIN.

Stocks of grain in near-by warehouses on May 1 and June 1:

Tons.	May 1.	June 1.
Wheat	23,156	*18,861
Barley	4,280	†1,952
Oats	2,226	686
Corn	543	360

*Including 5,903 tons at Port Costa, 11,329 tons at Stockton.
†Including 349 tons at Port Costa, 479 tons at Stockton.

Stocks of wheat in near-by warehouses on the 1st inst. show a decrease of 4,295 tons for the month of May. A year ago there were 32,549 tons of wheat and 11,121 tons of barley in near-by warehouses.

STOCKS OF GRAIN IN STATE JUNE 1.

Stocks of cereals, etc., in the State on June 1, 1805, and previous dates are given by the Merchants' Exchange as follows:

	1905	1904.	1903.	1902
Flour, bbls	120,533	165,004	145,004	177,173
Wheat, ctls	780,100	2,190,920	1,010,400	2,505,780
Barley, ctls	220,960	1,191,300	601,820	567,080
Oats, ctls	25,620	57,560	100,200	112 320
Rye, ctls	5,980	14,120	17,960	53,800
Corn, ctls	25,460	19,620	22,600	48,980
Beans, sks	201,831	326,313	333,073	312,746

Flour.

Considering the light stocks at present in the hands of the wholesale and jobbing trade, there is a fair amount of business doing, both for export and on local account. Market for desirable qualities is firm at prevailing rates. Many of the mills on the coast are closed down and will likely remain so for a month or more to come.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Market shows unsettled condition, with stocks of old barley almost exhausted, and no great quantities of new crop yet available. Speculative operators are expecting prices for No. 1 feed to drop to $1 per cental or lower before the close of the month. No. 1 feed barley, early delivery, seller's option, has been offered at $1.02½. But anticipation is not always realization. The market is tending downward, however, with prospects that the bear element will crowd prices to lower levels than warranted, and later on values will recover. Most of the tonnage now engaged for grain loading will likely take barley as main cargo. The present freight rates on this cereal to Europe are 23s 9d per ton for usual option as to ports, 22s 6d if clearance is made direct.

Feed, No. 1 to choice spot	$1 05 @1 10
Feed, fair to good, to arrive	1 00 @1 02½
Brewing, No. 1 to choice old	1 25 @1 30
Chevalier, No. 1 to choice	—— @——
Chevalier, common to fair	—— @——

Oats.

Market is decidedly unfavorable to buyers, stock being light and practically cornered. On the 1st inst. the supplies of oats in city warehouses were reported at 686 tons, as against 2,226 tons on May 1st, and 1,820 tons on June 1st, 1904. Present offerings are largely ordinary grades of whites and blacks.

White oats, fancy feed	$1 65 @——
White, good to choice	1 55 @1 60
White, poor to fair	——@——
Milling	——@——
Black oats	1 50 @1 60
Red, fair to choice	——@——

Corn

Not much corn of any sort now in store here, but with the export demand less active than for some time past, the market is easier in tone. Stocks in city warehouses on 1st inst. were 360 tons, as against 543 tons on May 1st, and 200 tons on June 1st, 1904. Prices a year ago were at much the same range as at present.

Large White, good to choice Cal	$1 45 @1 50
Large Yellow	1 40 @1 45
Small Yellow	1 50 @1 60
Egyptian White	1 32½@1 37½
Egyptian Brown	1 22½@1 27½
Eastern, sacked	1 37½@1 47½

Rye.

Good to choice rye is a scarce article in this market and is being very steadily held.

Good to choice	$1 55 @1 65

Buckwheat.

Not enough of this cereal now offering to enable giving more than nominal quotations.

Good to choice	$2 00 @2 25

Beans.

Market for prime to choice beans is firm at prevailing values, offerings of desirable qualities not being heavy of any variety. Inferior beans, fit only for hogs or sheep, are to be had at $15 per ton or less. Stocks of beans in city warehouses were reported on 1st inst. at 108,761 sacks, and on May 1st were 112,570 sacks.

Pea, good to choice, 100 lbs	$3 25 @3 50
Small White, good to choice	3 20 @3 40
Large White	2 50 @3 00
Pinks	3 50 @4 00
Bayos, good to choice	3 25 @3 50
Red Kidneys	4 50 @5 00
Reds	6 00 @6 50
Limas, good to choice	5 75 @6 00
Black-eye Beans	3 00 @3 15

Dried Peas.

The market is quiet at quotably unchanged values. About the only inquiry at present is for choice Green and ordinary Niles.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 50 @2 00

Hops.

There is nothing to indicate any special activity in the local market. Stocks are too light to admit of much movement, and growers generally are holding for 30@35c, while the views of buyers are at a lower range. The growing crop promises to be later than ordinarily and the yield comparatively light to the acre in most localities. The New York Producers' Price Current thus reviews the situation: "Very little change can be noticed in the general position of the hop market, unless it be a gradually softening tendency. Very little business has been done, but when sales have been reported they are generally at concessions in prices. We hear of a small lot of Russian river hops having been sold on the local market at 25c, and a lot of Yakimas has been offered to a dealer here at 23½c on the coast. Advices from Oregon report additional rains which have had a beneficial effect, but weather continues cool and warmer weather badly needed. Estimates of the 1905 crop in Oregon are now placed at 100,000 to 115,000 bales unless the crop has a serious setback. Advices from Washington and California are generally favorable. The combination or pool on the coast still talk firmly and confidently refusing to sell hops below 30c., claiming their hops will be needed sooner or later, and quietly awaiting developments, but few dealers here see any encouragement in the outlook. We do not hear of any contracting of the coming crop and if any future sales have been made by dealers to brewers they have probably gone short. In this State weather continues cool and there has been frost, but little damage reported, except retarding the growth. If frost had appeared a couple of weeks ago when shoots were young and tender there would have been considerably more damage. Warm weather is anxiously looked for. A sale of 75 bales old olds is reported in the State at 11c. The English markets are distinctly weaker, while continued very quiet markets are reported on the Continent. Crop advices are generally favorable both in England and on the Continent, but warmer weather wanted there as well as in this country. The Government's report lately issued, gives the sales of beer in this country for the months of January, February, March and April, 1905, at 13,508,592 barrels, against 13,031,689 barrels the corresponding months of 1904, an increase of 476,903 barrels."

Good to choice nominal	27 @ 30

Wool.

The most interest now is in the pool sales soon to take place at Ukiah and Cloverdale. Outside of above districts there is little wool in the State which has not been sold. There is every indication that for the clip of the Northern Coast counties better prices will be realized than have been current for years. For some of these wools 30c. has been bid and more will likely be realized for best clips.

SPRING.

Humboldt and Mendocino	30 @—
Northern, free	28 @29
Northern, defective	23 @26
Middle County, free	27 @—
Middle County, defective	23 @25
San Joaquin and Southern, free	26 @—
San Joaquin and Southern, defective	20 @24
Oregon, good to choice	27 @30
Nevada	22 @29

Hay and Straw.

Market for choice old hay is rather firm, with little of this sort coming forward. High grade Wheat and fancy Red Oat are most sought after, $15 being obtainable for the former and $12 for the latter. Common old continues plentiful and cheap. New hay is arriving both by rail and boat, but dealers are discouraging shipments by talking extremely low prices. New Contra Costa Wheat hay was reported sold at $8, and Tame Oat hay from same section at $6. San Mateo Red Oat hay showing rust went at $6. For new Alfalfa there is practically no demand at present; on one lot $4 was bid.

Wheat, good to choice	$11 00 @ 14 50
Wheat and Oat	9 00 @ 12 50
Tame Oat, fair to choice	8 00 @ 12 00
Wild Oat	7 00 @ 9 00
Barley	7 00 @ 9 00
Alfalfa	7 00 @ 10 00
Clover	6 00 @ 9 00
Stock hay	5 00 @ 6 50
Compressed	12 00 @ 14 50
Straw, ₱ bale	35 @ 50

Millstuffs.

Stocks of Bran and Middlings are light and mostly in few hands, causing them to be steadily held, but the inquiry for them is of a very light order. Market for Cracked Corn has an easier tone. Rolled Barley is expected to soon rule lower.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	21 00 @ 22 00
Middlings	24 50 @ 27 50
Shorts, Oregon	21 50 @ 23 00
Barley, Rolled	26 00 @ 27 00
Cornmeal	30 50 @ 31 50
Cracked Corn	31 00 @ 32 00
Oilcake Meal	33 50 @ 35 00

Seeds.

Business is of a light order in this department and at generally unchanged values. Spot stocks of the several kinds quoted herewith are of very moderate volume.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6¼@ 6⅝
Rape	2 @ 2½
Hemp	3½@—
Timothy	5 @ 5½

Honey.

There is not much honey of any sort now on the market, but the demand is slow. Some new is offering, mainly of lots to arrive. It is likely there will be more inquiry and better opportunity to dispose of holdings a little later on.

Extracted, White Liquid	5½@ 6
Extracted, Light Amber	4 @ 5
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Values remain quotably as previously noted, with moderate demand and not much arriving.

Good to choice, light ₱ lb	27 @29
Dark	26 @26

Live Stock and Meats.

Prime to choice beef is not in excessive supply and is in fair request at slightly better figures than have been lately current. Veal of desirable sizes is meeting with prompt custom. Mutton is without quotable change, offerings proving ample for current needs. Prevailing values on choice Spring Lamb are being well maintained. Hogs were in too light receipt and prices too high for packing.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½@—
Beef, 2nd quality	— @ 5
Beef, 3rd quality	4 @ 4½
Mutton—ewes, 6@7c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5¾@ 5¾
Hogs, large, hard, over 200 pounds	5¾@ 5¼
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	4 @ 6
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8 @—
Lamb, spring, ₱ lb	8½@ 9

Hides, Skins and Tallow.

Competition among dealers is not quite so keen on Hides as it has been lately, but there is still a good demand. Market for Wool Pelts is firm. Tallow values are ruling steady.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	11½@—	10½@—
Medium Steers, 48 to 56 lbs	11 @—	10 @—
Light Steers, under 48 lbs	10 @—	9 @—
Heavy Cow Hides, over 50 lbs	10½@—	9½@—
Light Cow Hides, under 50 lbs	10 @—	9 @—
Stags	8 @—	7 @—
Wet Salted Kip	10½@—	9½@—
Wet Salted Veal	11½@—	10½@—
Wet Salted Calf	12½@—	11½@—
Dry Hides	19 @—	18 @—
Dry Kip and Veal, 11 to 16 lbs	16½@—	15½@—
Dry Calf, under 4 lbs	22 @—	21 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 25@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	2 00@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

There is a fairly active movement in Grain Bags and market is firm at current rates. Some trouble has been experienced in promptly filling all calls for deliveries on buyer June-July contracts.

Bean Bags	$ 5 @—
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6⅜@6½
Grain Bags, Calcutta, buyer June-July	6⅜@6½
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3½ lb	30 @—

Poultry.

Demand was not lacking for choice young poultry, the larger and fatter the better. Some of superior size and in fine flesh brought higher prices than were warranted as regular quotations. Some Young Roosters, spurless and extra large, sold at $10 per doz. For some very choice Young Light Brahma Hens $12 per doz. was realized. Market for common old fowls and very small young stock was slow and devoid of firmness.

Turkeys, choice Young, ₱ lb	$ 24 @ 26
Turkeys, live gobblers, ₱ lb	19 @ 20
Turkeys, live hens ₱ lb	18 @ 19
Hens, California, ₱ dozen	4 50 @ 5 00
Hens, large	5 50 @ 6 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	7 00 @ 7 50
Fryers	5 50 @ 6 00
Broilers, large	3 00 @ 3 50
Broilers, small to medium	1 75 @ 2 50
Ducks, old, ₱ dozen	5 00 @ 5 50
Ducks, young, ₱ dozen	5 00 @ 6 50
Geese, ₱ pair	1 50 @ 2 00
Goslings, ₱ pair	1 25 @ 1 75
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	1 50 @ 1 75

Butter.

Several Government contracts for butter, aggregating over 200,000 lbs., were let in this market the past week. Some Southern dealers were making bids on Northern creameries. There was no lack of demand, nor is there likely to be for some weeks to come, unless prices should be crowded above the parity of values East.

Creamery, extras, ₱ lb	21 @22
Creamery, firsts	20 @21
Creamery, seconds	19 @20
Dairy, select	20 @21
Dairy, firsts	19½@20
Dairy, seconds	18½@19
Mixed Store	17 @18

Cheese.

There are no excessive offerings of desirable qualities of flats, the demand being good at current rates. Market for small sizes is firm, owing to limited supplies.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to good	9 @ 9½
California, "Young Americas"	10 @12
Eastern, old	17 @18

Eggs.

Tendency is to a wider range in prices,

with market firm for strictly choice to fancy. Certain buyers insist on having uniformly large and white eggs. These are in light receipt. Eggs running irregular as to size and color are in ample supply for the demand.

California, select, large, white and fresh.	23	@	—
California, select, irregular color & size.	21	@	22
California, good to choice store	17½	@	19
Eastern firsts	19	@	—
Eastern seconds	16½	@	—

Potatoes.

Old potatoes are in light supply and the season for them is nearly ended. New potatoes are coming forward in liberal quantity, but they are largely of ordinary quality. For choice new good prices were realized.

Cal. Early Rose, ₱ cental	1 00	@	1 25
Salinas Burbanks, ₱ cental	—	@	—
Eastern Burbanks, ₱ cental	1 40	@	1 60
River Reds, ₱ cental	—	@	—
Oregon Burbanks, ₱ cental	—	@	—
Chile Garnet, ₱ cental	1 00	@	1 20
Sweet Potatoes, ₱ cental	—	@	—

Vegetables.

Green Peas and String Beans were in liberal receipt most of the week. Asparagus of common quality was in good supply, but there was not much which could be termed choice to fancy, and latter sort met with a firm market. There were further receipts of Tomatoes from Florida, and also some Green Peppers from same section, choice of both bringing stiff figures. Summer Squash sold at a decline. Green Corn went at a wide range of prices, owing to great difference in quality. Red Onions were in liberal receipt. New Yellow Danvers are beginning to arrive.

Asparagus, No. 1 to choice, ₱ lb	5	@	7½
Asparagus, No. 2, ₱ lb	4½	@	5
Beans, Lima, ₱ lb	—	@	—
Beans, String, ₱ lb	3	@	5½
Beans, Wax, ₱ lb	—	@	—
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ doz	15	@	30
Egg Plant, ₱ lb	10	@	15
Garlic, ₱ lb	4	@	6
Mushrooms, ₱ lb	—	@	—
Onions, Australian, ₱ ctl	6 00	@	—
Onions, New Yellow Danvers, ₱ ctl	—	@	1 50
Onions, New Red, ₱ ctl	75	@	1 25
Peas, Green, ₱ sack	1 25	@	2 00
Peppers, Bell, ₱ lb	—	@	—
Peppers, Green, ₱ lb	15	@	25
Rhubarb, ₱ box	50	@	75
Summer Squash, small box	50	@	75
Summer Squash, per large box	1 25	@	1 50
Tomatoes, Los Angeles, ₱ box	1 25	@	1 75
Tomatoes, Florida, ₱ crate	2 50	@	3 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Apricots were in increased supply and prices were at a lower range than last quoted, but choice to select were salable to fair advantage, in some instances bringing an advance on quotations. Green Apples and Pears were in fair supply, as compared with the demand, but being mostly windfalls, were naturally not much sought after. Peaches were in rather light receipt most of the week and best brought comparatively good prices. Early Plums made a liberal display and prices ruled more in favor of buyers. Cherries showed reduced receipt and desirable qualities brought good figures. There were increased arrivals of Cantaloupes from Coachella Valley. Black Figs from Yuma Heights brought $1.25 per small box. Most kinds of Berries in season were in good supply, and the market in the main favored the buying interest.

Apples, fair to good, ₱ 50-lb. box	1 00	@	1 50
Apples, green, ₱ small box	40	@	75
Apricots, Royal, ₱ box	50	@	85
Blackberries, ₱ chest	3 00	@	6 00
Cantaloupes, Coachella, @ crate	2 00	@	2 50
Cherries, Black, good to choice, bx	75	@	1 00
Cherries, White, good to choice, bx	50	@	75
Cherries, Royal Anne, ₱ box	75	@	1 00
Cherries, loose, ₱ lb	4	@	10
Currants, ₱ chest	3 50	@	5 00
Gooseberries, English, ₱ lb	—	@	—
Gooseberries, other kinds, lb	3	@	6
Loganberries, ₱ chest	2 50	@	4 00
Loganberries, ₱ crate	75	@	90
Peaches, ₱ box	50	@	75
Pears, Madeleine, ₱ box	40	@	1 00
Plums, Cherry, ₱ box	35	@	60
Plums, Clyman, ₱ crate	40	@	75
Prunes, Tragedy, ₱ crate	1 00	@	1 25
Raspberries, ₱ crate	1 00	@	1 75
Strawberries, Longworth, ₱ chest	8 00	@	10 00
Strawberries, large var., ₱ chest	3 50	@	8 00

Dried Fruits.

Spot stocks of dried fruit are principally Prunes of the middle sizes, and offerings of these are being rapidly reduced, with market firm at current rates. The steamer Umatilla, sailing last week for British Columbia, took 42,925 lbs. Prunes and 19,257 lbs. other dried fruit. The steamer Queen sailing on 4th inst. for British Bolumbia, carried 54,070 lbs. dried fruit, including 47,075 lbs. Prunes and 2,625 lbs. Apricots. New Prunes are not offering under 3c. basis for Santa Claras. Dearlers are talking 5¾c@7½c. on new Apricots, as to quality, for future delivery, and 5½@8½c. for the different grades of this year's Peaches. There is every prospect that choice to fancy Pears will bring stiff prices

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes	6½	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ₱ lb	6	@	7
Apricots, Royal, fancy	7½	@	—
Figs, 10-lb box, 1-lb cartons	55	@	60
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¼@4½c; 50-60s, 2¾@3c; 60-70s, 2½@2½c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1½@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

Raisins now offering include few of high grade. The market is quiet at quotably unchanged values. The last two steamers clearing from this port for British Columbia took 12,000 pounds.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3½	@	3½c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			6 c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			4⅞c
Choice, 12-oz. Seeded			4½c
Bleached Sultanas, Woodland Dist., 50s	4¼	@	4¾c
Bleached Thompsons, Woodland Dist., 50s	5½	@	8 c

Citrus Fruits.

Oranges were in fair supply, and for desirable qualities there was a tolerably good demand at steady values. Late Valencias are now most in favor for long-distance shipments and command the best average prices. Lemons were in ample supply, although the movement showed some increase and values ruled steady. Limes were in increased stock and market was easy in tone.

Oranges, Navels, choice to fancy, ₱ bx	2 25	@	2 50
Oranges, Navels, fair to good, ₱ box	1 50	@	2 00
Oranges, Valencias, ₱ box	2 00	@	2 50
Oranges, Cal. Tangerines, half box	—	@	—
Lemons, California, select, ₱ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 25	@	1 50
Grape Fruit, ₱ box	2 00	@	2 50
Limes, Mexican, ₱ box	4 00	@	4 50

Nuts.

Market for nuts of all kinds is quiet, as is customary in the summer season. Prime to choice Almonds are not in large stock and are being steadily held. There is a firm tone to the Walnut market, the coming crop in this country and Europe promising to be under the average.

Chestnuts, Italian, ₱ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

The wholesale market is quiet at quotably unchanged values, the range on dry wines of last vintage being 14@17c per gallon for good to choice, San Francisco delivery, with little high grade offering and such difficult to obtain at the figures quoted. Sweet wines of 1904 are quoted at 25c per gallon in bulk at winery, or 27½c per gallon in a jobbing way at San Francisco, but the stock offering at these figures cannot be termed choice. The steamer Aztec, sailing June 3, carried 238,290 gallons and 67 cases wine, mostly for New York. A later steamer took 25,570 gallons and 64 cases, largely for New York. Receipts of wine at this port last week were 321,650 gallons, and for preceding week were 367,900 gallons. Receipts for month of May were 1,624,225 gallons, and for May last year were 1,282,000 gallons.

New Book on Angoras.

A very compact little book on Angoras, full of the teachings of long experience in growing them on the Pacific coast, is entitled "Angora Goat Raising," by the C. P. Bailey & Sons Co. of San Jose, Cal. It opens with interesting historical chapters and follows with general information on mohair, its handling and uses. Following chapters are devoted to "Breeding of the Angora Goat," "Angora Venison," "By-Products of Angora Goats," "Food, Climate and Protection," "Kidding Angoras" and "Diseases." The book contains 100 pages and will be sent to any address in the United States for 50 cents. It can be ordered through the PACIFIC RURAL PRESS.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	90,721	4,290,440	5,112,985
Wheat, ctls	22,058	2,674,228	2,308,505
Barley, ctls	56,211	3,396,381	5,404,201
Oats, ctls	2,308	815,384	852,672
Corn, ctls	13,368	277,116	159 333
Rye, ctls		54,637	58,657
Beans, sks	4,002	632,041	712 841
Potatoes, sks	20,134	1,229,562	1,284,347
Onions, sks	5,158	142,480	155,164
Hay, tons	2,338	169,155	165,806
Wool, bales	951	76,204	68,662
Hops, bales	23	39,339	29,493

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	56,436	2,814,072	3,153,444
Wheat, ctls	405	806,650	1,002,356
Barley, ctls	5,065	1,881,355	4,190,637
Oats, ctls	163	80,536	24.246
Corn, ctls	2,928	150,235	18,315
Beans, sks	2,212	51,765	39,959
Hay, bales	1,210	231,743	227,561
Wool, lbs		884,219	2,518,642
Hops, lbs	2,469	390,071	592,388
Honey, cases	293	3,066	4,905
Potatoes, pkgs	2,282	110,485	107,958

A Fall Flower Show.

A fall exhibition, under the auspices of the California State Floral Society, will be held in the Grand Nave of the Ferry Building during the latter part of October, 1905. The committee in charge invites the co-operation of the members of the Floral Society and of all growers and dealers in the State of California in order that this show of fall flowers shall be one of rare floral beauty, excelling in variety and arrangement any that has heretofore been held by the society. This show will include roses, chrysanthemums, dahlias and carnations, field-grown and those grown under glass, also all other flowers of the season.

The gold and silver medals of the society, together with special cash awards, will be offered as premiums.

A complete premium list, giving correct dates, rules and regulations, which shall govern this flower show, will be ready for distribution about August 1, 1905. Mrs. J. R. Martin is general director, and communications may be addressed to her at 275 Seventh avenue, San Francisco.

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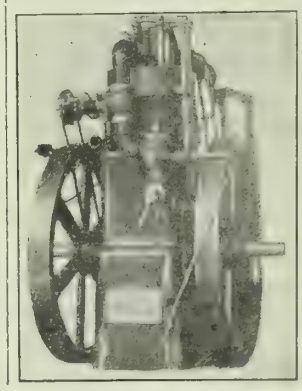
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XIII. Cultivation.
XIV. Fertilizers for Fruit Trees and Vines.
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Beware of so-called Elixirs. Tuttle's only is genuine. Avoid all blisters; they are only temporary relief.

THE FIELD.

Copperas as a Weed Killer.

A press bulletin of the Pennsylvania Experiment Station says:

Copperas (otherwise called green vitriol or ferrous sulphate) has recently been extensively advertised as a weed killer. Its value for this purpose has been very frequently tested during the past decade, especially in France, Belgium and Great Britain, and also in Canada. It is generally applied in 15% to 20% solution in water (seven to nine pounds per barrel) at the rate of forty to fifty gallons per acre, for the destruction of charlock, wild mustard, and wild radish. To secure good results, the application must be made while these weeds are still young and tender, before the time of blooming. It is much less effective on older plants.

Instead of using the copperas as a spray, the farmers of Belgium spread it, in a dry, finely pulverized state, broadcast on the ground. The quantity thus applied is from 200 to 300 pounds per acre. Ordinary copperas consists of rather hard green crystals containing about 45% of water. On exposure to air, the material gradually loses water, and becomes yellowish or brownish white and powdery. If heated a little above the temperature of boiling water, the entire mass rapidly whitens and crumbles. This freshly heated, finely powdered sulphate is found to be far superior to the ordinary green crystals for dry application after the Belgian method.

It is not, however, a universal weed killer. It is especially effective for wild charlock, wild mustard and wild radish, but kills wild barley, shepherd's purse, wild buckwheat, ragweed, wall flower, ground ivy, lamb's quarter, and sometimes field poppy, crowfoot and cardoon also. Curly dock, black bindweed, sow thistle, groundsel, comfrey, and aegopodium are somewhat injured, and, more rarely, dandelion and English daisy; while smooth-leaved charlock, corn flower, bent grass, couch grass, horsetail, chamomile, goosefoot, dead nettle, speedwell, spurge and thistles, and often bindweed, field poppies, dandelion and English daisy are entirely uninjured.

The cereal crops are scarcely injured, the edges and tips of the leaves being sometimes slightly browned, but usually recovering fully in a couple of weeks; neither are sugar beet, garden peas, grass, or commonly the legumes seeded with the grain; sometimes, however, very young clover and lupines are slightly injured; while field peas and beans are considerably hurt, and vetches, potatoes, turnips, rape and flax, seriously. Alfalfa is injured, sometimes killed, by the dry application.

What an Old Man Can Do in California.

One day last week, while visiting the fruit farms of Dry Creek valley, a representative of the Healdsburg Tribune found his way to the little home of Mr. William Whitney. The white-haired, genial old gentleman is nearly 87 years of age, yet, despite his long life, he takes entire care of his 17-acre vineyard, and does all the work on the place with the exception of the plowing.

Nearly twenty years ago, at the age of 68—at a time in life when most men have "laid down the shovel and the hoe"—Mr. Whitney went on his place, which was mostly as Nature made it, and began the work of clearing and planting, and to-day he has one of the thriftiest, best-cared-for vineyards in that section. He takes a pardonable pride in his place, and prefers the work and care necessary in looking after it to the life of ease he might enjoy at his son's home in Healdsburg.

For more than half a century Mr. Whitney led a busy and industrious life. Born away back in Maine, in the town of Hamden, near Bangor, in 1818, he was left an orphan at an early age, and at 16 took to the sea. For nearly twenty years he traveled the great highway of the world's commerce, most of the time in the West India trade. Starting out as a cabin boy, he climbed the hard ladder of sea life round by round until he stood at the top, and for many years he sailed out of Belfast, Me., as master of his own vessel.

In 1854 the gold fever gripped him, and he set sail for the far-off land, coming by way of the Isthmus. Two years later he returned to Maine, but after four years he again came to California to make his home. Later he went back to Maine and brought his family here, they coming direct to Healdsburg. He is full of energy yet, and thinks California soil offers splendid opportunities to the young man of vigor and foresight.

Wisconsin Stallion Law.

An act has been passed to regulate the public service of stallions in Wisconsin. The bill was drafted by Dr. A. S. Alexander, professor of veterinary science and horse breeding in the Wisconsin College of Agriculture. It is framed on lines similar to those of an act now in force in the Northwest Territory of the Dominion of Canada, and is, so far as we are aware, the first legislation of the kind enacted in the United States. The passage of this act is an important step in a propaganda recently commenced by this college for the advancement of horse breeding in Wisconsin. The purport of the act is to necessitate the standing of stallions for what they actually are as regards breeding, and to weed out, so far as possible, sires that are notably unsound. It will not deprive any man the right to stand a stallion that is of grade or cross breeding, but will compel him to disclose the true breeding of his horse to the owner of mares.

It is expected that the effect of this new law will be to encourage the use of sound, pure bred, pedigreed sires, and lead to the more general recording of eligible colts, while, at the same time, discouraging the use of unsound, grade "scrub" and cross bred sires.

The act will not take effect until January 1, 1906, so that in the interim owners of stallions may prepare to meet its requirements.

Experiments With Plants.

Those who are interested in nature study in the schools or in understanding for themselves how plants grow and are affected by various conditions of soil, moisture and air will find a new book by Dr. W. J. V. Osterhout of the University of California entitled "Experiments with Plants." The book is published by the McMillan Co. of New York and is sold at $1.25. The work is full of interesting facts and unique demonstrations. It can be ordered through the Pacific Rural Press.

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Spavin, Ringbone, Splint, Curb and all forms of Lameness.

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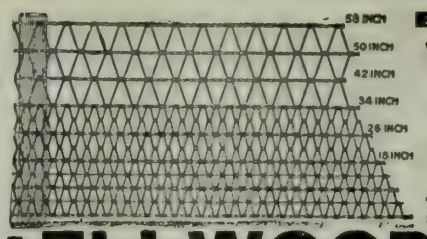
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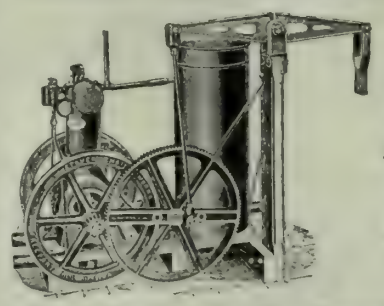
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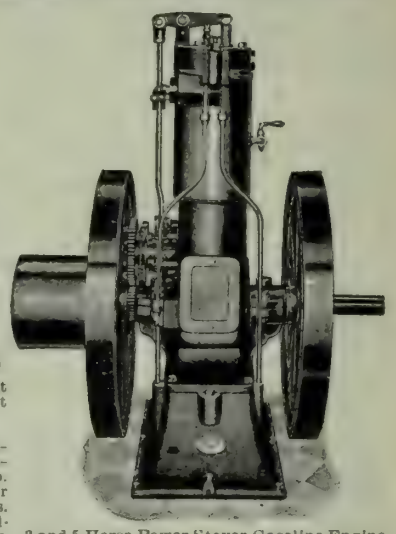


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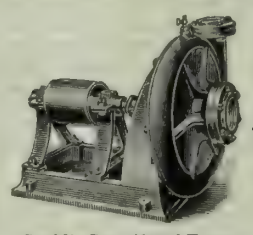
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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California

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I offer for a short time only a splendid 46-acre tract of land in the Santa Cruz mountains, which for a Summer Resort is ideal, being so situated as to be free from fogs and wind and commanding a magnificent view of hills and valleys. Fenced and cross-fenced; beautiful groves of natural woods; delightful and healthful climate. About 2500 assorted fruit trees, and five acres in table grapes. Location 4½ miles from Los Gatos. Fine house 7 rooms; barn and outbuildings; purest mountain water in abundance. Price $6000.

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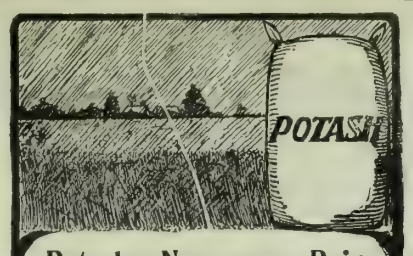
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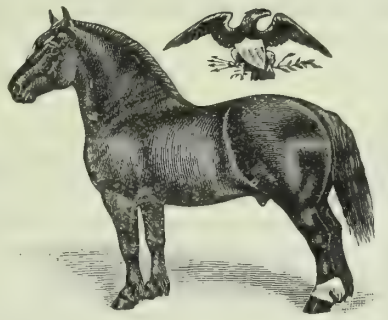
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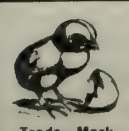
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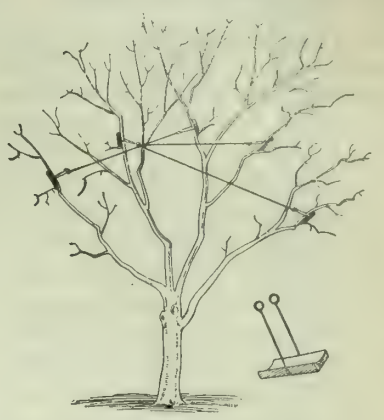
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Patrons of Husbandry.

The Oregon State Grange.

The annual session of the Oregon State Grange was held at Forest Grove on May 23. The report of the Treasurer showed that the finances are in good condition. The cash on hand May 22, 1905, was $5634.70, compared with $4293.25 on May 22, 1904.

The Secretary's report showed that there are now ninety-two Granges in the State, with 5493 members.

The report of the Executive Committee contained the following statements:

"Immediately after the close of the last session of the State Grange, a meeting of the Committee was held and it was decided to continue the same general plan of extension work with the same compensation that had been allowed heretofore. Four new Granges have been organized during the year.

"At a meeting held in October, final arrangements were made for the meeting of the National Grange. We are pleased to report that the funds raised in Portland proved to be sufficient to meet all the expenses which were incurred, so that it was not necessary to draw upon the State Grange treasury for this purpose.

"At the same meeting it was decided to carry out the instructions of the State Grange in regard to inspection of work of the Order. It was decided to offer $1 25 per day and necessary traveling expenses as compensation for deputies doing special inspection and instruction work, and individuals were selected whom it was thought would be especially suited for work in various parts of the State.

"Your Committee felt that the compensation offered was ample, but with one exception none of the individuals were so situated as to be able to accept the work upon the terms offered. Sister Mary S. Howard undertook the work in Clackamas county, and did regular inspection work in seven of the Granges of that county, where it was thought to be most needed. We are well pleased with results, so far as the work has gone, but we regret that we have been unable to carry it further, as we realize as fully as any one the absolute necessity of work of this character, if all the fields now occupied are to be retained. In fact, it will be noted from the Worthy Secretary's report that ground has been lost during the past year.

"Early in January, Brother J. Vorhees resigned as a member of the Legislative Committee and Brother Thomas Paulsen was appointed in his place. Shortly after this a special contract was entered into with Brother Vorhees to go into eastern Oregon and canvass a number of fields where there was thought to be good prospects of organization, as well as to build up and strengthen some existing Granges which were evidently much in need of help. As a result of his work one new Grange, Ramsey Park, No. 352, has been organized in Dufur, Wasco county. Much preliminary work has been done in a number of other sections and an important section of eastern Oregon has been saved from absolute loss to the Grange, and, we trust, permanently restored to the field. We have approved bills for expenses and per diem in accordance with this contract amounting to $138.88, and, considering the results accomplished and the opening made for future work, we consider the money well spent."

Farmers' Institute.

The Farmers' Institute, under the auspices of Glen Ellen Grange, will be held June 14th. Three sessions, which will occupy the whole day, will be held. Prof. and Mrs. D. T. Fowler and Prof. Bioletti will occupy the platform and speak on the following subjects: "The Dairy Herd," "Orchard Topics," "City or Country, Which?" "Poultry Industry," "The Future of California Wines," "Phylloxera," "Household Sanitation," "Food Values and Cooking."

New Grange at Dinuba.

A new Grange was organized at Dinuba, Tulare county, last Saturday by Brothers Webb and Dore. This Grange starts out under very favorable auspices, its membership being composed of the most progressive and wide-awake citizens of that rustling little town and surrounding settlement, and we think it is destined to take an active part in the Grange work as well as become a strong faction in all local affairs that affect the agricultural interests of the community. W. F. McCracken was elected Master; W. A. Bates, Overseer; Isaac Wright, Secretary, and J. H. Ramm, Treasurer. The Grange will hold regular meetings first and third Saturdays of each month in Odd Fellows hall, Dinuba, at 2 P. M.

THE ORNITHOLOGIST.

A Beautiful Cherry Bird.

An ornithological writer for the Sacramento Union gives an interesting account of the Western tanager, which has been doing considerable damage in some parts of southern California for a few years back and now seems to have multiplied in the central part of the State. A flock of this kind will attack a cherry tree, and in two days' time destroy all the fruit upon it.

While he has been known in this State for some years, he has not been so numerous as to be considered a fruit enemy. This year, however, he is numbered by legion in the Sacramento section, and has become an absolute nuisance. Yet he has his uses, and as a harmful insect destroyer has few equals and no superior.

It Is the Tanager.—The bird is the tanager, variously known as the Western tanager, the scarlet tanager, the summer red bird, the Louisiana tanager, the red-headed tanager, the blue-headed tanager, the black-winged summer red bird.

The bird belongs to the family Tangridae, and there are seven or more varieties of the brilliant-plumaged fellow. He is indigenous to the South, the Middle West, and even as far north as Idaho, but generally the tanager is reckoned a south and southwestern American bird.

The Red-Headed Tanager.—The red-headed tanager is probably the rapacious fellow who has been raising the mischief with cherries in these parts this spring. His back, scapulars, wings and tail are black. The wings have two broad yellow bands, but sometimes the bands are not defined; the head and neck are orange or red, for this bird is not of uniform plumage, but the red-headed or red summer bird, as he is known in the Middle West, is brightest in color on his crown, which sometimes is a brilliant crimson. The upper parts of the wings are dashed with scarlet. The breast is yellowish, fading to olive green.

The adult female is a grayish olive green, and her colors are all subdued. She frequently so closely resembles tree foliage as not to be seen, and being of domestic tastes keeps more in retirement than the male. Often a dullish yellow white is found upon her wings. In the male bird the lower parts are pale yellow, fading to gray and sulphur yellow on the under tail coverts.

The Scarlet Tanager.—The scarlet tanager is the true summer red bird, and is the same known as the Western tanager. His color is a true scarlet red, while another variety of the family is vermilion on head, neck and upper tips of the wings. One variety is blue-headed, but it has not been seen here. All these birds change their plumage, and in late summer the males discard their nuptial coats and adopt the soberer colors of the female.

The summer red bird or scarlet-headed tanager has a strong, not unmusical note, reminding one of the robin and the lark qualities of note, but it is shorter and not so sweet. The female is no singer. She is generally mute except when alarmed, and then she chatters in a lively manner, almost like the rapid pronunciation of "tschick-tukky- tuk, tschick-tukky-tuk."

What the Birds Eat.—The food of the tanager is bugs, beetles, berries, bees, flies and cynips. Small insects the bird generally takes on the wing as it darts through the air with great swiftness. The bill is not unlike that of a canary bird, but large, strong and full. In none of the ornithological works is the tanager charged as a serious destroyer of fruit, but that he makes cherry trees in this vicinity this year barren wastes, all can testify who grow cherries in and about Sacramento.

The tanager Sacramento has now to deal with is about the size of the oriole, perhaps a little larger. The extreme length is 6 inches, though some varieties produce birds of 7 inches from bill to tip of tail.

Varying Descriptions.—One authority gives a somewhat varying description of the scarlet or crimson tanager, that is found mainly in the South and Southwest. It has, it is said, crimson or scarlet crest wings and tail black, bill and feet dark brown color, above a clear olive; below, green or a greenish yellow, flashed with the color of the back. The male is often yellow orange or flame color on the body, with red patches on the wing coverts.

The Rose Tanager.—One variety of the bird is known as the rose tanager. The adult male is rich rose-red or vermilion on wings and tail, the former having a dusky subtinge, the bill is pale, but the feet dark. The female is a dull brownish olive above and a dull brownish yellow below.

Hepatic Tanager.—One variety is the hepatic tanager; the adult male being a brownish ash color, mixed with dull red, the top of the head, the upper tail coverts and the edging of tail and wings being brighter, dashed with red.

In the Louisiana tanager the anterior part of the head is orange scarlet, the back, wings and tail are black, and each wing has two yellow bars, but in many of the tanager family the wing bars are not found.

The tanager nests in woods, groves and orchards, on the horizontal boughs of trees. It lays three eggs usually, and nests but once.

In the case of all the tanagers the male moults about August 1st, lays aside his colors and attends to the duties of the household, assisting his mate diligently, as in her greenish yellow livery she attends to nesting duties.

Will Some Ornithophile Reply?

To the Editor:—I noticed in your last issue, under "The Ornithologist," that the State protects wild birds, and every almond or prune grower and vineyardist must feel sorry when the State makes a law to protect woodpeckers and magpies, because the latter especially are a great nuisance, and if they are of any benefit I would like to know it.—Chas. J. Schmid, Folsom.

THE DAIRY.

Effect of Corn Silage on the Flavor of Milk.

A very elaborate investigation has been carried on by the Illinois Experiment Station, the results of which are just published by W. J. Fraser, chief of the Dairy Division of the Station:

Ever since silage has been used as a feed for dairy cows, there has been more or less controversy over its effect upon the flavor of milk, the objection being occasionally raised that milk from silage-fed cows had an unpleasant, if not a disagreeable, flavor. To determine what foundation, if any, there was for this belief, the experiment herein described was undertaken and conducted in the following manner:

The University dairy herd was divided into two lots, one of which was fed forty pounds of corn silage per cow per day, which is the maximum amount for economical feeding, together with a small amount of clover hay and grain. The feed for the other lot consisted entirely of clover hay and grain.

The milk from both lots was cared for in exactly the same manner, being removed from the barn as soon as drawn and taken to the dairy building, where it was cooled. After standardizing to 4% butter fat, that there might be no difference in flavor of the milk from the two lots on account of a variation in this respect, the milk was put in half-pint bottles and sealed.

The Tasting.—In each case, before asking for a comparsion, a bottle of milk from each lot of cows was agitated to incorporate the cream thoroughly, and the milk in each bottle was poured into a separate glass. Three questions were then asked the person whose opinion was desired: First, "Is there any difference in the two samples?" Second, "Is there anything objection able about either?" Third, "Which do you prefer?" In every case the milk was known by number only and those whose opinions were obtained were not told concerning the manner of production, that their judgment might be unbiased by any prejudice they might have had as to the use of silage in milk production.

The people whose tastes were consulted were divided into three classes—ladies, men of the faculty, and men students. In the first case, the silage had been fed one hour before milking. Of the 29 ladies, 10 preferred the silage milk, 14 the non-silage, and 5 had no choice. Of the men of the faculty, 27 preferred silage milk, 20 the non-silage, and 7 had no choice. Of the students, 20 preferred silage milk, 4 non-silage, and 4 had no choice.

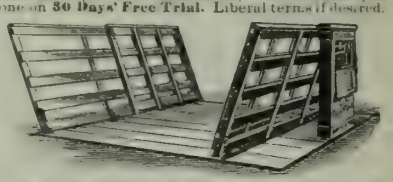
A preference for silage milk was indicated by 51% of the 111 tests made when silage was fed one hour before milking. When silage was fed at time of milking, 71% preferred silage milk, and when fed after milking, 51% reported the same preference.

The summary of all results shows that of the 372 tests made, 223, or 60%, preferred silage milk; 40, or 11%, had no choice; and 109, or 29%, preferred the non-silage milk. The people who chose the non-silage milk were, as a rule, those who do not drink milk, hence their opinion is not so important as is that of the people who consume milk more freely.

Samples of silage and non-silage milk were sent to five milk experts in Chi-

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cago and other cities, accompanied by a letter asking the same three questions. One of these experts had no choice, one decided in favor of the non-silage, and three preferred the silage milk.

Most people could detect a difference in the flavor of the two samples of milk, but it was expressly stated in every case that there was nothing objectionable about the flavor of either sample.

IN THE TRADE.—To determine further whether the public generally objects to silage milk, twelve half-pint bottles of such milk were delivered at the best hotel in the Twin Cities each day for a month, making 360 samples in all. These were served to guests who drank milk and no complaint or criticism of any kind was made.

For the past nine years the Department of Dairy Husbandry at the University has delivered from 100 to 150 quarts of milk a day to people in the two cities. During this time the cows have been fed an average of about forty pounds of silage per day, except when on pasture, and no complaints of a bad flavor in the milk have been received.

Mr. H. B. Gurler of DeKalb, who is one of the most progressive dairymen of the State, has been producing certified milk for the past ten years and selling it in Chicago at 12 cents a quart. All of this time Mr. Gurler has been feeding silage to his cows, excepting during the season of the year when pasture was abundant, and with the best of results.

CONCLUSION.—This is strong evidence that if the silage is of good quality and used in reasonable amounts, in connection with other feed, it is one of the best feeds obtainable for dairy cows when pasture is not available. It must be remembered that in all of this work nothing but good silage was fed and no spoiled silage was allowed to accumulate in or around the silo. When silage imparts a bad or disagreeable flavor to the milk produced from it, almost invariably the cause is that the silage has not been fed properly, or that spoiled silage has been used.

It should not be understood from this discussion that the time of day a food is fed which may impart a bad flavor to the milk is of no consequence. All feeds of this nature should be fed after milking and not before, to avoid the possibility of producing an unpleasant flavor in the milk.

ENTOMOLOGICAL.

Fighting Mosquitoes.

Prof. C. W. Woodworth of the State University and Dr. N. K. Foster, secretary of the State Board of Health, have joined in the publication of information about the reduction of mosquitoes and the relation thereof to the public health:

In many parts of California mosquitoes are a great nuisance, and nearly everywhere except in the coolest parts of the immediate coast region the species carrying malaria are to be found more or less abundant. Comparatively little work has yet been done with the object in view of mitigating this trouble; but the efforts that have been made have been remarkably successful. There seems no reason why individuals or communities in any part of the State might not take up the matter with a good deal of assurance of obtaining results which will amply pay for the expenditure. A great deal of investigation must be made before all the facts in regard to the species occurring in this State are available. In nearly every region there will be one or two species greatly predominating, and, if these are cared for, very little attention need be paid to the others. In the bay region, where the most work has been done, the predominating species are forms that have become adapted to living in salt water in their early stages and of migrating, when they become adult, in the direction of the prevailing winds.

MUST PREVENT BREEDING.—Where these species must be controlled, it is necessary to prevent their breeding in a definite portion of the marshes to the windward of the community it is desired to protect. Last year about San Rafael the marshes were inspected from time to time and those found infested were treated with crude oil, with the most satisfactory results, until quite late in the year, when, on account of the shortness of funds for the purpose, it was necessary to allow considerable breeding in part of the marsh area, resulting in a moderate degree of infestation of the town later on. This season the large marsh area extending from South San Francisco nearly to San Mateo has been taken in hand and up to date the results are very satisfactory. The methods employed in this region consisted in oiling regions incapable of treatment soon enough by other methods; of an extensive system of ditching, such as has been so successful in the marsh lands along the Atlantic coast, and more care in the drainage of reclaimed areas. This region is infested by at least two troublesome species. Fresh water areas are sometimes filled up with earth, sometimes drained, but more frequently treated with oil.

TO SECURE PROTECTION.—All through the bay region there is a possibility at any time of a fresh water species becoming locally troublesome. Usually the nuisance is limited to a few hundred feet from the breeding place, for as far as has been known none of the fresh water species are truly migratory. In the larger part of the State these non-migratory fresh water species will be the only ones to be considered. Because of this local character of the infection it is possible, even in cities, for the individual to largely protect his residence by looking out for breeding places in his immediate neighborhood. In the country every farmer has the situation practically in his own hands. As long as there is no fresh water within a few hundred yards of his residence, or if all the fresh water that is allowed to exist is carefully inspected from time to time, he can be practically sure of immunity.

MOSQUITOES PREFER SMALL POOLS.—Mosquitoes are by no means found in all standing water, and one will soon come to know the kind of localities which is likely to be infested by the species which is the predominant form in his locality, although at first it will be necessary to very carefully and persistently inspect every possible place of breeding. Mosquitoes are peculiar among water insects in that they usually prefer very small bodies of water, an old tin can on a dump heap being a sufficient breeding place for hundreds of mosquitoes, and large open bodies of water are almost invariably free from mosquitoes, except, sometimes, where the edge is filled with grass and weeds. In many places where the only standing water is in ditches, sloughs and ponds the clearing out of the foul growth around the margins will be all that is necessary to entirely eradicate the trouble.

SPREAD MALARIA.—This matter of mosquito control is particularly important in homes where there is a chronic case of malaria, because not only do repeated cases of reinoculation make it almost impossible to get the malaria out of the system of the patient, but he is a constant menace to the health of the rest of the family as long as the malaria-carrying species of mosquitoes are flying about.

The Entomological Department of the University of California has had charge of the mosquito control work at San Rafael and about Burlingame and has been making quite extensive studies in other sections.

INSECTS CARRY DISEASE.—The subject of the spreading of disease by means of insects—flies, fleas, bugs, mosquitoes, etc.—is receiving increased attention by sanitarians. We know that the common house fly is capable of carrying and often does carry the infection of typhoid fever, and there is no doubt that it also carries diphtheria, tuberculosis and perhaps other diseases. Fleas and bugs are accused of spreading plague, and that mosquitoes are responsible for malaria is admitted.

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Housekeeping Schools for Farmers' Daughters.

The question of establishing traveling schools for farmers' daughters which shall teach the principles of scientific housekeeping, cooking and farm work is being agitated in Alsace-Lorraine. Such schools are already in operation in Baden, Bavaria, Thuringen and Hesse and are giving great satisfaction.

The teachers are all educated women, graduates of the best schools of housework, who must have passed the Government examinations. All expenses incident to conducting the schools are paid by the Government, but these are comparatively light. An outfit for a school consists of a cooking stove, serving utensils, ironing boards, irons, tablecloths, towels and cooking utensils. Tables and chairs are borrowed in the various villages and the classes are held in the schoolhouses. Only twenty girls are allowed in a class.

There are practical lessons in housekeeping, cooking and the selection of food, then lectures on the analysis of food, the scientific care of cattle and poultry, the cultivation of vegetables and the making of butter and cheese. It is proposed to enlarge the curriculum to include a minor course in nursing, cooking for the sick, sewing, mending, etc.

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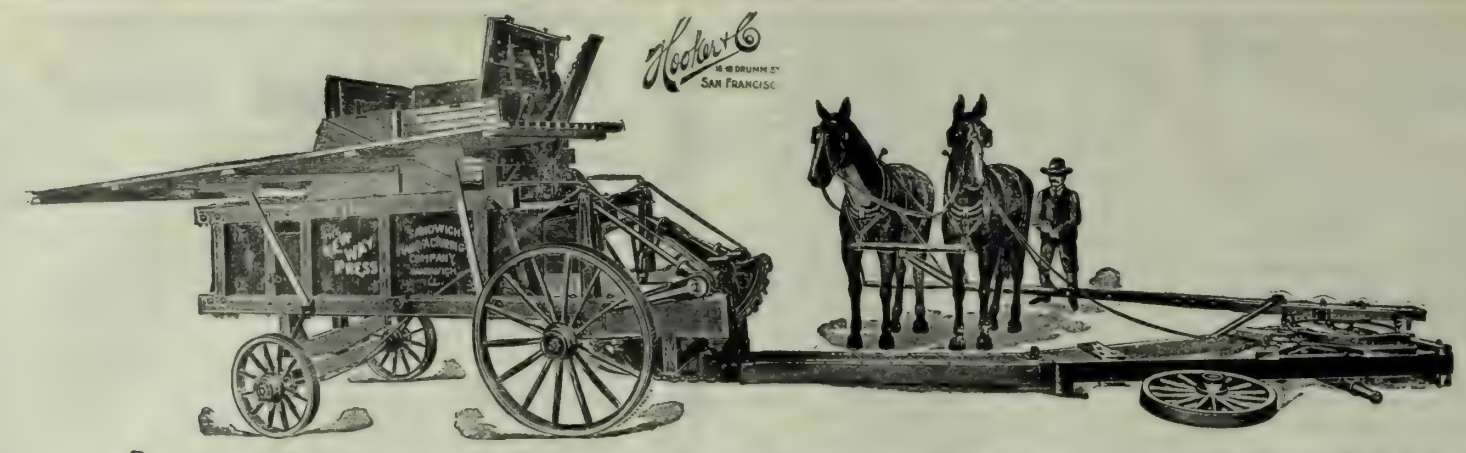
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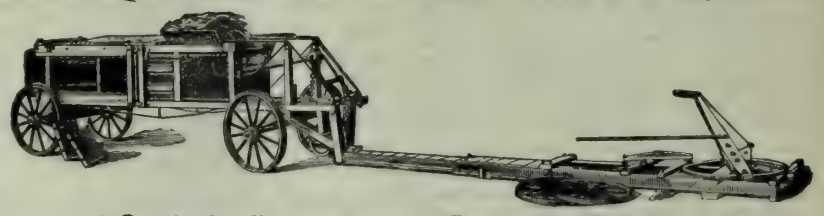
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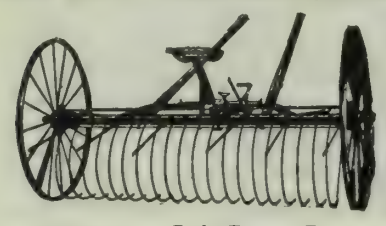
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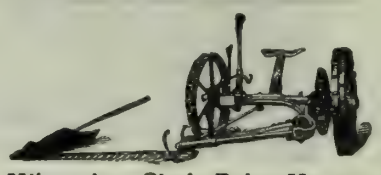
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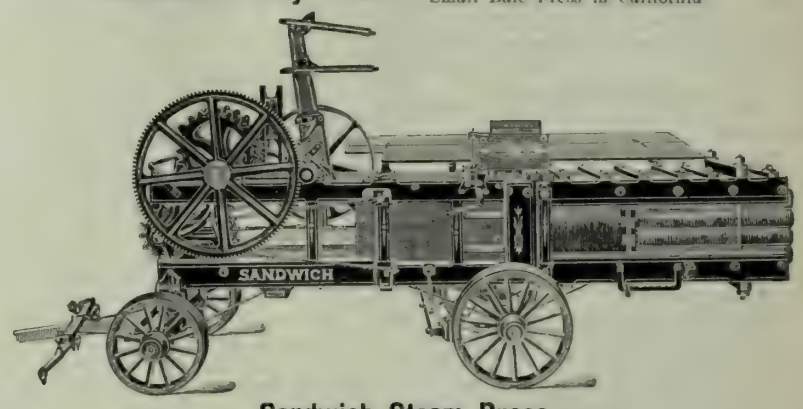
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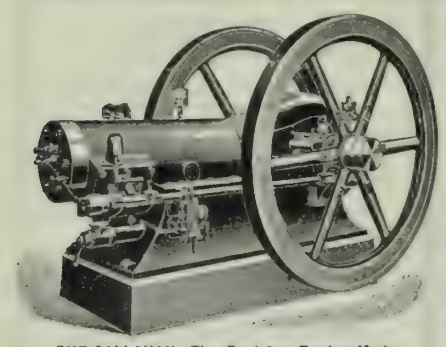


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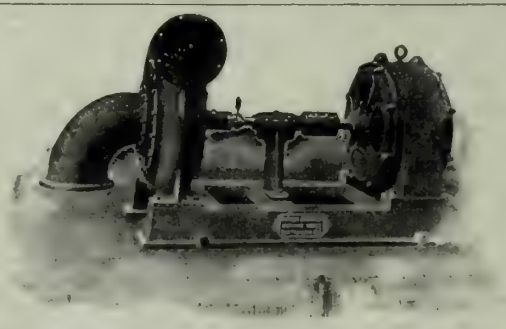
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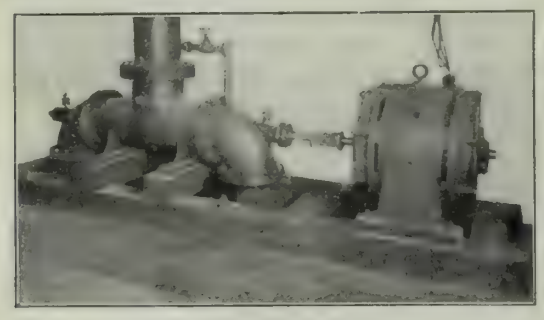
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THE PACIFIC RURAL PRESS
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Upland Farms in Humboldt County.

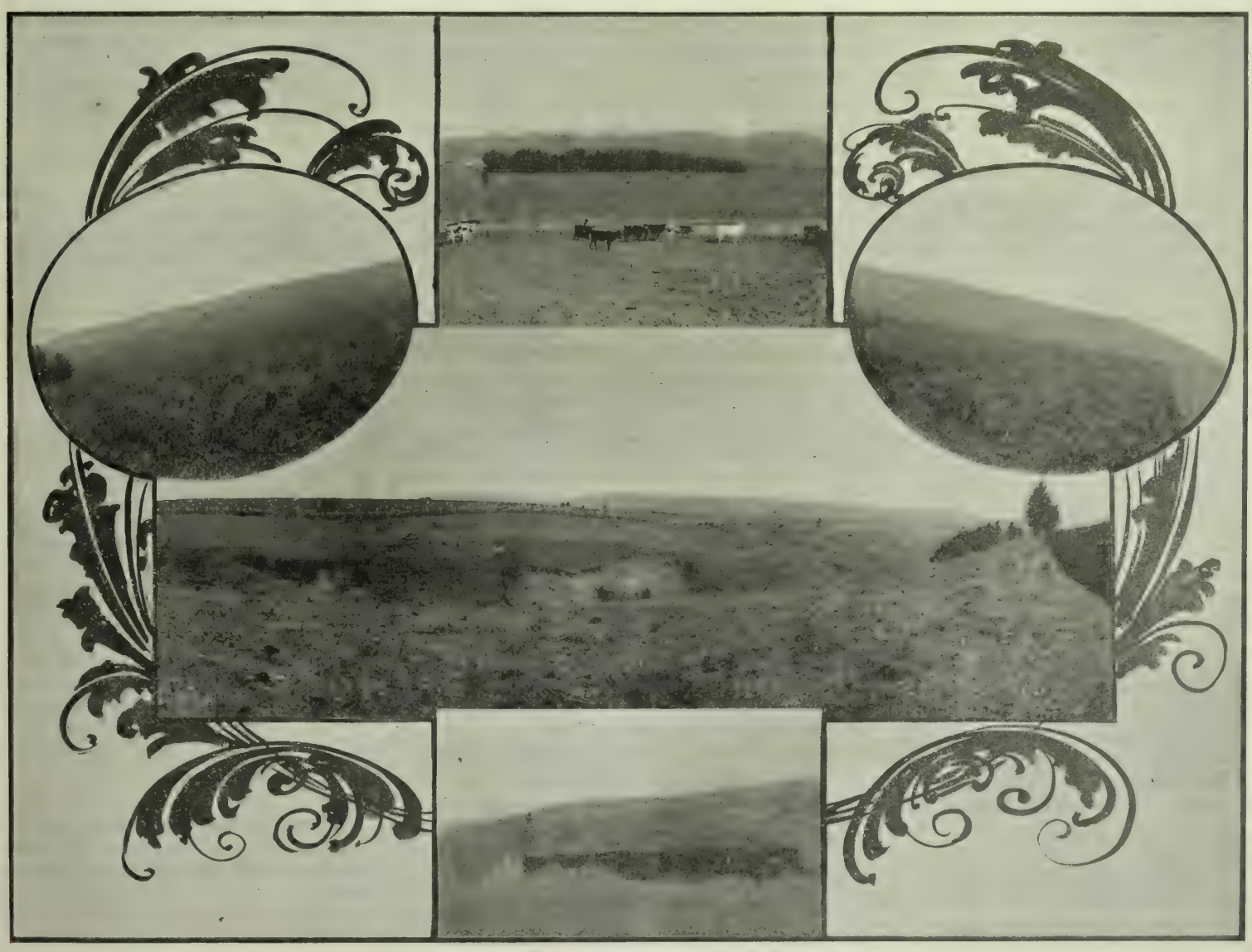
We close this week the interesting series of agricultural views in Humboldt county, which we have undertaken with a view to make better known the attractions of the upper coast regions of the State and to recognize more fully the achievements of a county which has not enjoyed the publicity to which it is entitled. The Eureka Times, for whose help we are indebted in making this exposition of the county, is certainly entitled to wide credit.

We have shown in earlier views some of the characters of the rich low lands of the county. The views this week relate to upland pastures and to dairying on such lands. That Humboldt stands as the banner dairy county of California is due mainly to natural causes, to advantages in climate and soil and to both these factors credit is equally due. An equable climate, affected largely by the Japan current, cool in summer and warm in winter, results in an even temperature all over the dairy district; this effect is also assisted somewhat by the topography of the coast country. Thus the warm breath of this current spreads over the land in summer and winter, and in the district affected by it the grass grows greener and is green longer than is possible at points in the interior where the hills, early in the season, assume a brown and bare appearance. The coast country, both valley and hill, is also greatly benefited by the fogs of summer rolling in from the ocean, in many places scarcely losing its verdure the year round, while a continuous subirrigation from the rivers and creeks keeps the valleys in fresh grass.

Dairying is now one of the most important industries of the county, second only to the chief business of lumbering. Considering Humboldt's somewhat isolated position, it has kept apace with the age in the improved methods; and with the creameries, butter workers, cultures and careful regulation of rations to the milch cows, has reached a development that finds Humboldt in no wise lagging in the race. The advent of the separator enabled dairymen to secure a greater per cent of cream than it was possible to obtain by the gravity process, and the invention of the butter-working machinery insured a more cleanly and better method of washing and working butter. The cool climate, together with the improved appliances now at the command of creamerymen, enables the butter maker to keep thoroughly under control the ripening of the cream, and this, too, without the use of refrigerating plants which are so commonly used elsewhere. Again, the sweet and nutritious pastures—embracing clover, rye, orchard and other varieties of grasses—impart a flavor which cannot be improved upon by the use of any of the popular cultures.

While native grass of the proper variety is one of the best rations extant for milch cows, it is not a balanced ration, and dairymen seek to supply lacking elements by the addition of other food. In order to tempt the appetite and supply an abundance of fodder that is not only succulent but rich in the various desired elements, corn, peas, beets and carrots are grown in rotation. These, with the addition of bran and hay, keep the herd in good condition and insure a splendid flow of milk from ten to eleven months in the year. This is as long as cows should be milked in any one season. They need a short rest to insure the best results.

Live stock ranching began in Humboldt decades ago and was conducted along range lines which are still largely followed, although the settlement of the county, which is now rapidly advancing, will bring in more of the farming elements. According to the elegant souvenir of Humboldt county published by the Eureka Times, there has been much development in direction of better stock during the last score of years. Humboldt county has been shown to be adapted to breeding of the best types of horses. There has been produced in large numbers preeminently useful horses by using the French and English draft stallions upon the common cayuse mares, and the result is a remarkably good average class of horses. Almost every farmer nowadays has a team which is able to haul him out of any trouble. This could not have been said truthfully a few years ago. In breeding cattle many large fortunes have been made and more are waiting for the patient, painstaking man of the future. The cattle product of the county is estimated at 10,000 head of beef annually, worth about half a million dollars. Sheep farming sank with the general depression a few years ago, but the flocks are now again increasing.



Scenes on a Humboldt Dairy Farm, Showing Character of the Upland Pasturage.

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SAN FRANCISCO, JUNE 17, 1905.

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The Week.

Growing conditions have improved notably this week with more sunshine and higher heat, as noted in the weather report upon the following page. One of the observations during more than a thousand miles of travel through the agricultural regions since our last issue is that a wider spread of rust in wheat and oats than ever before is one of the marks of this year. We saw bad rust in wheat even in the Imperial valley, where coast conditions by way of the gulf have brought moisture to combine with the heat to develop the rust parasite. It is very unusual to find rust so far into the interior as this year, not only in the far southeast, but in the central valley as well, and it seems to us that the crop must be much influenced thereby, although the bears are freely publishing observations to the contrary. If the growers have to stand the loss of weight by the rust they ought to have some compensation in value, and the situation seems to warrant such expectations.

Fruit shipments overland are beginning early this year and striking a very good gait, the total being about 100 carloads ahead of last year's record to an even date. How it will hold out in the aggregate is hard to say, but, owing to lack in some fruits, it will place much stress on others to fill the gap, and as canners and driers will be in the field to make the same hedge, it is a question what there will be to spare to ship to the East. At the same time the East needs fruit to fill Eastern shortages, and there you are with what ought to constitute an unusually good outlook for good prices for well grown fruit which can fill all these several needs. Such is the encouragement for those who know how to grow the best and have enterprise and energy enough to do it. The poor fruit has little chance even when prices are generally good.

Wheat has been firm but closes weaker, owing to a drop in futures in Chicago, with which San Francisco shows sympathy in December prices, but the local crop outlook does not justify such a drop. Spot wheat is also weak and the bears are having their day. There have been no clearances and no charters. Feed barley is soft, with a good deal offering on spot and to arrive. Nothing is doing in brewing. June barley has sold at 98 cents, and 93 cents asked for July. Some new red oats are in, sold to arrive at $1.40, but this is above the market. Colored beans are strong—Bayos being up and pinks stiffly held. Bran and middlings are steadily held and unchanged. New hay is not finding much demand—rates for new wheat being $8 to $10, and new oat at $5 to $7, while fancy old wheat goes as high as $15. Meats are quiet and unchanged. Creamery butter is in heavy supply and easy, while receipts of dairy butter are falling off. Buyers for storage are getting weary, and the Eastern market is weakening. Cheese is firm, some flats are being stored and small cheese are scarce. The general run of eggs is weak and many poor eggs are coming; fancy eggs are plenty, but the demand has slackened also. Poultry is quiet except fancy young. Potatoes are lower and weak for all but strictly choice. There are plenty of red onions and they are lower, but fine yellows are not abundant and go well. Oranges are unchanged, some fine Valencias selling fairly. Lemons and pomelos are quiet. There is an excess of common early fruits, but good cherries sell well and other fruits good for shipping go fairly. Pears are no higher and canners are cautious. Dried fruits are very firm, prunes higher and very large shipments to Europe taking place. Dried apricots are rather weak. Over 500 cases of Hawaiian honey are in and objected to for a sugary taste. California honey is quiet and unchanged. Nothing is doing here in hops and wool is nearly all sold and 30c bid for choice northern California and Oregon.

The greatest agricultural event of the week is the visitation by a group of distinguished people interested in irrigation development as national legislators or as experts of the Government institutions charged with the promotion of the engineering, economic and cultural phases of the great work which is being done under the national irrigation law. Water is to be turned this week into the first national enterprise — that which distributes California water from the Truckee river over a vast adjacent area of Nevada soil, and to properly celebrate this event these distinguished visitors have traveled thousands of miles, taking opportunity to observe the locations chosen for other national projects and the means to attain them. The visitors were met at the California State line at Yuma, escorted to the wonderful Imperial valley in eastern San Diego county, and shown the great results attained in an incredibly brief time in desert saving by private enterprise handling the waters of the Colorado river. It is true to say that the advancement of that country is not only a wonder to the visitor from other States, but the old Californian cannot find anything to match it for speed and extent even in this State of irrigation wonders. The visitors beheld the growth of the western half of southern California, both rural and municipal, admired the metropolis, noted the irrigation achievements of the San Joaquin and the opportunities in the Sacramento valley and left the State on the way to attend the opening in Nevada. They were accorded notable hospitality by the Southern Pacific Company by various organizations and individuals and gave many tributes to achievements and the outlook of California. We count all this a great event. It is one of the most notable of a chain of events which is leading California into the fuller light of the world's knowledge and active interest.

Governor Pardee is taking a hand at pushing the wide interest in making elementary agriculture a public school topic, and is securing very satisfactory responses to his effort to promote a good thing. According to the Sacramento Union, he received from the United States Department of Agriculture a bulletin by L. C. Corbett on the subject of "School Gardens," and was so well pleased that he applied for as many copies as the Department of Agriculture could spare. The Governor sent a copy to each of the directors of the Preston School of Industry and the Whittier State School, accompanying them with letters inviting them to make a study of the subject treated, and, if this method of forwarding nature study met with the approval of their judgment, to experiment in a way at those institutions among the inmates and report to him how the new study is received by the children. At the same time the Governor forwarded small bundles of the bulletin to Superintendents of Schools in the more populous counties and accompanied the document with letters setting out his idea about school gardens and requesting opinions from those county officers. Already a number of replies have been received and in each case lively appreciation is expressed, and the promise made to give the subject profound study, and in a number of cases it is also promised that experiments will be made. It is worthy of note in this connection that the next meeting of the State Teachers' Association, which will be held next December in Berkeley, will have this same line of effort for its leading subject and the Agricultural Department of the University will co-operate with the teachers in bringing forward the matter forcibly and effectively. As we have frequently said before, in these newer days these promising movements do not have to be pleaded for. Public attention and interest are aroused, and the question is not shall it be done, but how can it best be done for the good of the people and of the State. These are times for a progressive agriculturist to live in, to be sure!

QUERIES AND REPLIES.

Fruit Packages.

TO THE EDITOR:—Will you explain the following to me in the question column of your paper?: What is meant by "chest," "crate" and "drawer" in your fruit and berry quotations? I have a few strawberries, loganberries, dewberries, etc., which I sell to neighbors, but I don't know what to charge. I have some "so-called" one-half-pound, one-pound, two-pound and five-pound tin top baskets which all come in crates (fifteen of the one-half and one-pound baskets and four of the five-pound baskets to a crate). Will you please tell me how I can compare my various sized crates to the apparently standard crate, chest and drawer of the quotations? The one-pound baskets do not hold nearly twice what the one-half-pound baskets do. Are buyers supposed to return crates and baskets?—HAMILTON OTIS, Cazadero.

There is, unfortunately, much confusion in the contents and weights of the different packages used in marketing small fruits. It is very desirable that something should be done to secure more uniformity, but this seems very difficult to obtain. Individual growers use different sized crates and baskets, and there is no central agency nor authority to arrange otherwise. For this reason our comments in answer to your questions are not as definite as we could wish.

A chest of berries is supposed to contain 100 pounds of fruit, but in most instances the weight does not exceed 100 pounds gross, or about eighty pounds of fruit. Large strawberries in baskets loosely packed run as low as sixty pounds to the chest; currants solidly packed as high as 120 pounds. Of the ordinary drawers there are twenty to the chest, supposed to contain five pounds of fruit, but as above indicated, three and a half and four pounds comes nearer the weight.

The size and weight of crates are still more indefinite, as they contain all the way from five to fifty pounds of fruit, but the more common fruit crates are called 4 inches, 4½ inches, 5 inches and 5½ inches, and when filled weigh from twenty to thirty-five pounds, according to the kind of fruit and how solidly or loosely it is packed.

Crates, common baskets and boxes are free. Chests and their drawers are paid for by the buyers, checks given for them, and when the empty packages with checks are returned the money is refunded. Lug boxes, with open tops and hand holes in the ends, are returned to the seller.

Strawberry Growing.

TO THE EDITOR:—I am interested in strawberry growing and desire to know California methods. Also, can I plant strawberries next fall and allow the plants to bear the next spring? How many seasons will they bear profitably?—PLANTER, Vacaville.

We have published very full accounts of strawberry growing within a year, as readers who file the copies and use the index of each six month's volume can readily see. Our book on "California Fruit Growing" also discusses California methods. If you plant in the fall and the rains come early, so that the land is in good condition for the fall growth, the plants will so establish themselves in California climate that you may pick quite freely the following spring crop. The duration of the plantation depends very much upon the character of the soil and how well the plants are handled, but the common experience is that, although plants well treated can be counted upon as profitable for from five to eight years, it is generally advisable not to hold the plants in bearing more than half that time.

Broncho Grass — A Bad Intruder.

TO THE EDITOR:—What is the coarse grass of which I send a sample and which is getting into alfalfa in this region ?—FARMER, Napa.

The grass you send is known as broncho grass (Bromus maximus), which is becoming a troublesome weed in California. It is usually considered valueless for agricultural purposes. When ripe the barbed awns or beards are very injurious to stock, working into the eyes and even causing ulceration of the jaw, much as foxtail does. A few years ago farmers were disposed to have some respect for this grass because it seemed to run out foxtail, but it is worse than foxtail, because it is never good feed and foxtail is some good when young. Broncho grass is sometimes mown for hay when the heads are green and soft, but the hay is very inferior in quality. Since this grass spreads rapidly and is of little value it should be eradicated. As the plant is an annual of shallow-rooting habit it can be readily destroyed by cutting or pulling before the heads have matured. Do not wait too long before cutting, because there is sap enough in the stem to mature the seed even if cut quite green. Better keep it mown before heading.

Distance for Tomatoes.

TO THE EDITOR :—I hear that some are planting tomatoes 8 feet apart each way, but I am not sure that that is best on loose dry soil. What do you think ?—PLANTER, Glendora.

Concerning distance in the planting of tomatoes, they can be set at closer distances on drier land than on moist low lands, where the vines naturally make great extension. We can only advise you to plant some of them at 6 feet apart, square; or, if you prefer, plant them in rows 6 feet apart, 4 feet apart in the row. This latter arrangement works very well where you only desire to cultivate in one direction. You will have to make some experiments and judge by the behavior of your plants what future arrangements should be for your soil and moisture conditions.

San Jose Scale at the East.

TO THE EDITOR:—How can I get rid of the San Jose scale? I have an orchard in the East that is being destroyed by it.—READER, Monterey.

Concerning the treatment of the San Jose scale at the East, we cannot do better than to ask you to write to the experiment station in whatever Eastern State your property is located. Almost all the experiment stations in the Eastern States have taken up the San Jose scale for local study during the last year or two, and their results would be more trustworthy than any suggestions which we might make. If you do not know the location of the station in the Eastern State which you have in mind, we shall be glad to furnish the address on application.

Grass for Ill-Drained Soil.

TO THE EDITOR:—I have a piece of soil which is apparently rich, but is underlaid by a poor subsoil, and has water at about 3 feet. I am told the land is suited only for shallow rooting plants, like grass, unless it is underdrained. If so, what grass is best? —OWNER, Stockton.

The grass which promises best under the conditions which you describe is Australian rye grass, and it would probably be of advantage to sow with it a certain amount of red clover, which has proved to be quite satisfactory in your district, as it stands submergence and, if moisture is near enough to the surface, makes a good growth.

Potato Blight Bad This Year.

TO THE EDITOR :—Please tell us about potato blight; how is it produced ? Is it some defect in the soil or is it in the atmosphere ? Is there any preventive ?—GROWER, Half Moon Bay.

Potato blight is a fungous disease of long standing and rather well understood. Its prevalence is affected by atmospheric conditions undoubtedly. For example, it is worse this spring than usual, because we have had so much moisture and cool weather. It is also true that some varieties of potatoes are more subject to the blight than others, and it is probably more in the variety of the potato than in the soil, because new and very vigorous varieties will sometimes be free from blight for a good while in the same place that the older varieties blight badly. A change of seed is, therefore, often very effective in getting sound potatoes. These causes are rather more influential than changes in the soil, although sometimes very good potatoes are secured by planting on land which has not been recently used for that crop. If you will write to the Hon. James Wilson, Washington, D. C., and ask him for a copy of Farmers' Bulletin No. 91, entitled "Potato Diseases and Their Treatment," you will get some points that will be interesting in the way of a general description of the disease.

Milk and Cream at Stockton.

TO THE EDITOR:—I have been told that large quantities of milk are shipped from Stockton to San Francisco. Is this true ? If so, do they pack it in ice to ship ? Also, do they run it through a plant to take out the animal heat ? Is there a creamery in Stockton to which the dairymen take their milk and have it separated, getting so much a pound for the butter fat ? If so, can you give the address of a dairyman or two who sell their milk to such an establishment ?—READER, Turlock.

This is getting down a little too much into details. We are supposed to push the button and you to do the rest; you are pushing the button this time. We can assure you that there are large quantities of milk and cream sent down from the dairies around Stockton, and they come down in good shape on the night boats without ice; but all milk forsuch shipment is, or should be, properly cooled before shipping. There is a creamery in Stockton where milk is separated and paid for according to percentage of butter fat; but the same is true of Modesto and Ceres and probably at other points even nearer to you. We can not give the address of a dairyman ; there are hundreds of them, and we can not discriminate between our friends. To get the points you are evidently aiming at you should do something for yourself. Hitch up and drive to the nearest creamery or skimming station and see what are the best local arrangements to make.

Pear Blight and Blister Mite.

TO THE EDITOR:—The enclosed leaves are from a fine vigorous shoot that came up this spring from a pear tree that was cut down last year because it was afflicted with pear blight; the tree was nearly dead and was cut down near the ground. Four or five trees were cut down at the same time, and this was the only one that responded with good results. It gave promise of a fine growth until attacked with these spots about two weeks ago, and now nearly every leaf is affected. Can you tell me what the disease can be and also suggest the remedy ? I have about 1500 pear trees and for the last three years I have been cutting away for the blight, hoping to cut back far enough to escape it the next year. About half the orchard is badly affected, and instead of having a vigorous growth in part of the tree as heretofore the leaves have not developed and appear unwilling to open, and are of a silvery, unnatural color. Would it be better if I cut them out entirely ? When pruning this spring, all the affected parts were well covered with coal oil and the clippings carefully gathered and burned at once. About half the orchard is yet in good condition, and can you tell me what I can do to keep them from becoming afflicted ? A similar disease is attacking the apple trees. Can it be the same blight and should I use the same remedy ?—GROWER, Placer county.

The pear leaves are affected with the blister mite, which has no relation to the pear blight. The treatment for the blister mite is to spray thoroughly with kerosene emulsion just before the blossoms open in the spring. We cannot give you any suggestions concerning the treatment of pear blight beyond what we have already published. You should continue to cut it out, particularly continuing the practice during the latter part of the summer and not allow any blighted branches to come into the winter season. A very wide scheme of experiments is now being carried on in California orchards by the University Experiment Station and we hope to have practical suggestions to publish before the beginning of another season.

Italian Rye Grass on Reclaimed Land.

TO THE EDITOR:—I have sent a small sample of what, in my district, is called rye grass. Will you kindly inform me as to the correct name, and is it the best grass of this kind that can be grown for cattle feeding on tule land ?—OWNER, Napa county.

The grass is Italian rye grass, a form of Lolium perenne. It is one of the best of our introduced grasses, and together with its related form, the English rye grass, constitutes the two most valuable grasses which have been introduced to this State, and which have been quite widely sown on land which retains some little moisture during the summer, as these grasses grow with moderate moisture during the summer, start early in the fall and maintain good winter growth.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 12, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear and warm weather prevailed most of the week, with high temperature at the close. A severe thunder storm, accompanied by heavy rain, occurred in Redding and vicinity on the 7th, and light rain fell in other sections. Haying is completed in some sections and progressing rapidly in others; the yield and quality are very good. Harvest has commenced on barley and oats in some places and wheat is maturing rapidly. Prospects are good for an excellent crop of wheat in most sections, but grain on the bottom lands is inferior to that on the uplands. Grasshoppers are damaging orchards in Colusa, Glenn and Tehama counties, and a species of aphis has damaged grain to some extent in Sacramento county. Hops are improving with the warm weather and the outlook is good for a fair crop. Deciduous fruits are ripening rapidly and shipments of peaches and apricots are being made. Pears are improving and in some sections the crop will be better than estimated. Grapes, citrus fruits and olives are in excellent condition.

Coast and Bay Sections.

Clear and warm weather prevailed in the interior and cool, foggy weather along the coast, becoming warmer toward the close of the week. Light rain fell in some sections, but caused no damage. The Hessian fly is injuring grain in some sections, but in other respects wheat, barley and oats are in very good condition and maturing rapidly, except in the immediate coast districts. Harvest is progressing in some sections on oats and barley, with good results. Hay harvest is nearly completed and baling is in progress; the hay crop is large and the quality excellent. Hops are making rapid growth and the outlook is good for at least an average crop. Green feed is plentiful. Deciduous fruits are in good condition and maturing rapidly. Pears and cherries are a very light crop in most sections and prunes are light in some places. Peaches and apples give promise of fair crops. Grapes will probably yield a heavy crop in nearly all sections. Citrus fruits are doing well.

San Joaquin Valley.

Clear and warm weather prevailed during the past week and was beneficial to all crops. Grain harvest is progressing; in the northern portion of the valley wheat and barley are light and oats a good crop; in the central portion the grain crop is turning out better than was expected. Haying continues, and the crop will be large and of good quality. Apricot drying has commenced and large shipments of green fruit are going to Eastern markets. Early peaches are being shipped and the crop is generally light. The berry crop is large and of good quality. Figs and watermelons will be about ten days late in ripening. The crop of table and wine grapes will be good. Green feed is plentiful and stock are in prime condition.

Southern California.

The weather was clear and warm during the week, with occasional cloudy or foggy nights along the coast, and conditions were very favorable for all crops. Grain is maturing and gives promise of a large yield in most places. Hay harvesting is completed in some sections and baling is progressing; the crop is large and of good quality. Sugar beets at Santa Maria are reported in excellent condition, with prospects of a heavy yield. Beans, corn and vegetables are doing well and potatoes are free from blight. Apricots are ripening; the crop will be light in some sections and fair in others. Peaches and plums are not looking well. Small fruits give promise of an excellent yield. Walnuts are improving. Grapes are in excellent condition and a large crop is probable. Citrus fruits are thrifty.

EUREKA SUMMARY. — Continued cool and cloudy weather near the coast. Very warm in the interior where rain is much needed. In some places blight has appeared in potatoes and is doing considerable damage. Hay harvest is progressing and the yield is heavy.

LOS ANGELES SUMMARY.—Melons and other crops kept back by cool weather are now doing well. Prospects are good for a fair crop of apricots, but they will ripen later than usual. Honey indications are for a fair crop of fine grade.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 14, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week.....	Total Seasonal Rainfall to Date.....	Total Seasonal Rainfall Last Year to Same Date.....	Average Seasonal Rainfall to Date.....	Maximum Temperature for the week..	Minimum Temperature for the week..
Eureka	.00	32 66	65 16	46 05	58	48
Red Bluff	.06	33.81	31.52	26 04	98	62
Sacramento	00	21 98	16 87	19 93	94	52
San Francisco	.00	23 45	20 59	22 62	62	50
Fresno	.00	12 09	8 04	8 75	104	50
Independence	.00	4.03	2.59	3 74	90	52
San Luis Obispo	.03	23.57	16 99	20 12	68	48
Los Angeles	.00	19 52	8 92	16 46	96	52
San Diego	.00	14 32	4 40	8 21	68	54
Yuma	.00	8 69	1 00	2 89	106	60

THE FIELD.

The Government Tackles Johnson Grass.

Johnson grass is an outlaw by California statute and it is a crime to harbor it in certain places. How to escape it is the question, and this is taken up by W. J. Spillman, agrostologist of the United States Department of Agriculture, and answered according to conditions in the Southern States, as we shall quote at length. How far the method will work in California we do not undertake at this time to discuss:

Introduction.—On account of the importance of the subject to the farmers of the South the following notes giving results of certain tests of methods of exterminating Johnson grass are published in advance of the completion of the experiments undertaken. The complete investigations include not only a test of various cultural methods for the extermination of this pest, but also the use of various chemical preparations for this purpose, including such materials as crude petroleum (which is obtainable at very low prices in parts of the Johnson grass country), and various mixtures containing arsenic. The complete success of some of the cultural methods used in the experiments renders it important that they should be made available to the public at once. These methods are practicable on cultivated land, but do not apply to fence rows, ditch banks, nor railway rights of way. It is hoped that effective methods of controlling or even of eradicating Johnson grass in the latter situations may also be developed.

The cultural tests here reported were conducted by the writer on the farm of Mr. J. B. Gay of Columbus, Tex., and acknowledgment is made of the very faithful manner in which Mr. Gay has carried out instructions in connection with the conduct of the experiments. Three somewhat different methods of handling the soil were tested. The preliminary treatment of the soil was the same in each case, variation in the methods occurring in connection with the different cropping systems followed on the different plats.

Character of the Soil.—The land on which these experiments were conducted consisted partly of heavy, dark-colored alluvial soil, inclined to be wet. The south end of the plats extended to a lighter type of soil of medium character. The results were practically the same on the two types of soil. This land had been abandoned to Johnson grass for some years and was in the middle of a large field which was badly infested, and in which cotton had been grown for some years. At the time these experiments were undertaken it was believed by many that the eradication of Johnson grass is impracticable on account of the cost; but since that time the writer has learned of many farmers who have completely rid their farms of this pest by methods quite similar to those used in these experiments. Methods radically different from these have also been reported to be completely successful, though the writer has no personal knowledge to substantiate the claims made for the various methods.

Methods of Treatment.—The various methods of treatment will be considered in the order of their effectiveness. The general plan of the experiments was as follows: Plats 1 and 2 were devoted to rye and barley, respectively, during the winter, cowpeas the first summer, cereals again the next winter, and cotton the second summer. Plat 3 was devoted to cotton both years. Plat 4 was left bare the first year and devoted to cotton the second year. The triangular plat on the east side of the field was left in Johnson grass for the sake of comparison.

The preliminary treatment of plats 1, 2, 3 and 4 was identical and was as follows: In August, 1902, these plats were plowed with a disk plow to a depth of 4 or 5 inches. At this time the ground was dry and hard and a considerable growth of Johnson grass on the plats was turned under. On September 2, no rain having intervened, an attempt was made to remove the Johnson grass rootstocks from the ground by means of an implement called a root digger, but called by the manufacturers a grass hoe. On account of the cloddy condition of the soil the root digger failed to do satisfactory work. On the 15th and 16th of October, after the land had received sufficient rain to put it in good condition, it was replowed with a two-horse turning plow to a depth of about 4 inches, the utmost care being used to cut and turn every inch of soil in order that no Johnson grass roots might remain uncut. This plowing left the land in excellent condition. On the next day the root digger was used on this land, first crosswise of the furrows and then lengthwise. It is estimated that this operation removed fully 90% of the Johnson grass roots from the soil and left them on the surface. They were then raked off with an ordinary horse rake and removed from the land. On October 20, plat 1 was sown to rye and plat 2 to barley, plats 3 and 4 being left bare during the winter. The winter season proved to be very wet and neither the rye nor the barley made sufficient growth to justify cutting for hay in the spring. On April 7, 1903, all four of these plats were plowed again with a two-horse turning plow, the rye and barley on plats 1 and 2 being turned under.

The treatment given each of the plats will now be taken up separately. As the treatment given plat 4 resulted in the complete eradication of the grass, that will be described first.

As previously stated, plat 4 had been plowed twice the previous autumn and treated twice with the root digger. It was again plowed on April 7. On May 4 a drag harrow was run over it. On May 18 it was run over with an ordinary heel-scrape, or heel-sweep, as it is called in many parts of the South, an implement which shaves off an inch or two of the surface soil. The ground was harrowed again with an ordinary drag harrow the same day. The heel-scrape was run over the land again on July 17 and again on August 31. After that date no Johnson grass appeared on this plat. The subsequent treatment of the plat consisted of harrowing, on October 26, merely to smooth the surface.

In November, 1903, when the writer visited these plats, there was not a sprig of Johnson grass on plat 4, and Mr. Gay stated that none had appeared since the last of August.

On account of the unfavorable season, cabbages were not planted on plat 4, as contemplated in 1903, and the plat remained bare during the winter. During the summer of 1904 this plat was devoted to cotton. It was plowed on March 29 with an ordinary turning plow and cotton was planted the same day. This cotton was cultivated with the heel-sweep on April 20, at which time about half a dozen sprigs of Johnson grass were found along the eastern margin next the Johnson grass sod. On May 24 the heel-scrape was again used, on June 16 the cotton was chopped, on June 28 it was plowed again with the scrape, the final cultivation with the scrape being made on July 15. The cotton on this plat grew very rank, so much so, in fact, that it shed a great many of its bolls. In addition, the boll weevil destroyed a very large portion of the crop so that the yield of cotton was only one-fourth of a bale per acre. The growth of the cotton was very rank two years after the experiment began, no Johnson grass being present. As heretofore stated, there were a few sprigs of Johnson grass on this plat, but they were along the east side, adjacent to the Johnson grass sod, and were probably due to invading roots from the old sod.

It will be seen that the summer-fallowing given this plat during the summer of 1903, added to the work of the root digger in the autumn of 1902, completely exterminated the grass by the last of August. The number of cultivations given this plat during 1903 included one plowing with the turning plow in the spring and the use of the heel-scrape once in the middle of May, again the middle of July, and again the last of August. It would, of course, be impracticable for a farmer to treat his whole farm by this method during a single season. The method, however, is entirely practicable if a small portion of the farm is treated each year and great care used not to allow Johnson grass to start again from seed on the portion of the farm that has already been cleared.

The next most successful treatment was that given plat 3. The roots were dug on this plat in the autumn of 1902, just as on plat 4, and plat 3 remained bare during the winter. In the summer of 1903 this plat was devoted to cotton. The land was plowed with a two horse turning plow on April 7. On May 4 a drag harrow was run over it, and on May 18 it was planted to cotton. The cotton was chopped first on June 25, and was cultivated with the heel-scrape on June 26 and again on July 15. It was chopped again on July 23 and August 17. The last cultivation with the scrape was given on August 31. Although the weevil was very bad, the yield of cotton was one-third of a bale per acre. The same plat was devoted to cotton again during the summer of 1904, and no more Johnson grass was visible than the year before. On this plat, in addition to the cultivation above mentioned, bunches of Johnson grass, as they appeared, were removed by hand before the growth had reached a height of 6 inches. This was very easy, since all the sprouts that came were either from seed or from short pieces of roots left in the soil by the root digger.

Conclusions.—From the experience with this plat it seems that it would be entirely feasible to eradicate Johnson grass completely in a single year in the following manner: First, in the autumn, at a time when the land is in good condition to cultivate, plow to a moderate depth with a turning plow, being careful to cut and turn every inch of ground. A good disk plow so set as to cut every inch of the soil would answer as well. Harrow the land immediately so as to get it smooth and well pulverized. It is perfectly useless to try to use the root digger unless the land is brought into excellent condition and is free from clods. The next treatment is to run over the land with some implement which acts on the same principle as the root digger. First, run crosswise of the furrows and then lengthwise. The roots left on the surface by this treatment may either be removed from the field or left to decay during the winter. In the spring plow the land again with the turning plow and then put it in cotton in the usual way and give the cotton ordinary good tillage. Pay no attention to the Johnson grass until the first sprigs get to be about 6 inches high, then go carefully over the land and pull out every bunch of Johnson grass visible. By doing this work carefully it will be possible to remove every sprig, root and branch, because the grass sprouts come from small loose pieces of roots in the soil. By repeating this operation, never allowing a sprig to get more than 6 inches high, the grass can be completely eradicated during the summer, and the amount of labor required will not be excessive. We have found that the treatment given in the autumn by the root digger leaves comparatively little to be done the next summer. This is probably the most practical method for eradicating the grass on cotton farms. Similar methods could be pursued in a cornfield, but the average farmer in the South will not give a cornfield the attention given a cotton field. It is therefore recommended that where this method is used for exterminating Johnson grass, cotton can be grown the summer after the root digger is used in the autumn.

Very good results could doubtless be obtained by using the root digger on well prepared land in the spring instead of in the autumn, but if the work is done in the autumn the cold weather of winter will kill a large number of roots that would otherwise remain to be destroyed by hand work the next summer.

The treatment given plats 1 and 2 was not as successful as that given plats 3 and 4, yet very good results were obtained. As already stated, these two plats were treated with the root digger in the autumn of 1902, and were then sown to winter grain. The next summer they were cultivated in cowpeas, no particular attention being given to the grass. The next winter they were again devoted to winter grain, while the next summer—that is, the summer of 1904—they were planted in cotton. When it is considered that this land was pure Johnson grass sod at the beginning, it will be seen that after two years, with no special treatment except the use of the root digger the first autumn, the land was comparatively free from grass; in fact, there was not enough grass to interfere in the slightest with the production of the cotton crop.

Implements Used.—While the small harrow-like implement removes Johnson grass roots from well prepared soil very effectively, the implement itself is an impracticable one. In the first place it is too small, and it therefore requires too much labor to treat the land. In the second place the teeth soon clog with the roots and it is necessary to stop and raise the implement high enough to allow the roots to drop off and then start the team and hold the implement in the air until it has passed over the pile of roots. For the past year most of our energies have been directed to securing a more satisfactory implement for removing the roots from the soil. We have found that the teeth of the implement must be close enough together not to leave a space over 3 inches wide between the tracks of the teeth. At the same time, when these teeth are all placed in one row, they bank up the soil in front of them and do not allow the implement to pass through properly. On loose, sandy soil the teeth in the same row must be at least 6 inches apart; on ordinary loam soil, 9 inches; and it is probable that on heavy clay soil they would have to be 1 foot apart. From plans furnished by Mr. Gay a more effective implement was constructed. The implement has two rows of teeth so set that, when viewed from the rear, the teeth are only 4½ inches apart, but it did not remove the roots from the soil nearly so completely as did the grass hoe. We are now constructing a new form of the implement, having three rows of teeth, those in the same row being 9 inches apart, and the rows so set that the teeth make tracks only 3 inches apart. As soon as a practicable implement has been evolved the details of its construction will be made public. The roots collected by the teeth of the root digger are easily dumped by tilting the implement on end, first one way and then the other. The tilting may be done by means of the handles, without stopping the team.

In the course of these investigations several different types of machines have been constructed and tried. One of these was constructed on the principle of the ordinary sulky hayrake, but having rigid steel teeth so set as to draw into the loose soil about 4 inches deep. The amount of labor involved in working this machine seems to render it impracticable; besides, it would be quite expensive. We are endeavoring to evolve an implement that can be constructed by any local smith. It is probable that a heavy drag harrow could be made to take the place of a root digger and would therefore leave more hand work to be done the next summer, nevertheless it is believed it would be practicable to eradicate Johnson grass in this manner.

It is, of course, well known that Johnson grass can be eradicated by repeatedly plowing the land with a disk plow or a turning plow, but repeated plowing without the production of a crop is an expensive method of destroying the pest. By plowing in winter, thus leaving a large proportion of the roots exposed to cold weather, the stand of grass can be reduced very materially.

The Production of Hay.—It is the writer's belief that, with the adoption of thoroughly modern methods of tillage throughout the Johnson grass region, it may become practicable to utilize this grass for the production of hay without serious interference with the cultivation of other crops. Fall plowing, treatment with a root digger or perhaps with a heavy spike-tooth harrow, combined with more or less hand

pulling the next season, will so reduce the stand of grass that it will be several years before it will again seriously interfere with the production of cultivated crops. The land can then be allowed to go back to Johnson grass for two or three years for the purpose of hay production, thus adapting it to a rotation of five or six years. The writer, however, would not advise any farmer to sow Johnson grass on land that is free from it until more is known about methods of controlling it. It is very unfortunate that a grass, which will produce three good crops of hay in an ordinary season, should be so hard to control as to render it a very serious pest.

THE STABLE.

Trick Horse Trainers Must Have Patience.

"What qualifications must a trainer possess before he can successfully educate horses to do the tricks seen in a circus?" says a writer in the Breeder and Sportsman. This question was put to one of the expert horse trainers at the Sells-Forepaugh circus headquarters. "Kindness and perseverance. He must be a good judge of horse nature and possess an unlimited stock of patience—more patience than is usually attributed to a nurse in a children's home." The trainer continued: "A horse is like a child. He appreciates kind treatment and rapidly learns to love the attendants who greet him with pleasant words and a caressing pat. From the time that you impress upon a horse that you are his friend he will make every possible effort, in his dumb way, to show his appreciation, and in nine cases out of ten prove to be a willing pupil when you begin to educate him.

"Bud Gorman, one of the Forepaugh-Sells veterans who has been educating horses during the winter months at the circus headquarters, selects his horses with as much care as a society woman plans a party gown. The candidate must be handsome in color, as near perfect as possible in conformation, and possess an even temperament. His eyes must be large and devoid of the least trace of viciousness; he must hold his ears pointed slightly forward, and he must have a sensible looking head, broad between the eyes. Horses who lay back their ears at the approach of a man, who nip viciously at every passer-by and whose eyes plainly demonstrate a mean disposition are discarded. A trainer will not handle an animal of this kind.

"Once the candidate is selected he is shipped to the winter quarters of the circus and assigned to a comfortable stall in a large, clean, well-ventilated barn tenanted by several hundred beauties of this kind. Good hay and oats are his in abundance, and for several days he is allowed to rest and become familiar with his surroundings. The trainer visits him daily, and, by speaking kindly and occasionally giving the animal a bit of sugar, gains his confidence. After a time the horse begins to whinny at the approach of the trainer, and the bond of friendship is thus quickly cemented.

"Then comes the first lesson. The candidate is introduced to the training ring constructed near the barn and allowed to wander about at will. He smells the sawdust, the pedestals and the harness and ropes that will soon be buckled about his body, and then, horse-like, lies down in the center of the ring and enjoys a good roll.

"Next day he is led around and around the ring for several hours, and soon understands that he is expected to encircle the ring of his own accord. Then a strap is placed around his right foreleg, and from this strap a rope is run through the harness and fastened around his body. The trainer grasps the free end of the rope in one hand and a pair of lines attached to the horse's bridle in the other. The animal is told to 'get up,' and after the ring is encircled a few times the command 'whoa' is given. If the horse refuses to obey, a quick pull on the rope draws his legs from under him and he is forced to stop. Only a few demonstrations of this kind are necessary to show the horse that he must stop when the command is given.

"After these preliminaries are satisfactorily accomplished, the equine pupil is taught to kneel first on one knee, then on the other, and finally on both. All this is accomplished by drawing up the front legs one at a time, thus forcing him down. His knees are padded to prevent injury, and every time he is forced down the command to kneel is given and the animal is petted and reassured with kind words, until finally he kneels at the word.

"It is in these preliminary lessons that a good performer is made—or spoiled. The instructor must be firm and resolute, but kind, always kind. A horse is like a child—you may coax him, but you can't force him without spoiling his disposition. The animal quickly notices any show of ill temper or roughness on the part of the instructor and resents it by becoming balky and obstinate. Blows or harsh punishment only make him worse. You frequently hear people at a circus assert that animals are beaten into submission in teaching them tricks. People who say this never saw the inside of the training quarters of a modern circus. In the olden times there was a great deal of brute force used, but it was because the owners and trainers didn't know any better. A horse or any other animal conquered in this way is never reliable and is apt to spoil a performance by an outbreak of bad temper, besides being dangerous to handle. As soon as it was found that the education of a horse may be accomplished more quickly and with better results by kindness than by brute force, the latter method was shelved.

"The next lesson is the art of lying down and remaining motionless until the word is given to rise. This information is imparted to the horse in a manner similar to the kneeling lesson. An ingenious harnesss makes it possible for the trainer to draw the horse down on a soft bed of hay without injuring him. When the horse willingly lies down at the word of command, he is taught to sit upon his haunches, and then is gradually drilled into the other tricks that always draw applause from children and adults alike.

"It is usually an easy matter to teach a horse to stand upon a pedestal, to waltz, rear on his hind legs and march in unison with equine companions, after these simple lessons are thoroughly learned and the horse understands the trainer is his friend and not his enemy. The horse of average intelligence learns quickly as soon as he realizes what is required of him. The main requisite on the trainer's part is patience, and if a man hasn't got this and lots of it he had better keep out of the business. If he gets excited or impatient and goes to hauling the horse about unnecessarily, the animal is sure to become uneasy and fretful, and a little experience of this kind will spoil him.

"The better bred a horse is the more intelligence it has and the more apt it is to make a good performer, provided it has been handled properly from colthood. All high-bred horses, however, are nervous, and require kind treatment in order to insure good results. That's why you see so many bad actors on the race tracks. Thoroughbreds are usually intelligent, but they are left to the mercy of ignorant stable hands who bang and slap them around until their dispositions are spoiled. They are teased and beaten until they develop into kickers and biters and man-eaters, and the thoroughbred gets a bad name. Few horses are naturally vicious; they are made so by bad handling.

"It's no use trying to do anything with a lunkhead of a horse, and for this reason the mongrels, as a rule, are not satisfactory for ring purposes. They haven't got intelligence enough to comprehend what is wanted of them. The old Morgans, a breed that is fast dying out, make good performers, but are a little undersized. As a class, the thoroughbreds of the hunter type are the best material to make trick horses of. They have size, substance and brains, and with the right kind of treatment are docile and tractable."

THE DAIRY.

Feeding Calves.

At a recent meeting of the Ayrshire Breeders' Association a paper was to be read by Professor Hayward, of the Mt. Hermon School for Boys, on the above subject. It is very suggestive:

How to rear calves economically is one of the most important questions that the dairyman has to meet. It would be an easy matter to let a calf run with its dam for the first six months of its life, but, while the calf would make a most excellent growth and be a thing of beauty, the practical dairyman—he whose living and taxes come from the dairy—realizes that such a calf has cost more than it is worth, and has been nearly, if not quite, ruined as a dairy cow. Perhaps it is safe to assume that it requires more skill to raise the dairy calf to-day than it did a score of years ago, for, requiring more of our cows in the way of milk production, and subjecting them to a forced system of feeding, the calves are brought forth under more artificial conditions and are, in consequence, less vigorous. It is desirable to raise the highly developed calf with the least outlay consistent with satisfactory results, which is an increasingly difficult task, as feeds are higher and dairy products relatively lower.

Briefly stated, then, the problem is: Having given a more or less delicate, highly organized calf, conceived and born under somewhat artificial conditions, to raise her with the minimum expense into a cow that shall be a maximum producer.

To start with a clear understanding of our task, it will be well to know something of the digestive tract of this calf. We should bear in mind that, in taking it from its mother, we are substituting an artificial method for a natural one, and that, while we have done and can do a great deal in appeasing mother nature with substitutes, there are certain physiological laws, inexorable in their demands, which must be satisfied if we desire the best results. One of these laws is that, until a calf has reached a certain age or stage of development, the salivary glands do not act to change the insoluble starch of food into soluble sugar and, in consequence, if the food containing starch is given before the glands are developed sufficiently, more or less irritation and indigestion will be caused. Milk does not contain starch and is the most satisfactory food, under most conditions, for the first two weeks of the calf's life. The amount of milk required during this period depends upon a few important factors, of which the size and vigor of the calf and the composition of the milk are, perhaps, the most important. It is generally conceded that it is best, in most cases, at least, to allow it to stay with its mother for the first six or twelve hours of its existence. During this time it will have gotten enough of the colostrum milk to start its digestive functions, while, on the other hand, it is not apt to overload its stomach to an extent that will cause digestive disorder. In my own experience, we have fed calves, weighing 53 to 100 pounds, eight pounds of milk testing a little over 4% per day. This is equivalent to a little less than four quarts, and it produced satisfactory results. Figured even on an average retail price from the end of the colostrum period to the time the calf is two weeks old, the cost of this milk amounts to a small sum and can be afforded by any dairyman who is eager to raise a choice heifer calf.

Up to this time the feeding is an inexpensive and, of necessity, a simple matter. For the next eighty-five days, however, the problem is much more complex and the feeder's ingenuity is taxed to the utmost. When the calf is weaned from the whole milk, one of two methods may be used for the next feeding period. The most natural, and by far the simplest and least expensive, consists in using the dairy by-products, skim milk, butter-milk, or whey. When properly fed, a pound of gain can be produced from about twelve pounds of skim milk. The most satisfactory results can be obtained by feeding grain of some sort with the skim milk. The Iowa Experiment Station found that sifted ground oats or corn meal and a very little flaxseed meal with the milk gave much more economical results than skim milk and linseed meal. This is attributed to the fact that skim milk, being very nitrogenous, needs a less nitrogenous grain to balance it. The amount of either skim milk or grain must be left to the discretion of the feeder, but, as a general guide, it may be said that a dairy calf should not gain more than one and one-half pound per day for the first four months of its life and a little less thereafter. Either extreme of condition should be avoided. A calf that is for any reason kept very thin cannot make the growth necessary for a strong, vigorous constitution. On the other hand, a calf kept too fat is not receiving the proper training to fit her for a profitable dairy cow. Whey is not a satisfactory food for calves, having but about half the value of skim milk for this purpose.

Although I do not know that it has ever been tested by itself, I believe that the various brands of skim milk powder promise to be good calf food, but, on account of their expense, can be used only under extraordinary circumstances, when fresh or skim milk is not available. They are soluble in water, contain all the solids of milk and, while not quite so palatable as skim milk, can be fed.

"Calf Meal."—The question of calf meal or milk substitutes is one that has been of interest to the experimenter for a long time. That there is a great demand for a cheap efficient milk substitute for calf feeding is admitted by anyone who has given the matter any thought. I found in England that a number of dairymen were successful in raising dairy Shorthorn calves on milk substitutes after they were about two weeks old. While connected with the Pennsylvania Experiment Station we tried some of these calf meals with grade Guernsey calves, but, for some reason, with very indifferent success. Later we experimented with a number of meals of our own composition and finally succeeded in making one that was fairly satisfactory. It was composed of, wheat flour, 30 pounds; cocoanut meal, 25 pounds; skim milk powder, 20 pounds; linseed meal, 10 pounds; dried blood, 2 pounds. At retail prices this mixture cost 3.2 cents per pound. A day's feed per calf was 2¼ pounds. With this ration we succeeded in raising eighteen calves during the winter of 1901-1902. I understand from the published reports of the Massachusetts Experiment Station that they have tested this meal with gratifying results. Dr. Pearson, of the University of Pennsylvania, has also used it successfully. While it may seem expensive in comparison with feeds like cotton-seed meal, for example, the total cost of raising a calf to weaning time was, in the Pennsylvania experiments, but about $7. The daily gain in weight with calves raised on this food was practically the same as with a similar lot of calves raised on skim milk, being about one pound per day.

The only other calf meal which, so far as I know, is used to any extent by dairymen in this country, is Blotchford's calf meal. While I have never used it myself, I understand that it is not a complete milk substitute for very young calves.

The Massachusetts Experiment Station has investigated the value of compounds of cod liver oil, oleomargarine and sugar as a calf food, and while the calves living on these artificial milks were superior to those subsisting on skim milk, they were not equal to those that had suckled.

A western experiment station reports an interesting experiment on raising calves on whole and skim

milk. The whole milk calves grew faster and looked much better for a time, but at the end of a year, after both lots had settled down to rations other than milk, those that had been fed whole milk could not be told from the lot that were raised on skim milk.

From what has been said, which is based upon the experience of a great many calf feeders, we are forced to the conclusion that skim milk is the safest, cheapest, and the best food for young calves.

While skim milk is a most excellent food upon which to raise calves, it is not one upon which veal can be satisfactorily produced. In the first place, it lacks the fat-forming constituents, and, in the second place, it must be fed in an artificial manner, or, in other words, it cannot be suckled, which is most essential in producing a high class veal, even with whole milk.

Manner of Feeding.—Much depends not only upon the condition of the milk when it is fed, but also upon the manner in which it is fed. Most feeders agree that the milk should be sweet, and heated to a temperature of nearly 100°. It is further essential that the vessels from which the milk is fed should be sweet and clean. In consequence, the best are those made of metal. It is needless to say that calves should be fed regularly. Most of us if we do not get our meals regularly have headaches which hinder us, to a greater or less extent, in doing our regular work. If a calf is not fed regularly, it worries and eats too fast when it is fed, both of which tends to prevent rapid growth and development.

There is another phase of calf feeding upon which there is comparatively little data. I refer to the value of milk in the production of veal. In butter producing sections there are times in nearly every year when the net price of butter falls below the real cost of production. At such times the dairyman can often save himself a deal of labor, besides getting more for his product, by vealing his surplus calves. A few years ago the Experiment Station of Pennsylvania made a somewhat extended study of the value of milk in the production of veal, and, as the results were obtained from trials with two lots of calves fed two different years, they may be considered reliable.

In the experiment the milk was weighed, sampled, and fed from a pail. The butcher who handled the veal expressed the opinion that the calves were not so good as they would have been had they suckled the cows instead of being fed. The experiment was conducted in such a way that it was possible to determine the value of the calves and, hence, the value of the food they had consumed from the time they were four weeks up to the time they were six weeks of age. The milk fed in these trials averaged to contain about 4% of fat. Butter is estimated on the basis of adding one-sixth to the butter fat.

When the calves were four weeks, had they been sold for 4 cents per pound, shrunken weight, it would have made the milk worth $1.41 per hundred-weight, and the butter 31.2 cents. If the calves had been sold for 6 cents per pound, as they would, about this time, they would have paid $1.69 per hundred-weight for the milk and 37.3 cents for the butter it contained. If kept until they were five weeks old and sold under the same condition, they would have paid 94 cents or $1.41 for the milk consumed and 21 cents or 31 cents for the butter it contained. If the calves had been fed up to six weeks of age, the price for milk would have been 89 cents or $1.33 per hundred-weight, and 20 cents or 29 cents for the butter it would have made. Considering the average price of milk and butter, these figures may be considered very satisfactory, and doubtless they would have been more so had the calves been of a better quality and suckled the cows, instead of being fed from a pail.

Weaning.—The cost of raising a calf depends a good deal upon when it is weaned from milk and put upon a ration of hay and grain. While calves may make better use than pigs of skim milk, it is evident that there is a time in the calf's development when it ceases to use skim milk to advantage. My own experience has led me to believe that when a calf has reached the age of from 90 to 100 days, it will do as well ultimately without milk as with it, and that under ordinary circumstances food can be supplied in a much cheaper form. I am also of the opinion that a calf will do much better, and that it will be economy to keep it in the barn during the first summer. It will then be protected from heat and flies, and be well fed during a period when liberal feeding is essential to its best development. A calf thus handled will not only be much larger than it would have been had it been obliged to forage for a living, but will be much better fitted to give a good account of itself as a two-year-old in the dairy. I believe it is better business to feed our calves for the first year in such a way that they will be large and abundantly able to do a cow's work in the herd with the commencement of their second year than it is to scrimp them so that they will not be sufficiently developed to begin their work as cows before they are from thirty to thirty-six months of age.

A paper of this kind would not be complete without some reference to calf stables; not only because a calf's stable of itself has a great influence upon the vigor of the animal, but because it has an important bearing upon the amount of nourishment derived from food consumed under different conditions of stabling. It is well known that for a time an animal will gain weight faster in a dark stable than in a well lighted one; after a while, however, the cow or calf kept in a dark stable will cease to gain flesh and go back. This is one of the strongest arguments for keeping our calves in light, well-ventilated stables. Again, a well-lighted stable tends to make animals more resistant to disease. A calf that is kept in a well-lighted place is more apt to have better care than the one that is tucked away in some dark corner. Sunlight tends to prevent dampness, lice, and scours, three of the greatest evils to which young calves are liable. For fastenings I prefer a loose box to tying with a rope or fastening in a stanchion.

Whatever system of fastening is used, much attention should be given to the calf's bed. A dry bed is of as much importance as the feed. The best results cannot be expected without a liberal supply of both. A calf can stand a low temperature and do well if it is kept dry and is loose so that it can move around. A dry well-lighted stable is much better for all kinds of stock than a dark, illy ventilated one.

Calf Ills.—No dairyman has failed to have more or less experience with the diseases to which young calves are specially liable. The worst, perhaps, and by far the most common, is the scours. The treatment of this disease will depend upon its cause; the most frequent one is without doubt indigestion. This is produced either by over feeding, feeding cold or sour milk in filthy vessels, or by drinking abnormal milk from its dam. Nearly every one has a different remedy, but the one out of the many I have tried, is, after removing the cause and cutting down the feed, to give fifteen grains of subnitrate of bismuth every three hours until the trouble has ceased. A raw egg or two, given at intervals of four or five hours, aids in arresting the disease, as it not only soothes the irritated digestive tract, but affords nourishment as well. I have frequently been obliged to feed a calf milk from some other cow than its dam when her milk was acid because of some abnormal condition of her system.

Another trouble not infrequently met with in calves is one that is produced by their drinking their milk rations in two or three gulps. The result is that the animal becomes pot-bellied, the coat is staring, the droppings are dirty white and are of a salvy nature, and finally the calf stops growing. A remedy that has proved satisfactory in many cases is to use one of the many calf feeders now on the market, or, in other words, make it impossible for the calf to drink so rapidly. But a short time is generally required to effect a complete recovery.

Another feature that cannot fail to impress everyone who has had to do with this part of farm work is the individuality of the calves themselves; the food and treatment upon which one calf will thrive will not do for the one next to it. Calves differ in a marked degree in their inherent vigor, in their tastes, and in their capacity to assimilate food. I know of no reason for these variations, but we must recognize them. In consequence, no definite rules can govern the feeding of all calves. We may understand the laws of nutrition, but unless we know how to apply them to individuals we shall not make successful feeders.

This remark leads to the conclusion of my paper. We have discussed the calves and their food, and now for a few moments we turn our attention to the feeder. He is the one to whom we look for results. We may have studied the laws of nutrition and may be able to talk learnedly about the amount of protein a growing calf needs, and yet know nothing about raising one, while some boy may make a calf thrive with but little feed, seeming to know by intuition what and how much is best for each animal in his charge. He likes calves, he knows them individually, and they know him as a friend. In other words, the feeder must not be a mere theorist, but must have a natural love for and experience in his work.

FRUIT MARKETING.

Struggle for the British Apple Trade.

Mr. Rufus Fleming, United States Consul at Edinburgh, Scotland, reports an interesting struggle for control of the British apple trade. He says that during the past six months American exporters have met but little competition in the United Kingdom from either Canada or Australia. The quality of American apples has been excellent and they have commanded good prices. Newtowns (California?) sold recently as high as $12.15 a barrel and Oregon as high as $6.15 a bushel. Colorado packers have sold their best grade for as much as $4.85 a bushel. Yet the first consignment of Australian apples—which in previous years sold at extraordinary prices—sold in London a week ago at $2.55 to $4.35 a bushel. This seems to show that the Australian apple cannot gain permanent favor in this country in competition with the superior American fruit. It will find a market, but at comparatively low price.

A Canadian Plan.—It is announced that Canadian apple shippers have formed a combination with the object of controlling the British markets by dealing directly with small fruit merchants, and thus taking the trade out of the hands of the wholesale commission firms. On this subject a fruit-trade expert says:

"Last year the Canadian apple export trade sustained a complete check, and American merchants monopolized the business in the leading English cities. Alarmed at the progress made by the Americans, the colonial fruit men at once planned the new combine, and Canadian apples for the first time are to be shipped to British ports on co-operative lines. Several associations in Canada have banded together under an agreement to collect and market their members' fruit uniformly. A representative of the colony informs us that over 150,000 bushels of apples will arrive during the present year under the new system. Should the venture succeed or prove anything like as satisfactory as anticipated, the following year a quarter of a million bushels of Canadian apples will be consigned to the English markets by the officials of the combine. But the most surprising part of the affair is that none of these enormous parcels of fruit are to be sold on commission. They will be offered outright at a price to be fixed, so that the aim of the combine is to effect a revolution in the system of distribution. The dealers predict failure for the new movement. Naturally they are strongly opposed to the action of the combine and consider it an attempt to interfere with the settled systems of distribution. If the movement succeeds, the dealers say, a serious blow will be struck at the market commission system. Already a market combine to check the effect of that of the Canadian shippers is talked of.

"For some years the colonial exporters have studied the distributive methods in vogue in the English markets, but it is only this year that they have decided to act upon a plan specially worked out in England by a well-known expert for the purpose of insuring increased demand and sales for Canadian apples in English cities and towns. It is expected that by the end of the year Canadian apples of superior quality will be found in abundance in every town and village throughout the four kingdoms. The fruits are to be of high color and good size. They will be put up in special boxes and barrels, but whatever the size of the packages the quality of the apples is to be well maintained. Upon inquiry we find that several of the most important distributive firms in the Midland and Scottish markets oppose the attempt of the Canadian combine to disorganize the present systems of disposal utilized by wholesale commission firms."

Opposition.—As might be expected, English apple growers also are showing a very strenuous opposition to the combine of Canadian exporters. It is evident that in the coming season there will be a severe struggle in this trade. American shippers are not expected to yield their strong position in British markets without a vigorous effort to defeat the plans of the combine, and the sympathy and co-operation of most of the commission houses will be a great aid to them. Their best aid in this competition, however, will be a careful maintenance of the quality of their shipments at the high standard of the past season.

Bermuda Grass Comes to Stay.

To the Editor:—Bermuda grass cannot be permanently eradicated, and, Mr. Editor, you might just as well settle that question for your readers once and forever. Anybody that knows anything about Bermuda grass knows that. Suppose a man, as Chas. J. Schmid advises, should cart off 2 or 3 feet of his land to get rid of the grass. He cannot cart off his neighbor's land, nor the land from the street or the public road adjoining his property, nor the ditch from which he irrigates. In a section of country where Bermuda grass is to be found at all, it is growing more or less everywhere, and making seed and creeping out in all directions all the time, except where there is a cement sidewalk or an asphaltum street or highway 6 inches thick without cracks. So it is only a question of time until it will be back on the ground where the dirt was carted away.

I know men who have spent hundreds of dollars on lawns not much bigger than my carpet and have given up in despair. They have eradicated the grass several times, but it won't stay eradicated. These men irrigate their lawns from ditches. If there were only one spot of Bermuda grass and a man would cart off the ground from that, or take the roots out as suggested by L. H Garfield in the issue of June 10th, and had a place on the moon or somewhere else to put the roots, he might eradicate it.

Of course it can be kept down by constant cultivation. Where one has good land and water and can raise two crops a year, and will plow, cultivate and hoe the ground ten or twelve times a year, the grass can be kept out. But whenever he stops that cultivation it will come again.

No, there is no use to "fret about it." Just let it alone and make the most you can out of it, unless you desire to adopt the eternal cultivation plan. It furnishes considerable pasture for dry stock, but it will not compare with alfalfa.

It makes a farmer sick to be compelled to watch his $200 an acre land while it is gradually, but surely, being taken by Bermuda grass, and many a farmer in Kern county is compelled to do that. Bermuda grass has come to stay, and don't you forget it.

Bakersfield. A. E. Beckes.

Agricultural Review.

Alameda.

APRICOT AND OAT CROP.—Niles Press: John G. Mattos, Jr., of Centerville reports a great deal of rust in the growing oats. This is especially the case between Haywards and Mt. Eden. The apricot crop, however, promises to be large and remunerative.

Butte.

CROP OUTLOOK RATHER LIGHT.—Oroville Register: Ex-Senator W. A. Shippee says the crop outlook is rather light. When the winters are warm and mild the grain crop is not as good as when there is considerable cold weather. During the past three winters the weather was mild and in consequence the crop was light. Speaking of the vast adobe section, he said he did not think this land could be profitably irrigated without the land being drained, and land was not valuable enough to drain it by means of tiles. When the population became dense and land was of greater value, then this land would be both drained and irrigated and would produce large crops. He believed the weather conditions had more to do with the poor crops than the wearing out of the land.

WHEAT HALF USUAL HARVEST.—Gridley special to Sacramento Bee, June 9: Harvesting has begun in this neighborhood, and the steam outfit of H. A. Woodworth commenced cutting oats today in a field near town. Barley is ready for the machines, too, and in a few days the barley harvest will be in full blast. Crop conditions are not encouraging. Many fields of wheat on the adobe lands northwest of this place will yield light crops, and from everywhere come complaints of rust. With favorable weather during the next two weeks the wheat crop of this vicinity will make half of an average crop.

ORANGE MEN ORGANIZE.—Oroville special to Sacramento Bee: The Butte county orange growers met in the court house and completed their organization. The association will be known as the Butte County Citrus Association, and incorporated under the laws of California. A form of contract with the California Fruit Exchange was agreed upon and by-laws adopted. Numerous local growers have subscribed as members of the association, and the committee will now work to bring non-resident growers into the organization.

Calaveras.

CATTLE THIEVES DETECTED.—Stockton Mail: About three weeks ago Andy Shields, in company with a helper, was upon the San Antone, surveying near Sheep Ranch, Calaveras county; one night it rained and his transit got wet. The next morning Shields was adjusting it when a shot was heard. Nothing was thought of it and he went on with his work. Later Shields sighted his transit off across the country, when he noticed two men about a mile away skinning a beef. He recognized the n as two men living up there, and calling his assistant told him to look through the glass; the man looked and told Shields who they were. He also watched the two men skin the beef, dig a hole and bury the hide, take the hindquarters to their cabin and then drive a lot of hogs down and let them devour the rest of the slaughtered animal. Shields and his companion then returned to Sheep Ranch, where they hunted up J. Cavagnaro, who owned the cattle, and told him what had transpired. Constable Jordan went out and found the hide where it had been buried, and then placed the two men under arrest. An attempt was made to settle the case by paying Cavagnaro $25 for the animal, but it is not known yet what will be the outcome of the case. The men arrested have plenty of cattle of their own.

Fresno.

WATERMELON ACREAGE. — Republican, June 9: Early this season the prospects were for a large and early melon crop. The acreage was unusually large and the warm spring weather was bringing the melons along finely. But the cool weather has put the crop back at least a week and there is a report that some of the fields are being damaged by a disease that is killing the vines. Fresno has for more than a decade been known as a watermelon center; in fact, a few years ago a closely organized trust was formed to handle the large crop. The average planting was about 1500 acres; last year, for special reasons, about 900 acres. This year at least 1800 acres were planted. The large fields that were formerly in the neighborhood of this city have been pretty well broken up, and many of the prominent citizens who were eager to coin money from the luscious fruit, A. V. Lisenby, F. G. Berry, Adolph Shields and others, are no longer in the business. The plantings are being pushed back toward the foothills and the loading is now being done at Clovis, Sanger, and as far south as Exeter. Most of the acreage is now in the hands of Armenians and is in small lots, though some holdings amount to 300 acres. Growers count about a carload of melons to an acre and thirteen tons to a car, so that if everything goes well with the crop there should be in the neighborhood of 23,000 tons produced. A comparatively small part of these are cantaloupes, none of these last being shipped to the bay. The melon crop normally ripens about July 1, but this year marketing will probably not begin before July 10.

Mendocino.

HOP CROP SHORT.—Ukiah Dispatch: The long continued cold weather has kept the hop vines back so that they are about a month behind ordinary year crops at this date. The growers are somewhat gloomy over the outlook, as not even a half crop can be secured this year. The increased acreage, however, will help swell the crop some. Before last year there were a little over 1000 acres of hops in this county, but about 500 or 600 acres of new hops have been put in since.

WOOL BRINGS GOOD PRICE.—Ukiah Press: Ed. Gambrel sold the Gambrel wool for 29½c. There were 3600 pounds, the clip of 856 sheep. The Gambrel wool is known as among the best in the county.

Madera.

POOR WHEAT PROSPECTS.—Modesto News: W. R. High has returned from his ranch in Madera county and he states that crop conditions down there are poorer than they have been for a number of years past. Harvesting is in progress on some of Mr. High's wheat and in some places it is hardly worth cutting, as on a portion of the land it will run not more than a sack and a half to the acre and there is no part of the ranch that will yield more than four sacks to the acre. To add to this, Mr. High says that his wheat is of poor quality and that a full sack will not weigh more than ninety pounds. One of his neighbors in Madera county is cutting wheat which weighs but eighty-five pounds per sack.

Orange.

BARLEY AND BEANS. — Anaheim Gazette, June 8: Three combined harvesting machines have already started work, and before the end of the week there will be ten or more in the field taking care of the large grain crop on the San Joaquin ranch. According to the estimates of the ranch managers, a total of 18,000 acres has matured a crop of grain this season, and this will yield from twelve to fifteen sacks to the acre. The whole crop will aggregate in the neighborhood of 250,000 sacks, an average yield for the ranch. From present indications the barley will be of good quality. Buyers are in evidence inspecting the grain, but are slow about making offers and contracting for large lots. In addition to the big grain crop, more than 3000 tons of hay have been cut on the San Joaquin from about 2000 acres, and 8000 acres of beans are maturing. The bean acreage is the largest in the history of the ranch, 7000 acres having been harvested last year. The outlook is promising for a big crop.

Riverside.

WORK FOR ALL.—Enterprise: Several Riverside business men who have recently returned from trips to small towns and villages in the "back country" report grain to be almost as tall as a small man, and predict a big crop. They say there is no reason for any of the army of unemployed to loaf around the street corners during the next two months. The scale of wages in this country among the ranches is $2.50 per day and board, and the ranchers say they have had difficulty in getting farm hands at that rate.

San Diego

MONEY IN HENS AND COWS.—Escondido Times: Last week we were shown the monthly statement of a citizen who has only 100 hens and it showed that his hens had paid for all the store accounts of a family of several and there was over $1 coming to him. Another man assured us that fifty hens and one cow supplied a family of five with groceries.

San Joaquin.

PRICES OF NEW HAY.—Stockton Independent: The prices of new hay have been established on the basis of $8 per ton for wheat and the market decreases to $5.50 for oat, according to quality. Alfalfa is strong at $7 to $8 and barley is placed at $6 a ton. There is no demand yet for new hay, as about all that has been brought to this local market is loose. A few lots of new baled hay have been received and it was of very good quality. The presence of loose hay, which can be fed at once, has had a weakening effect on prices, but as soon as the bulk of the feed is baled the market will be stronger, though the dealers assert that they do not anticipate any big advance for weeks to come. The rain damaged the first cutting of alfalfa, but the second crop is unusually fine and the farmers are holding it at strong figures, as they know that it will be in demand soon. The indications are that this kind of hay will be almost on a parity with wheat or wheat and oat hay hereafter, so great will be the demand.

HORSES AFFLICTED WITH A TYPE OF INFLUENZA.—Stockton Mail: A disease akin to influenza and epizootic has made its appearance among horses in Stockton, and during the last few days Dr. Eddy, veterinary surgeon, has been called to attend a dozen valuable animals. It is important to check the malady as soon as the symptoms are noticed by the owner, for it is liable to become very serious if neglected. The influenza starts with sore eyes. Generally the groom fails to notice the inflammation until the eyes maturate and a discharge comes from the nose—watery at first, but afterward thickening and looking like the nasal discharge common in colds. A cough begins, the horse becomes languid, and then, perhaps as long as two weeks after the first symptom is noticed, a high fever sets in. If properly treated at the outset the disease is quickly checked, but if allowed to go untreated it becomes virulent, and the horse loses vitality and resisting force.

ALMONDS WILL BE A BIG CROP.—Record: This season promises to produce one of the largest almond crops ever harvested in this county, both because the season has been just right for almonds and because there are more almond orchards in this section than ever before. The nuts were not injured in the least by the frost or the wind, and they are now almost full size.

Santa Barbara.

RUST DESTROYS GRAIN. — Independent: Judge Brandt, postmaster at Santa Ynez, has for years farmed in the Santa Ynez valley, where he now cultivates a large tract of grain land. He states that the rust has injured more grain this year than at any other season within his recollection. With a few exceptions the early sown grain—wheat and oats—is practically ruined by rust, and in farms where from twenty to thirty sacks of grain should be yielded to the acre, now there will hardly be an average of five sacks. With late sown grain conditions are different and a fair crop will be yielded where plowing and sowing were delayed.

FREAK GRAIN.—Press: Barley, showing two and three heads to the stalk, is exhibited here. It was raised by Felix Mattei, the mayor of Los Olivos, who is an extensive rancher.

Santa Clara

APPREHENDED WHILE KILLING QUAIL.—San Jose Herald, June 7: W. O. Arnold, a deputy sheriff, apprehended S. Peirano of this city for shooting valley quail in the fields in the vicinity of Lucretia and Story roads. Arnold had for some time suspected Peirano of shooting quail out of season, and as this is a State offense and punishable with fine or imprisonment, he kept watch. His vigilance was rewarded yesterday, when he caught Peirano shooting the birds. Peirano was arraigned before Justice of the Peace Wallace, and entered a plea of guilty. Time for sentencing was waived, and in addition to a severe reprimand, the court imposed a fine of $25 upon the defendant, which was paid.

Solano.

WILL CLOSE SALOONS TO HELP ORCHARDISTS.—Vacaville special to Sacramento Bee, June 8: Beginning next Sunday, the saloonkeepers of this town will close their places of business on Sunday from 6 P. M. until Monday morning. This move is made for the benefit of the fruit growers, who, heretofore, had little help on Monday on account of the laborers being in no condition to work, having first to sober up from a Saturday and Sunday debauch.

Sonoma.

WOOL BRINGS 29½C PER POUND.—Healdsburg Enterprise, June 10: Geo. Jacobs, the well-known wool grower, received 29½c per pound for his spring clip, and the amount sold was close to 7000 pounds.

Stanislaus.

EXPERIMENTS WITH NEW DISC PLOW. — Modesto Herald: Four representatives of the big agricultural implement firm of Baker & Hamilton are in town conducting experiments with an improved disc plow. The largest disc plow heretofore put out was 24 inches in diameter and it cultivated to a depth of 12 inches. Working in sandy soil recently the new plow, which is 28 inches in diameter, cultivated to a depth of 17 inches and piled the soil, pulverized and loose, 12 inches above the normal surface. Four head of stock were employed on a one-disc plow and six head on a plow with two discs. The firm's representatives regard the experiment as very successful. They figure that the new plow will be much in demand for sugar beets and other root crops demanding a deep, loose soil.

BARLEY GOOD, WHEAT POOR.—The barley harvest is beginning in the Modesto section. Next week many machines will be at work. The crop promises to be the best for several years in all parts of the county. Wheat prospects continue poor in comparison with the expectations early in the season. While there will be failures, the yield will be so much smaller than was hoped for that it is quite a disappointment.

Sutter.

GRAIN PRICES.—Yuba City Farmer, June 9: While a few harvesters have commenced operations, no barley or oats have been delivered in this section as yet. The quality will not, according to all reports, be very good. Barley prices are opening up at from 90 cents to $1 per cental here and wheat from $1.30 to $1.50

OATS AS A CHANGE CROP. — During the last few years there has been increased planting of tame oats in Sutter county, the crop generally doing well owing somewhat to the fact, no doubt, that it being a change from wheat planting finds more substance in the soil for producing a different crop. The chief objection to oats is that they shell very easily and a north wind coming about harvest time blows them out to a considerable extent. The red oats appear to be the favorite seed for planting here.

PEAR ORCHARD LEASED. — Independent Dr. Jackson has leased his 75-acre pear orchard to Howard Reed of Yuba county for a term of six years. By the terms of the lease Dr. Jackson receives as rent one-third of the net proceeds of the orchard for the first year and one-fourth of the gross proceeds for the balance of the term.

Tehama.

EARLY APRICOTS.—Corning Observer: E. C. Sherwood of Henleyville has the earliest apricots of the season in Tehama county, the Newcastle being the first to ripen. They are selling readily for 3 cents per pound.

CHICKENS VS. GRASSHOPPERS.—Corning special to Sacramento Bee, June 10: For the past few days the grasshoppers have been doing considerable damage to W. N. Woodson's orange grove. After trying various ways and means to stop them without success, Woodson made arrangements with W. L. Lybeck, of the Maywood poultry farm, and to-day they have arrayed an army of 10,000 chickens against the grasshoppers, with gratifying success.

Yuba.

HAS 6000 LITTLE CHICKS —Marysville Democrat: A. W. Cutts of Live Oak has gone more deeply into the poultry business, probably, than has anyone else in this part of California. He has just completed the season's hatching with his big 4000-egg incubator and now has 6000 little chicks in his yards.

FIFTEEN PER CENT LOSS —Supervisor Morrison states that the Hessian fly, if such it is, is doing a great amount of damage in the wheat fields of Plumas and Linda townships, the best grain suffering most. In some fields the damage amounts to 15% of the crop. The grain stalks die at the bottom, leaving the wheat, now in the milk, to shrivel up and destroying it. The Hessian fly has never before made its appearance here.

BLOOD POISONING FROM SNAP OF WHIP.—Marysville special to Sacramento Bee, June 8: John Schlag, a well-known farmer and stock raiser of Sutter county, died in this city last night of blood poisoning, the result of being struck in the cheek a few weeks ago by the snapper of a whip, which he was himself handling to urge on a band of stock. Schlag was a native of Switzerland and seventy-one years of age. He was one of two of the surviving members of the old Marysville Lierdekranz Society, Charles Raish being the other.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

One and Two.

If you to me be cold,
  Or I be false to you,
The world will go on, I think,
  Just as it used to do.
The clouds will flirt with the moon,
  The sun will kiss the sea,
The winds to the trees will whisper
  And laugh at you and me.

But the sun will not shine so bright,
The clouds will not seem so white
  To one as they will to two;
So I think you had better be kind
  And I had best be true,
And let the old love go on
  Just as it used to do.

If the whole of a page be read,
  If a book be finished through,
Still the world may read on, I think,
  Just as it used to do;
For other lovers will con
  The pages we have passed,
And the treacherous gold of binding
  Will glitter unto the last.

But lids have a lonely look,
And one may not read the book—
  It opens only to two;
So I think you had better be kind
  And I had best be true,
And let the reading go on
  Just as it used to do.

If we who have sailed together
  Flit out of each other's view,
The world will sail on, I think,
  Just as it used to do;
And we may reckon by stars
  That flash from different skies,
And another of Love's pirates
  May capture my prize.

But ships long time together
Can better the tempest weather
  Than any other two;
So I think you had better be kind
  And I had best be true,
That we may together sail
  Just as we used to do.

—Will Carleton.

Miss Dorothea's Burglar.

"What's it all about, anyhow?" demanded the other men in chorus. "What have you been up to? There are sixteen different rumors, with a dozen variations of each rumor, and we'd like to know about it. This combination of police officers, burglaries and young women with six-shooters sounds interesting."

The young man in the gray coat chuckled. "Any of you know a Miss Stewart—Dorothea Stewart? Well, I know her. I didn't know her twenty-four hours ago, though. You see, my people moved last week into a house on the next street, and it required mental effort for me not to turn down the old familiar avenue on my way home nights, as I've done for the last five years.

"Last evening I dined down town and it was 10 o'clock when I got off at my station. I was thinking hard over a law case and as I fumbled for my key I noticed that the door was on the latch, and so I walked right in, turned on the electric light in the library and then stood still in a perfect daze, for it was an utterly strange room—not a piece of furniture I'd ever laid eyes on. Just at this point there was a voice behind me—a determined voice.

"'Don't you move an inch,' it said, 'or I'll shoot!'

"Naturally, this didn't incline me toward any violent gymnastics, so I gave the best indication I know how of a wooden Indian. Some one made a large circle about me, and there in front of me, a safe rod away, stood as pretty a girl as I care to see, and maybe her eyes didn't look dangerous! To my horror she was pointing an ugly revolver in my direction and her hand didn't tremble, either. I stared like an idiot as I tried to figure out what it all meant, and then it dawned on me and I found my tongue.

"But she didn't give a chance to explain. 'I suppose,' she remarked icily, you are what they call a gentleman burglar. Hold up your arms, by the way—not that I'm afraid of you, but that's the proper thing to say when you point a gun at any one, isn't it? I've always wondered what I'd do if a burglar got in the house when I was alone, and I might as well tell you I'm not one particle scared.' It wasn't bravado—she was simply surprised at her own nerve. 'You are doing very well,' I said politely. 'But if you'll let me explain—'

"She laughed outright at that. 'Don't you dare lower your hand,' she remarked sternly—I had forgotten my orders—'and you needn't bother to waste breath, for I'm not silly enough to believe you. When a man is found promenading through another person's house there isn't much to be said, I believe. I suppose that you are walking in your sleep and aren't responsible, or else you have a starving wife and eleven sick children, haven't you?'

"'Dear me, no!' I protested, indignantly. 'I'm not a burglar, really. You see, I—"

"'Your right hand a trifle higher,' she interrupted. 'Really, I should think a man who looks as intelligent and apparently honest as you do might find something else to do besides turning criminal. Aren't you ashamed of yourself?' 'Not a bit,' I answered, more indignantly. 'If you keep quiet a minute I'll try to explain.' She tossed her head higher and gave me a crushing stare. 'Really,' she said, 'I'm not used to being lectured by so gentlemanly a housebreaker. You turn around and march to that telephone and ring up the police station. If you make a move toward your pocket, remember, I will shoot.' 'I've no revolver,' I said angrily. 'Oh, no,' she said with cutting sarcasm. 'Ring up, please.'

There was nothing left to do but obey orders, so I telephoned, repeating her words under pain of being instantly blown full of holes, and summoned the blue wagon.

"I was so disgusted at being in this ridiculous situation and so provoked at her for refusing to let me tell her how it happened that I glared quite as fiercely as she did. And there we stood till the police force overwhelmed us My arms were ready to fall off, but that girl refused to let me drop them. I wanted to box her ears, and the only reason that I did not was that her hand on the revolver never shook.

"'This man broke into my house,' she told the first policeman who rushed in, and then she collapsed into a chair and had hysterics.

"'I did not!' I insisted, and the fates were with me, for it was Mulvaney, who has known me ever since we moved into the neighborhood. 'Tell her, Mulvaney,' I said, with all the condescension and biting sarcasm I could find, 'that up to a week ago I lived here and force of habit led me to march into the old place to-night, instead of where I really live, but that I'll forgive her.'"

"'He's right, ma'am,' said Mulvaney.

"Well, say, do you know there's something infernally pleasant in having a young woman who has walked on you suddenly plunged into such depths of apology that she's ready to weep on your neck to prove her penitence? Of course, Miss Stewart didn't really do that—but I've got an awfully long start.

"Yes, I asked if I could call, and I'm going up there to-night."—Chicago News.

The Modern Nerves.

"People are apt to sacrifice the good as well as the bad in changing their fashion of living," remarked a woman of the olden school recently. "There were many excellent ideas and rules in vogue in my childhood that have been swept away by the incoming tide of other manners and customs. Take, for instance, our grandmothers' regimen for health founded on their knowledge of beneficial herbs and the traditions of experience. We certainly went far less to the doctor's in those days, and I think our general health was better. At any rate, nerves, which seem more or less to be the root of all evil in our latter-day ailments, were then practically unknown. There was a variety of spring tonics administered to us in a pleasing form, I remember. One was a large, white porcelain pitcher of cold sassafras tea standing in the hall, with glasses around it, which we thought delicious, and of which we were allowed to drink ad libitum. I can remember now running in through the wide-open back door from our gardens, hot and grimy from our congenial toil, and rushing to the pitcher. And how good the cool, aromatic drink tasted, made doubly inviting by being taken through real drinking straws which our grandmother laughingly provided us with, saying that we would drink more of the water in that way and would take it more slowly.

"I suggested to my daughter last spring that she should start such a pitcher going for the children; but, of course, she had her own ideas and it was never done. This year one of her girls is going to one of the most expensive doctors in New York, and he prescribes about six glasses of mineral water a day and gives her some kind of bitters. The grandmother treatment, to my mind, was practically similar, much pleasanter and infinitely less expensive. Our food, too, in the springtime used to be somewhat chosen with reference to its health-giving properties; the vegetables known as blood purifiers were put before us and we were required to eat them. Dandelion greens were greatly esteemed for the liver in those days. One never sees this dish now on the table of well-to-do people, and yet it is an excellent vegetable and, properly prepared, is as good as spinach. The poor people recognize its good qualities and are picking it eagerly now on every roadside.

"Another fad of my mother's when I was a young girl was that the feet must be kept warm. When the furnace fires were allowed to go out, the floors, she contended, became chilly, and we were apt to go to bed with cold feet, so she had the maid bring in a couple of hot bricks every night to warm our feet on. I myself, however, think that the modern hot water bottle is a desirable substitute for the hot bricks. I visit at a country house where a hot water bottle is taken to each bedroom at night unless the weather is really warm, and I have taken great comfort from one on chilly nights in the late autumn and early spring.—N. Y. Tribune.

The Secret of Joyful Living.

It does not matter what you do in this world so that you do it well, so that you do it better than the majority, so that you do it effectively and successfully, says the New York Press. It is better to be a first-class washerwoman than a fourth-class singer, a good cook than a poor actress, a successful seamstress than a social failure. There is no woman so placed that she cannot find an object in life, something to do, in which she can excel and into which she can put her whole heart and soul; something to do which she likes to do, and which will take her mind off herself and put into her eyes the brightness and youth that we see in the eyes of the old lady who has accomplished something. The reason that women grow old more quickly than men is that they lose their interest in the race of life sooner. A man is kept young by his intense enthusiasm for his work and the accomplishment of his aims.

The woman with a house on her hands and no servant to do her work may sigh because she has no time for higher aims. But it is not higher aims that she needs. Any aim will do. What better object could she have than that of making her home the most beautiful, the brighest, the most artistic and the most comfortable possible? What better study could she have than that of domestic economy? If she would do her tasks not because she must, but because she she wants to do them, she would soon find her household running on such smoothly oiled wheels that time would go all too swiftly for her and she would be the envy of all her friends.

The woman with the big family moans that she cannot find a moment to devote to her aims. Yet in that very family lies her life work. To bring up better children than those she sees about her, to prepare her girls to make good wives and her boys to do great things in the world, ever looking forward to the day when she can gaze proudly at the brood which she has brought up better than others, and say to herself "they are my work," is certainly an aim to keep one's blood tingling with the desire for accomplishment and the joy of doing.

There would be no nervous headaches, no blues, few domestic tragedies and no failures in this life if every woman would make up her mind early in life to do something worth while. All the evil in the world comes through the imp that puts mischief into idle or disinterested hands. The young girl who takes no interest in her school life or her home life is the one who runs off with the rake; the young wife who drifts aimlessly on and is without an object in life is the one who runs away from her husband; the woman who takes no interest in her home and children is the one who brings up criminal sons and daughters. It is not that any of these do not do enough; it is that they have no heart in the doing of anything, no enthusiasm, no definite object. They are taking life merely as a pastime or as a duty, whereas life is an opportunity and a joy.

Variety in Food.

"The importance of a continual change in diet cannot be too often impressed on the housewife," says a teacher of domestic science. "Physiologists say that the correct proportion of foodstuffs necessary to the human system can only be obtained from a number of different dishes. In normal health the body must have a certain amount of starchy foods, such as rice and similar things. It must also have foods that contain a large amount of proteids, such as eggs, milk, cheese and meat. A variety of fresh vegetables and fruits is also necessary, especially in summer, because of the salts and acids they contain. In winter there are also innumerable foods that have each a special use. While they may not always give nourishment, they have qualities that assist in the digestion of those foods that do nourish.

"The Chinese cooly, whose principal article of diet is rice, must digest an enormous quantity in order to get the full amount of proteid needed, and consequently his digestive organs are badly overtaxed, while he gets altogether more starch than is necessary.

"It is the same way with bread and other foods. No one variety should be used in too large quantities. Yet in many families this is the case, some housewives serving an undue amount of meat, while others serve grains or bread in excess. There are varying opinions as to whether or not a long menu, with small services of each dish, is better than a more limited one, with large services of each dish. Of course, much would depend upon the suitableness and wholesomeness of the different dishes.

"Some old-fashioned people still retain the idea that what one's appetite craves is just what one must not have, and what is delicious is always unwholesome. Sensible people, however, now believe the opposite is often the case.

"When a person tires of a certain food it is probably because his system does not need it, but requires something quite different. One's appetites are apt to be good judges in this matter. The animal selects the food which is best for him through what is known as instinct. Possibly man might be wisely governed in the same way. Those persons are usually well, mentally and physically, who enjoy their meals and yet do not think too much about them. Certainly they are better off than the poor human being who is always afraid of his food, and eats unappetizing dishes because they are supposed to be wholesome. One looks back with pity to the children of the last generation, who were forced to eat oatmeal continually in big doses by over anxious mothers, when their little appetites were hungering for sugar plums. Though sweets are not good in excess, neither is oatmeal good in excess, especially when a loathing is acquired for it, as could not fail to happen under the conditions mentioned.

"When the different foods on the family table are dressed in new and attractive ways from time to time, and no one kind of dish is served too often, the appetite is not only quickened, but the digestive powers have easier work to do."—N. Y. Tribune.

Domestic Hints.

HARVARD SNAPS.—Mix together one cupful of granulated sugar, one of molasses, one-half cup of butter, a third of a cupful of lard, and two eggs; then add a teaspoonful of salt, two teaspoonfuls of ginger, one teaspoonful of cloves, a teaspoonful of soda dissolved in one-half cupful of hot water, and flour enough to roll out well. Cut into rounds and place in floured tins to bake in a moderate oven.

FRIED CELERY.—Wash and scrape the desired number of celery stalks; then cut into pieces 4 inches long. Cook until tender in salt water. When done remove from the water, drain, and spread to dry in a cool place. When the stalks have become firm dip them into a batter made of one cupful of flour sifted three times, a half teaspoonful of baking powder in it, and wet up with a beaten egg and whatever milk may be required. Fry a golden brown in hot lard.

FRENCH LETTUCE.—Have your lettuce crisp and cool; cut it fine; don't chop; for a dish of lettuce enough for six people, boil hard four eggs, and cut them up fine, whites and yolks together; then make a dressing of melted butter the size of an egg, three teaspoonfuls of French white mustard, a couple of teaspoonfuls of sugar; mix thoroughly, and if you like, add a little olive oil; pour into this a half teacup of white wine vinegar, and stir into the eggs; mix lettuce and dressing together, garnish top with slices of hard-boiled egg, and the lettuce is ready to eat.

JELLIED CHICKEN.—A cold chicken in the form of jellied chicken makes a good supper dish. Put an ounce of gelatine in a pint of warm water on the back of the stove, and occasionally stir until it is dissolved. Then add a pint of chicken broth or boullion to it, and a high seasoning of salt and pepper. While the gelatine is being dissolved cut all the chicken off the bones. Place the meat in an earthen mould. Pour over the chicken the broth and gelatine, straining first. Press the meat down and let the broth cover it completely. Place a weight over it, and when the chicken is thoroughly jellied turn out of the mould and serve in thin slices.

BAKED FISH.—An old-fashioned way of baking fish au gratin has never been improved upon. Skin the fish, starting at the head and drawing towards the tail, cut off the head and take out the backbone. This leaves two large pieces of fish. Prepare a sauce by lightly browning a minced slice of onion in two tablespoonfuls of butter. When the butter bubbles, stir in two tablespoonfuls of flour and add stock or water to make a creamy compound. Season, and add the juice of half a lemon and half a tablespoonful of minced parsley. Lay the fish on a buttered baking tin and pour the sauce over it. Sprinkle thickly with breadcrumbs, put bits of butter over, and bake in a quick oven for about twenty-five minutes. Tomato sauce is recommended with this.

Hints to Housekeepers.

Dandelion salad is rather too bitter for the ordinary taste, but if the young leaves be mixed with lettuce the result is a piquant salad full of tonic qualities.

Alcohol sometimes causes bluish stains to appear on the lamp of a chafing dish or teakettle. Simply rubbing with a cloth moistened with ammonia is said to remove the discolorations.

A small boy has discovered that old corks cut into cubes or bricks may be used as building material for miniature castles and fortresses. These cork bricks do not look unlike some kinds of stone.

Mothers of growing girls are always glad of suggestions as to the lengthening of their ever-shortening dresses. One woman who has grown tired of the customary ruffle now cuts a ripple, opens the lower edges of the skirt's hem, inserts the ripple and stitches it fast.

Women who find time hanging heavily on their hands may provide themselves with extremely pretty hat pins at very little cost. It is only necessary to buy the common hat pins, crush off the glass beads and replace them with Indian heads. The latter can be attached with sealing wax or solder.

In a country cottage few things are more picturesque than a Dutch door. It is practical, too, for the upper half can be opened in the evening to admit the cool air, while the lower half is closed, shutting off the too inquisitive gaze of the passerby. It is said that the Dutch cut their doors in two in order to prevent their dogs and chickens from walking into the house when they admitted the air, but whatever their idea in building them they certainly succeeded in making something ornamental and suitable for a country cottage.

When a tailor has a jacket to reline he first rips out half of the old lining for a pattern, leaving the other attached as a guide. Then he cuts the new lining from the pattern and sews it up, leaving the under-arm seams open. He bastes in one-half of the lining, fitting it along the fronts and bottom of the jacket, and then rips out the half of the old lining that was left attached, and bastes in the remaining half of the new. Now he hems the new lining around the bottom, neck and fronts, and last of all he does the armholes and under-arm seams, into which any excess of material can go. After this is done the linings of the sleeves are put in.

Sheets often get badly worn in the center before they show any signs of wear at the sides. Careful housekeepers often "turn" such sheets when they are made of double width goods, simply tear them down the center, hem the edges with a narrow handkerchief hem and sew the outer selvages together. A carefully "turned" sheet lasts more than twice as long as a sheet that is left to wear itself out as it was first made. It seems like folly, however, to "turn" towels and other similar articles, as over particular housewives so often suggest. Except for the woman who has little else to do, it is a waste of time.



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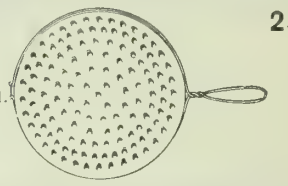
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The Markets.

San Francisco Produce Report.

San Francisco, June 14, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.		Sept.	
Wednesday	$ 88½@	86	82⅞@	81
Thursday	87⅞@	86⅝	80½@	81⅝
Friday	85⅛@	86⅝	81 @	82
Saturday	86¼@	87	81⅜@	82⅜
Monday	87⅛@	85⅜	83 @	81¾
Tuesday	86¼@	87⅛	81⅞@	83

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	51 @ 50⅜	50⅛@49¼
Thursday	50⅛@ 52⅛	49⅛@ 50⅜
Friday	52 @ 51¼	50¾@49¾
Saturday	51⅛@ 57¼	49⅞@ 50⅝
Monday	51¼@52½	50⅛@51
Tuesday	51⅞@ 52⅞	50⅜@51¼

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Thursday	$1 35¾@——	$ ——@——
Friday	1 35¾@——	——@——
Saturday	1 36⅝@1 36⅜	——@——
Monday	1 36¼@——	——@——
Tuesday	1 36⅝@1 36¼	——@——
Wednesday	1 36 @1 34¾	——@——

Wheat.

The local market has been unfavorable to the buying interest, with stocks light and no prospects of offerings being heavy very soon. The wheat crop in this State is disappointing, both as to quantity and quality, and it is not likely that low prices will be current for good to choice wheat in this market at any time during the season now opening. Last year California did not produce enough wheat for home needs, and the same is apt to be the case this season. The wheat crop in this State for 1904 aggregated only 326,700 tons and is the lightest on record for the past thirty years, the next smallest being in 1898, the crop that year being 327,060 tons. The largest yield was in 1882, when 1,441,540 tons were harvested, affording over a million tons for export. Since 1876 there have been eight California wheat crops exceeding a million tons, the last one being in 1891. The speculative market this week touched the highest point of the year for December wheat. This option in January last opened at $1.33½, sold down to $1.27⅞ in February, fluctuating between $1.27 and $1.29 in March, with little change in April, but in May began to harden and advanced to $1.36, since then touching $1.36⅝, but today sold down to $1.34¼ and closed at $1.35.

California Milling	$1 52½@1 57½
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 45 @1 50
Oregon Club	1 47½@1 52½

PRICES OF FUTURES.

During past week the range on options was: December, 1905, delivery, $1.36⅝@1.34¾.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat sold at $1.36@1.34¾.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s8d@6s10d	–s–d@–s–d
Freight rates	17¼@–s	22½@–s
Local market	$1 27½@1 32½	$1 50@1 55

Flour.

For well and favorably known brands values are ruling steady, with offerings only moderate and fair movement for this time of year. There is flour on the market, however, which the sellers term choice, and only $4 per barrel is asked. This is less than any flour can be produced for to-day.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Buyers are not operating very heavily in this center, waiting for prices to touch lower levels. Feed barley has sold the past week as high as $1.10 on the spot, and there was little obtainable under $1.05, although deliveries within a week were offered at $1 per cental, and at still lower figures for month of June. Advices in the main are that the barley crop is averaging good throughout the State, but there is likely to be a good shipping demand to carry all the barley that can be spared. That farmers generally will be willing to accept as low figures as bear operators are now calculating on is extremely doubtful. Transfers of December barley were recorded this week down to 86⅜c. This option a year ago was selling within range of 95¼@96½c., with the spot market then fully as low as at present.

Feed, No. 1 to choice spot	$1 02½@1 07½
Feed, fair to good, to arrive	97½@1 02½
Brewing, No. 1 to choice old	——@——
Chevalier, No. 1 to choice	——@——
Chevalier, common to fair	——@——

Oats.

There are very few oats of any sort now in stock here and the market is difficult to quote. While stiff prices are now being asked—$1.50 to $1.65 for fairly good to choice White—and in a small way are being realized, there are no bids obtainable in the wholesale market at anything near above figures. For a round lot of good old Red oats $1.25 was recently offered. On new Reds for near future delivery $1.20 has been refused. A carload of new Reds, the first of the season, sold yesterday at $1.40 to a local milling firm.

White oats, fancy feed	$1 55 @1 60
White, good to choice	1 50 @1 55
White, poor to fair	——@——
Milling	——@——
Black oats	1 40 @1 50
Red, fair to choice new	1 25 @1 35

Corn

There have been free receipts of Eastern corn the past week, but there is not much domestic product arriving. The imported represents prior arrival purchases by dealers and is not being crowded to sale. California Small Yellow is being offered a little more freely than for some time past.

Large White, good to choice Cal	$1 45 @1 50
Large Yellow	1 40 @1 45
Small Yellow	1 50 @1 60
Egyptian White	1 32½@1 37½
Egyptian Brown	1 27½@1 32½
Eastern, sacked	1 37½@1 47½

Rye.

Stocks are light and include little which can be termed strictly choice.

Good to choice	$1 55 @1 65

Buckwheat.

In the absence of offerings, values are for the time being wholly nominal.

Good to choice	$2 00 @2 25

Beans.

Market is firm for all good to choice beans, but more particularly so for Limas and all colored varieties. Pinks are in light stock. Reds are in such limited supply as to be hardly quotable.

Pea, good to choice, 100 lbs	$3 25 @3 50
Small White, good to choice	3 20 @3 40
Large White	2 50 @2 90
Pinks	3 50 @4 00
Bayos, good to choice	3 50 @3 80
Red Kidneys	4 50 @5 00
Reds	6 00 @6 50
Limas, good to choice	5 75 @5 90
Black-eye Beans	3 00 @3 15

Dried Peas.

The inquiry at present is mainly for damaged stock at low figures, this sort being taken for feed.

Green Peas, California	1 75 @2 25
Garbanzos, Large	3 25 @3 50
Garbanzos, Small	3 00 @3 25
Niles	1 50 @2 00

Hops.

The same inactivity before noted is being experienced in the local market, with growers and dealers apart in their views as to values. To buy freely it is likely as high as 35c. would have to be paid, while under selling pressure, 25c. or less might have to accepted. The New York Producers' Price Current says: "The market generally continues slow, and in absence of important business the tone continues to show a softening tendency and the few sales reported in all sections have been at somewhat easier prices. On the local market a few lots of choice Pacific have sold at about 26c. and a few States on about the same ratio. Late last week a sale was made here by one dealer to another of 100 bales of medium to prime Sacramento hops at 24c. From the Pacific coast holders that are in the pool still talk firmly, but some business has been reported, including 400 to 500 bales of fair Washingtons at 22@22½c. and small lots of Oregons at 24@24½c. net to growers. From Oregon we hear that State had a soaking two days' rain followed by warm weather and the crop prospects are brighter. Warm favorable weather is also reported in Washington, and the vines making better headway. From this State growers claim very little damage from the late frosts, but owing to many missing hills the yield may not be any larger than last year. Late German advices report vines making good progress."

Good to choice nominal	26 @ 30

Wool.

Market presents fully as strong a tone as at any time the current season, but there is not much doing, as most of the clip has been disposed of and forwarded East. Within a week or two the clip of the Northern coast counties will likely all have been placed, some of it having been already contracted for at stiff figures. With this wool out of the way the market will be practically bare until Fall clip begins to put in an appearance.

SPRING.

Humboldt and Mendocino	30 @—
Northern, free	28 @29
Northern, defective	23 @26
Middle County, free	27 @—
Middle County, defective	23 @25
San Joaquin and Southern, free	26 @—
San Joaquin and Southern, defective	20 @24
Oregon, good to choice	27 @30
Nevada	22 @29

Hay and Straw.

The market is without quotable improvement. Demand which exists is principally for choice to fancy Old Wheat, and Old Tame Oat of high grade. Fancy Old Wheat brings $15 per ton, and for best Old Tame Oat $12 is readily realized. For good New Wheat hay $10 is about best figure named. New Tame Oat is quoted as low as $6@7 per ton. New Alfalfa is receiving at present scarcely any attention from buyers here.

Wheat, good to choice	$11 00 @ 14 50
Wheat and Oat	9 00 @ 12 50
Tame Oat, fair to choice	7 00 @ 12 00
Wild Oat	6 00 @ 9 00
Barley	7 00 @ 9 00
Alfalfa	—— @ ——
Clover	—— @ ——
Stock hay	5 00 @ 6 50
Compressed	12 00 @ 14 50
Straw, ₱ bale	35 @ 50

Millstuffs.

Bran and Middlings were held about as last quoted, with movement very moderate. There was a sharp decline in Rolled Barley. Market for Milled Corn was without appreciable change.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	21 00 @ 22 00
Middlings	24 50 @ 27 50
Shorts, Oregon	21 50 @ 23 00
Barley, Rolled	23 00 @ 24 00
Cornmeal	30 50 @ 31 50
Cracked Corn	31 00 @ 32 00
Oilcake Meal	33 50 @ 35 00

Seeds.

Little doing in this department. Wild or Indian Turnip, what is known to the trade as Rape Seed, is scarce and has been for some weeks, but now that the harvest season is on, it is likely there will be plenty of it soon, as not much is required to satisfy the demand.

Flax	$1 75 @ 2 25
Mustard, Yellow	3 50 @ 4 00
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	8 @12½
Canary	6¼@ 6¼
Rape	2 @ 2½
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Market is quiet. There is some Nevada honey of 1904 crop here, for which buyers are wanted at 10c. per lb. for white comb, 5½c. for light amber extracted and 6c. for white candied. Custom has been sought here for Hawaiian Island amber extracted at 2½c. per lb. This honey has a peculiar flavor, making it undesirable for other than bakers' trade.

Extracted, White Liquid	5½@ 6
Extracted, Light Amber	4 @ 5
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	11 @12
Amber Comb	8 @10

Beeswax.

Not much offering, neither is the immediate demand very brisk.

Good to choice, light ₱ lb	27 @29
Dark	25 @26

Live Stock and Meats.

Beef is in good supply and the quality is of high average; prices are without quotable change. Veal is in fairly liberal receipt for this time of year. Mutton and Lamb are selling at quotably unchanged figures and no scarcity of either. Values for Hogs are ruling steady, under light arrivals, mostly milk fed.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5½@—
Beef, 2nd quality	— @ 5
Beef, 3rd quality	4 @ 4½
Mutton—ewes, 6@7c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5⅝@ 5¾
Hogs, large, hard, over 200 pounds	5¾@ 5½
Hogs, small, fat	5½@ 5⅝
Veal, large, ₱ lb	4 @ 6
Veal, small, ₱ lb	5 @ 8
Lamb, yearlings, ₱ lb	8 @—
Lamb, spring, ₱ lb	8½@ 9

Hides, Skins and Tallow.

Market is firm for Hides and Pelts in prime to choice condition, demand being good at prevailing values.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12 @—	11 @—
Medium Steers, 48 to 56 lbs	11 @—	10 @—
Light Steers, under 48 lbs	11 @—	10 @—
Heavy Cow Hides, over 50 lbs	11 @—	10 @—
Light Cow Hides, under 50 lbs	11 @—	10 @—
Stags	8 @—	7 @—
Wet Salted Kip	11 @—	10 @—
Wet Salted Veal	13 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19½@—	19 @—
Dry Kip and Veal, 11 to 16 lbs	17 @—	15 @—
Dry Calf, under 4 lbs	21 @—	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3¼	

Bags and Bagging.

Inquiry for Grain Bags is more active than at the beginning of the month, and market is quite as firm in tone, although not quotably higher.

Bean Bags	$ 5½@—
Fruit Sacks, cotton	6½@7½
Fruit Sacks, jute, as to quality	5¾@7
Grain Bags, Calcutta, 22x36, spot	6½@—
Grain Bags, Calcutta, buyer June-July	6½@—
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

There was no scarcity of common old and small young stock, such moving slowly at generally easy figures, the quotable range remaining much the same as preceding week. Large and fat young poultry brought good prices, being in light receipt and sought after by dealers.

Turkeys, choice Young, ₱ lb	$ 24 @ 26
Turkeys, live gobblers, ₱ lb	19 @ 20
Turkeys, live hens ₱ lb	19 @ 20
Hens, California, ₱ dozen	4 00 @ 5 00
Hens, large	5 00 @ 6 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	7 00 @ 8 50
Fryers	4 50 @ 5 00
Broilers, large	3 00 @ 3 50
Broilers, small to medium	2 00 @ 2 50
Ducks, old, ₱ dozen	4 50 @ 5 50
Ducks, young, ₱ dozen	4 50 @ 6 50
Geese, ₱ pair	1 50 @ 1 75
Goslings, ₱ pair	1 50 @ 1 75
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	1 50 @ 1 75

Butter.

Values are ruling tolerably steady, through free storing and the filling of contracts. Arrivals are liberal. The demand for immediate use is light, as is always the case in June, July and greater part of August.

Creamery, extras, ₱ lb	20 @21
Creamery, firsts	19 @20
Creamery, seconds	18 @19
Dairy, select	19 @—
Dairy, firsts	18½@—
Dairy, seconds	18 @—
Mixed Store	17 @18

Cheese.

Market for domestic product is firm at current rates. Speculative operators are storing desirable flats. The small sizes are in limited stock. New Eastern cheddars will soon be on market, costing about 10c per lb. at primary points.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to good	9 @ 9½
California, "Young Americas"	10 @12
Eastern, new	12½@13½

Eggs.

For strictly select fresh, uniformly large and white, comparatively good prices are being realized, not many of this sort arriving. What are known to the trade as warm weather eggs, averaging low in quality, are in heavy evidence, both California and Eastern. For these the market is weak. Eastern seconds were offering here this week at 16c in large or small lots.

California, select, large, white and fresh	22 @23
California, select, irregular color & size	19 @21
California, good to choice store	17½@19
Eastern firsts	18 @19
Eastern seconds	16 @17

Potatoes.

There were heavy receipts from the river districts, largely of ordinary qualities. Prices were at a wide range, with market weak for other than select stock. Fancy Burbanks sold up to $1.85 per cental ex-wharf, while there were some so poor they would not command a cent a pound in a regular way.

Cal. Early Rose, ₱ cental	75 @ 1 00
New Burbanks, ₱ cental	75 @ 1 75
Eastern Burbanks, ₱ cental	1 40 @ 1 60
River Reds, ₱ cental	— @ —
Oregon Burbanks, ₱ cental	— @ —
Chile Garnet, ₱ cental	90 @ 1 10
Sweet Potatoes, ₱ cental	— @ —

Vegetables.

Asparagus of high grade was in light receipt. Peppers were scarce and high. Offerings of Green Corn showed an increase, mostly under choice. Peas, String Beans and Squash were in good supply. Tomatoes were offering from Los Angeles and Mississippi, the latter at $1.25@1.50 per crate. Market for both Yellow and Red Onions inclined in favor of buyers.

Asparagus, No. 1 to choice, ₱ lb	5 @ 7½
Asparagus, No. 2, ₱ lb	4½@ 5
Beans, Lima, ₱ lb	— @ —
Beans, String, ₱ lb	1½@ 3
Beans, Wax, ₱ lb	1½@ 3
Cabbage, choice garden, ₱ 100 lbs	50 @ —
Corn, Green, ₱ sack	1 25 @ 2 25
Egg Plant, ₱ lb	8 @ 12½
Garlic, ₱ lb	3 @ 5
Mushrooms, ₱ lb	— @ —
Onions, Australian, ₱ ctl	6 00 @ —
Onions, New Yellow Danvers, ₱ ctl	1 00 @ 1 50
Onions, New Red, ₱ ctl	75 @ 1 00
Peas, Green, ₱ sack	75 @ 1 25
Peppers, Bell, ₱ lb	— @ —
Peppers, Green, ₱ lb	10 @ 20
Rhubarb, ₱ box	50 @ 75
Summer Squash, small box	25 @ 50
Summer Squash, per large box	50 @ 1 00
Tomatoes, Los Angeles, ₱ box	1 25 @ 1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Market was well stocked with most kinds of mid-Summer fruits. Apricots were in especially liberal receipt, some

coming forward in bulk, and good to choice were held at $40@50 per ton. Peaches were in increased supply and for other than first-class shipping stock the market lacked firmness. Pears were mostly of quite ordinary quality and in consequence in poor favor with buyers. Apples sold at a wide range, with few choice enough to command top figures. Figs from Visalia were held at $1.75@2.00 per 8-lb. drawer. Figs from Yuma sold at $1.50 per drawer. Seedless Grapes arrived in small quantity from Yuma Heights. Cherries were in light receipt, choice bringing good figures. Plums and Prunes were in increased supply and averaged lower. Currants did not make much of a display and best sold to advantage. Choice Raspberries brought good figures. Blackberries, Loganberries and Strawberries were in good supply. Cantaloupes and Watermelons were more plentiful and cheaper.

Apples, fair to good, ℔ 50-lb. box..	75	@	1 25
Apples, green, ℔ small box	30	@	60
Apricots, Royal, ℔ box.....	40	@	75
Blackberries, ℔ chest.....	4 00	@	6 00
Cantaloupes, pony crate.....	2 75	@	3 25
Cantaloupes, ℔ standard crate....	3 50	@	4 50
Cherries, Black, good to choice, bx	75	@	1 25
Cherries, Royal Anne, ℔ box.....	1 00	@	1 25
Cherries, loose, ℔ lb.....	5	@	10
Currants, ℔ chest.....	5 00	@	7 00
Figs, Visalia, ℔ box.....	1 50	@	2 00
Gooseberries, English, ℔ lb.....	—	@	—
Gooseberries, other kinds, lb.....	—	@	—
Loganberries, ℔ chest.....	2 50	@	4 00
Peaches, ℔ box.....	40	@	75
Pears, Madeleine, ℔ 40-lb. box....	50	@	1 00
Plums, Cherry, ℔ box	35	@	60
Plums, Clyman, ℔ crate	30	@	50
Primer Berries, ℔ chest.....	2 00	@	3 50
Prunes, Tragedy, ℔ crate.....	75	@	1 00
Raspberries, ℔ chest.....	4 00	@	7 00
Strawberries, Longworth, ℔ chest	5 00	@	8 00
Strawberries, large var., ℔ chest.	3 00	@	6 00
Watermelons, ℔ lb	3	@	5

Dried Fruits.

There are no large offerings of dried fruit of any sort, and market for desirable stock presents a generally firm tone, with Apples and Prunes inclining particularly against the buying interest, as compared with recent values. In futures of this year's fruit there is not much doing, speculative operators being slow about shorting anything except Apricots and Peaches. They may get their fingers pinched on these varieties if they sell at as low figures as some of them have been talking. Considering the comparatively light stocks of dried fruit now in store, there were some tolerably heavy shipments outward by sea the current week. The steamer Itauri took 91,078 lbs. Prunes, mainly for Germany. The steamer Sonoma, sailing 11th inst., carried 81,650 lbs. dried fruit, not including Raisins, for Australasia, of which 65,280 lbs. were for New Zealand, including 27,690 lbs. Prunes, 7645 lbs. Apples, 1800 lbs. Peaches, 1500 lbs. Apricots. The steamer City of Puebla took for British Columbia 8925 lbs. dried fruit, including 4250 lbs. Prunes.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	6	@	6½
Apples, extra choice to fancy, 50-lb boxes.	7	@	8
Apricots, Moorpark.....	—	@	—
Apricots, Royal, good to choice, ℔ lb.....	5½	@	6½
Apricots, Royal, fancy.....	7	@	—
Figs, 10-lb box, 1-lb cartons.....	55	@	60
Peaches, unpeeled, good to choice.....	5½	@	6½
Peaches, unpeeled, fancy to extra fancy..	7	@	8
Pears, standard, ℔ lb.....	6½	@	7
Pears, choice to fancy.....	7½	@	11
Plums, Black, pitted.....	5½	@	6½
Plums, Red, pitted.....	7	@	8½
Plums, Yellow, pitted.....	6½	@	7½
Prunes, Silver, good to fancy.....	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2½c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced.....	2½	@	2¾
Apples, quartered.....	3	@	3½
Figs, White, in bulk.....	3	@	3½
Figs, Black.....	2½	@	4

Raisins.

Stocks are largely of the lower grades, and on this description concessions are being granted by holders to effect a clean-up. Shipments for the week include 52,716 lbs. to New Zealand, 25,000 lbs. to Australia, and 11,590 lbs. to British Columbia.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box....	85	@	—
London Layers, 3-crown, 20-lb box.....	90	@	95
Fancy Clusters, 4-crown, 20-lb box.....	—	@	1 30
Dehesas, 20-lb box.....	—	@	1 85
Imperials, 20-lb box.....	2 25	@	2 35
2-Crown Standard loose Muscatel.....	3	@	—c
3-Crown Standard.....	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons.....	—	@	4½c
Seedless Sultanas.....	—	@	3 c
Fancy 16-oz. Seeded.....			5½c
Choice, 16-oz. Seeded.....			4½c
Fancy, 12-oz. Seeded.....			4¾c
Choice, 12-oz. Seeded.....			3¾c

Citrus Fruits.

Oranges are in reduced stock, but of ordinary qualities the supply is in excess of the demand. Late varieties in prime to choice condition are in fair request, and current values for these are being well maintained. There was no scarcity of Lemons, but fairly good inquiry for best qualities, values ruling steady. Limes were in ample supply for current requirements and prices unchanged.

Oranges, Navels, choice to fancy, ℔ bx	2 50	@	2 75
Oranges, Navels, fair to good, ℔ box.	1 25	@	2 25
Oranges, Valencias, ℔ box.....	2 00	@	3 00
Oranges, Cal. Tangerines, half box...	—	@	—
Lemons, California, select, ℔ box....	2 25	@	2 50
Lemons, California, good to choice..	1 50	@	2 00
Lemons, California, fair to good.....	1 25	@	1 50
Grape Fruit, ℔ box.....	1 50	@	2 50
Limes, Mexican, ℔ box	4 00	@	4 50

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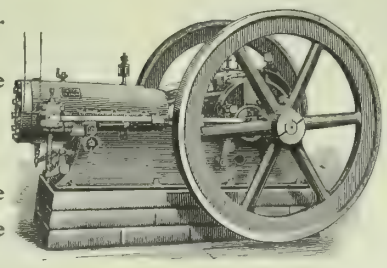
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Nuts.

Only a light jobbing trade in Almonds and at figures showing no quotable change. There are no heavy offerings of Walnuts, and desirable qualities are being steadily held, but as is usual in mid-Summer, the demand is not brisk.

Chestnuts, Italian, ℔ lb.....	—	@—
Nonpareil Almonds.....	13	@16
Ne Plus Ultra Almonds.....	11	@14
Languedoc Almonds.....	8	@11
Peanuts, fair to prime.....	4½	@ 5½
Cal. Walnuts, No. 1 soft shell.....	12	@13
Cal. Walnuts, No. 2 soft shell.....	10	@11
Cal. Walnuts, No. 1 hard shell.....	11	@12
Cal. Walnuts, No. 2 hard shell.....	9	@10

Wine.

The general condition of the wholesale wine market remains practically as previously noted, being very quiet in this center. Dry wines of 1904 vintage are quoted at 14@17c per gallon, San Francisco delivery. Very ordinary would be difficult to place at inside quotation, while to secure strictly choice an advance on outside figure would likely have to be paid. Sweet wines of 1904 are quoted at 25c per gallon in bulk at wineries, 27½c per gallon in a jobbing way at San Francisco, but the wine offering at these figures is not of select quality. Telegraphic advices report 250 barrels California wine shipped from New York to Marseilles, France. This wine will probably come back under high sounding labels and bring fancy figures. Receipts at San Francisco last week were 422,250 gallons, and for previous week were 321,650 gallons. The steamer San Juan, sailing June 10, carried 25,354 gallons and 60 cases, mostly for New York.

The oldest lawsuit in North Carolina is now being finally settled. It is that of the Eastern band of Cherokee Indians against W. H. Thomas and others, involving a great many thousand acres of land and also other interests. Thomas was for some years before the civil war the chief of the Eastern band, and raised a legion of troops from among his Cherokees, which was in the Confederate service, being one of the North Carolina regiments. The case began in 1867, in the Federal Court for the Western North Carolina District, and since that date more than ninety attorneys have been employed. Every lawyer who was first employed has died.

A Spanish contemporary says, according to the Indianapolis News, that in 1904 nearly 12,000 bulls were killed in bull fights of the country. The bulls killed about 10,000 horses. The best and most valuable bulls for the arena are raised on the vast estates of the Duke of Veragua in Andalusia, who has made a fortune out of this business.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

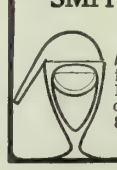
FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks.....	117,330	4,407,770	5,185,656
Wheat, ctls.....	71,744	2,715,972	2,350,594
Barley, ctls.....	45,374	3,441,755	5,424,284
Oats, ctls.....	3,746	819,130	855,486
Corn, ctls.....	12,812	289,928	166 131
Rye, ctls.....	453	55,090	59,364
Beans, sks.....	9,346	641,387	720 018
Potatoes, sks.....	27,041	1,256,603	1,299,467
Onions, sks.....	4,616	147,096	158,622
Hay, tons.....	2,402	171,557	168,064
Wool, bales.....	909	77,113	70,523
Hops, bales.....	205	39,544	31,324

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk.....	91,068	2,905,140	3,183,416
Wheat, ctls.....	335	806,985	1,002,791
Barley, ctls.....	8,101	1,889,456	4,195,823
Oats, ctls.....	214	80,750	24,123
Corn, ctls.....	20,382	170,617	18,886
Beans, sks.....	884	52,649	40,179
Hay, bales.....	4,017	235,760	229,345
Wool, lbs.....	.....	884,219	2,655,901
Hops, lbs.....	1,986	392,057	592,478
Honey, cases.....	11	3,077	5,393
Potatoes, pkgs	1,766	112,251	110,114

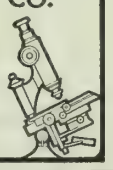
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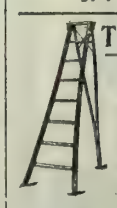


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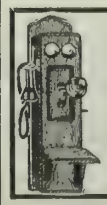
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The Farmer as a Business Man.

The following is a synopsis of a portion of a paper read by Edward F. Adams at the State Farmers' Institute at Berkeley:

Mr. Adams stated his conception of a "good business man" to be "one who knows what will pay in his business and generally does it." He may or may not be an accumulating man, and so may or may not acquire wealth, but his business operations, in themselves, will usually be profitable. The essential qualifications of a business man are the powers of accurate observation and analysis. By the exercise of these powers he is able to differentiate the details of his business one from another and thus ascertain and stop the sources of waste. These qualities are best developed by the contact of mind with mind in trading, and are therefore most marked in cities where intercourse is constant, and weakest among farmers whose lives are more solitary. The business ability of the farmer or lack of it is displayed both in production and marketing. But the business relations of the farmer does not stop with his immediate environment. They extend to the operations of his local and State governments, which have no legitimate connection with "politics."

Among our small farmers the best business men are the renters, who are business men because they have to be. Especially is this true of the European immigrants, who are the descendants of generations of renters, and who, having to make rent, at any rate, in addition to a living, watch details more closely than Americans, and in some parts of the country are crowding out the native Americans by their ability to make money where Americans cannot. Competition alone will make business men, but under severe competition only the best business men can continue in business. Consequently, the farmer of the future will be a good business man, because he will have to be. If he is not he will not be an independent farmer. The greatest danger to the independent small farmer is the capitalist, who in some parts of the country shows an inclination to acquire the rich lands and operate them by captains of agriculture, crowding the old farmers of poor business capacity on to the lands less fertile, where he is also in danger from the encroachments already alluded to—of the sturdy and business-like European immigrant who does not speculate.

In the opinion of Mr. Adams, the most useful agencies in the development of the farmer are the agricultural colleges and experiment stations. They have sent abroad into the rural world an enormous amount of detailed information in relation to production, which is gradually becoming part of the common stock of knowledge of all farmers and is making them business-like producers. Mr. Adams thinks he should go farther and deal with the broader business relations of the farmer. "The farmer needs courses in commercial geography; in the mechanism of trade; in the elements of the cost of transportation, including transportation on country roads; in the danger of attempting business on inadequate capital—the most common and deadly sin of farmers; in the profitable use of borrowed money, and the danger of borrowing for unprofitable purposes; in the cost of transacting the business of those who deal in his products; in the art and limit of profitable co-operation; in the simple forms of farm bookkeeping; in the cost of carrying on Governments and the difficulty of securing equitable taxation; in his economic relations to his local and State Governments; in the nature and functions of banks—in short, in all those plain, everyday business affairs and relations which profoundly affect the economic condition of the farmer, and as to which he is in absolute need of correct information, but as to which, for the most part, he is not only in ignorance, but believes what is entirely untrue."

Mr. Adams referred in a pleasant way to a large number of typical cases in which farmers in this State have shown lack of business ability, both in the operations of production and marketing, and in their broader relations to the State. As to these latter relations he said:

"Consider these relics of barbarism, our game laws, to which farmers tamely submit, while inwardly boiling with wrath, because they have no power of individual or collective action for opposing the insolent dictation of sportsmen forbidding the farmer to protect his crops. And they, even in their own counties, submit to taxation for the payment of spies called 'game wardens' to steal upon their land and catch them in the act of protecting their vineyards from quail, their young orchards from the destructive deer, or their grain crops from the pugnacious Mongolian pheasant. Nobody desires to destroy the balance of Nature, nor is there the slightest fear that farmers will do it. They are too busy. The preservation of game and on unenclosed land and of fish everywhere is a legitimate function of government. To compel farmers on their enclosed farms to raise crops to feed to game to afford pleasure to sportsmen and profit to pot hunters is an outrage, as it is to interfere in the slightest respect with anything which the farmer may do with respect to animal life at any time of the year on his own land. As a matter of fact the game found on enclosed land is of little or no commercial value to any one, but whether it has value or not is a matter to be determined solely by the farmer, who supplies the money to provide the feed for it. As a matter of fact, also, the game on enclosed land is not preserved by law for the sake of accomplishing any economical purpose whatever, but solely to permit idlers, at the expense of the farmers, to gratify the bloodthirsty instincts of their depraved nature. And so long as the farmers peacefully bend their necks to the yoke and tamely lie down to be trampled upon, can we deny that the picture of the Man with the Hoe is a fair representation of their tameness and stupidity?

And so I might go on until you pelted me off the stage with turnips—a fate which, or a worse one, has very commonly befallen truth tellers in all ages. And yet the truth is a precious possession and most especially needed by farmers. It is particularly necessary now, for there are already signs, even in this new State, of the concentration of large blocks of rich land in the hands of the capitalists and the eviction of the independent small farmer to make room for captains of agriculture. Unless he becomes a business man, the small farmer must go. It is not necessary that the farmers should continue to be the sport of all other classes, a panderer to their diversions and the bearer of their burdens. In a thousand farmers selected at random, there is just as much native ability as in a thousand selected likewise from any other class. But it needs awakening and training. It needs the friction of mind with mind. 'Iron sharpeneth iron; so a man sharpeneth the countenance of his friend.'"



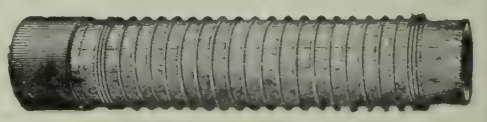
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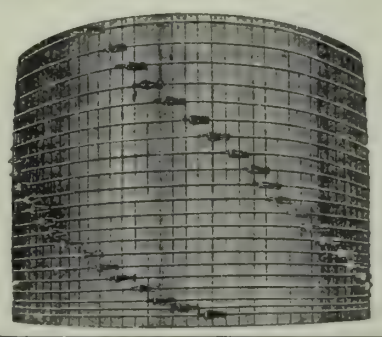


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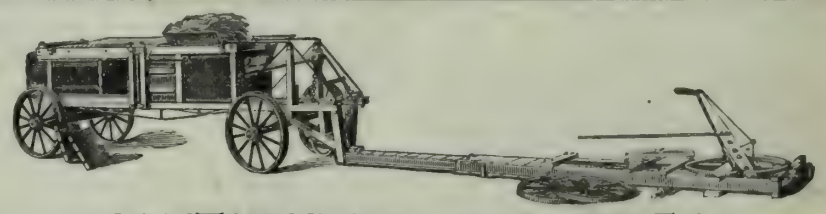


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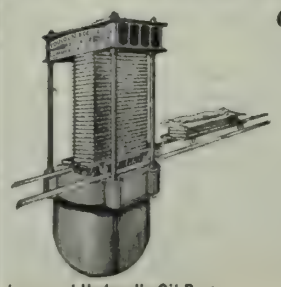
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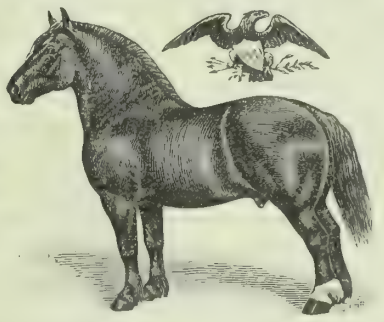
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THE VETERINARIAN.

Ringbone and Spavin.

By C. L. BARNES of the Veterinary Department of the Kansas Experiment Station.

Since olden times the term "ringbone" has been used to indicate an enlargement around the coronary joint. This enlargement is hard, being a growth of bone, and in many cases forms a complete ring, hence the name. A ringbone has a tendency to continue growing, and in rare cases attains the size of a man's head.

CAUSES.—Any conditions which favor sprains, such as fast driving over hard or uneven roads, unequal paring of the hoof, thus causing the weight to be unequally distributed in the joints, and severe labor in early life. In addition to these may be mentioned blows, bruises, or any injuries to tendons, ligaments or joints. There is no doubt that colts inherit a predisposition to ringbone.

SYMPTOMS.—Just as soon as the covering of the bone is bruised a liquid is poured out in the region of the injury. This inflammatory liquid hardens and forms the uneven growth known as ringbone. If the covering of the bone continues to be inflamed more growth is formed. Before the ringbone has become chronic the disease passes unnoticed. If the abnormal growth of bone is between the bones of a joint, or if it tends to injure ligaments or tendons when they are moved, a ringbone is very painful. On the other hand, a ringbone may be very large and not cause very much annoyance, from the fact that it may not interfere with the free movement of ligaments or tendons or encroach on the gliding surface of a joint. In addition to the growth that can be readily seen, a horse affected with ringbone is very lame when first taken out of the barn, but after moving for a few hundred yards gradually "works out of the lameness," as horsemen call it, but when allowed to stand and become cool, and is then moved again, the lameness reappears.

TREATMENT.—Preventive treatment consists in keeping horses' feet trimmed properly, not overworking colts while young, careful driving on hard and uneven roads, and avoiding all injuries that are liable to strain tendons, ligaments and joints of the limbs.

Even after a ringbone has developed it can be cured by proper treatment of the feet and applying a fly blister. The fly blister is prepared by mixing thoroughly one ounce of pulverized cantharides, one ounce of biniodide of mercury and eight ounces of lard. The hair is clipped over the ringbone and the blister applied with considerable rubbing. The horse's head should be tied so as to avoid his biting the part blistered. A second application of the blister is to be used a month after the first. If blistering fails to cure the ringbone, point firing may be resorted to. It is necessary to "fire" rather deeply to secure good results, care being taken not to fire at a joint. After firing, a fly blister should be rubbed into the holes where the iron has been used.

When all these methods have failed and the animal is not worth keeping for a long and uncertain treatment, a skilled veterinarian should be employed to perform an operation for the removal of the nerves supplying the limb in the region of the ringbone. After a horse has been operated on, great care should be taken of his feet, from the fact that there is no feeling in the foot operated on and serious results may come from stepping on nails, etc., and carrying them for many days before the driver would notice the foreign bodies.

SPAVIN.

This disease, known in common language as bone spavin, is an enlargement of the hock joint similar to ringbone about the coronary joint. It may affect the hock joint in such a way as to cement the small joints together, not causing lameness and apparently no blemish, but the free movement of the limb is impaired.

CAUSES.—In addition to the causes given for ringbone may be mentioned sprains caused by jumping, galloping or trotting animals faster than they are accustomed to; also straining by starting a heavy load, slipping on an icy surface, or sliding on a bad pavement.

SYMPTOMS.—If the patient is examined before any bony growth has developed, inflammation will be detected on the inside of the hock joint at the junction of the cannon bone and the joint. While in the stable the horse prefers to rest the diseased leg by setting the heel on the toe of the opposite foot, with the hock joint flexed. In traveling the patient is very lame when first taken out of the barn, but after traveling a short distance goes sound. The diseased leg is not lifted clear from the ground, but nicks the toe in the middle of the stride, which is very noticeable on a pavement. Like a ringbone, a spavined horse becomes very lame after being allowed to stand for even a very short time, then moved again.

TREATMENT.—The treatment for spavin is the same as for ringbone.

The Horn Fly.

Dr. John Spencer, veterinarian of the Virginia station, has issued a bulletin on this exceedingly troublesome insect. After much study and experimenting with a long list of alleged remedies and trying many other methods of extermination, he finds the following the most effective:

"Yellow soap, ½ pound; soft water, 1 gallon; kerosene oil, 2 gallons. Shave the soap fine and dissolve in the water at boiling temperature. Place kerosene oil in the barrel containing the spray pump, to which should be added the hot soap solution. The mixture is now churned vigorously through the pump for fifteen or twenty minutes, or until the whole mass becomes like thick cream and is fully emulsified. One gallon of water (or in this proportion) is now added to prevent the solution from becoming thick, curdy and troublesome to be dissolved. This is to be kept as the stock solution and diluted in the proportion of one part to five of water, and thoroughly mixed by agitation through the pump just prior to using. Only the required amount must be mixed in the pump for one application, as it tends to separate and give unsatisfactory results. Too severe and continued agitation is to be avoided, as it tends to cause the solution to foam, in which condition it will not spray satisfactorily and requires a few moments to settle."

To those who are not acquainted with this insect it may be well to say that it somewhat resembles the ordinary house fly in color and shape, but is only about half as large. Its bite is very irritating to cattle, and doubtless quite painful, judging from its effect on the animals when present in large numbers. It attacks all parts of the body, but when at rest congregates in large numbers at the base of the horn. The wash recommended is best applied by a spray pump to all parts of the body—the only feasible way when any considerable number of cattle are to be treated.

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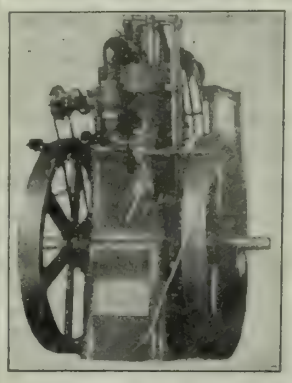
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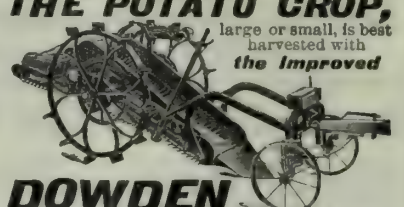
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THE DAIRY.

Prices of Jersey Cattle.

The annual sale of imported Jerseys at Linden Grove, Coopersburg, Pa., property of T. S. Cooper & Sons, took place May 30, with a representative attendance of Jersey breeders. In all 103 head were disposed of. The sale of 95 head was witnessed by the writer, and they brought an aggregate of $61,060, an average price of $642 per head. The highest prices paid were $10,000 for bull Eminent 61631, by Geo. E. Peer of Chili Station, N. Y.; $2525 for cow Reminder's Duchess 187420, by Bowmont Farms, Salem, Va.; $2500 for cow Fontaine's Oxford Pride, by Gedney Farm, White Plains, N. Y.; $2000 for heifer Agatha's Dainty Lady 187478, by Gedney Farm; $1600 for cow My Gray Buttercup 187416, by Gedney Farm and $1500 for cow Eminent's Evasion 187443, by Bowmont Farms. The 95 head mentioned included 8 bulls, 42 cows, 28 heifers and 17 calves. The 8 bulls brought $12,520, an average of $1565 per head; the 42 cows brought $31,465, or $749 per head; the 28 heifers brought $12,615, or over $450 per head, and the 17 calves brought $4460, or $262 per head.

THE APIARY.

Great Honey Flow in California.

Professor A. J. Cook of Pomona college, who is soon to start for a well-earned year of travel and recreation, writes as following in the American Bee Journal:

We are having the ideal conditions for a great honey flow here at the present time. I know a man who has kept a colony of bees on the scales for years, and has the record for this year. He secured twenty-two pounds one day last week and twenty-four pounds the next day. We have had some very warm days and the bees have been wild with their opportunity to work and store. I have never seen the like of bloom that now decks our fields, canyons and hills. The black or ball sage is in bloom and the white is just beginning to open. Both of these incomparable honey plants give rich promise of a great yield of honey this year. The plants show a growth and vigor that only our abundant rains will explain.

The salvias also are out in force and are very attractive to the bees. One of these, Salvia carduacea, is a wonderfully beautiful plant, and I have wondered that it is not in cultivation the world over for ornament. It has a ball of exquisitely beautiful lavender flowers, and the stem passes through this, and then there is another ball of the bloom, and so on, there may be five in extreme cases. The foliage is woolly and the flowers are as fine as any sage bloom that I have ever seen. The foliage looks like that of the thistle, and hence the scientific name, which means "thistle Salvia."

We have another Salvia of like habit, which is far more common, Salvia columbariæ, and though not as showy as the other, it is a good bee plant and helps the bee keeper not a little.

We also have many phacelias, all of which attract the bees and add to the stores in the hives. I have wondered if we might not plant more of the winter-blooming acacias and eucalypts, so as to give more winter work for the bees, and thus have brood rearing commence so early that the bees would be strong for the orange bloom. There can be no question but that the citrus bloom is rich with nectar, else it would not fill the entire atmosphere with such delightful perfume. I have not any doubt but the honey from this source would be of the very best flavor.



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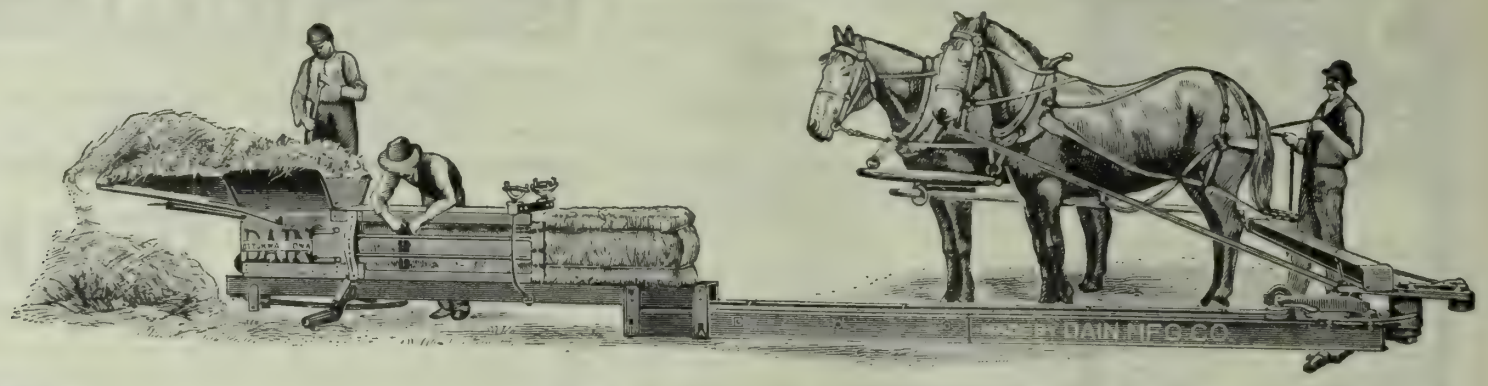
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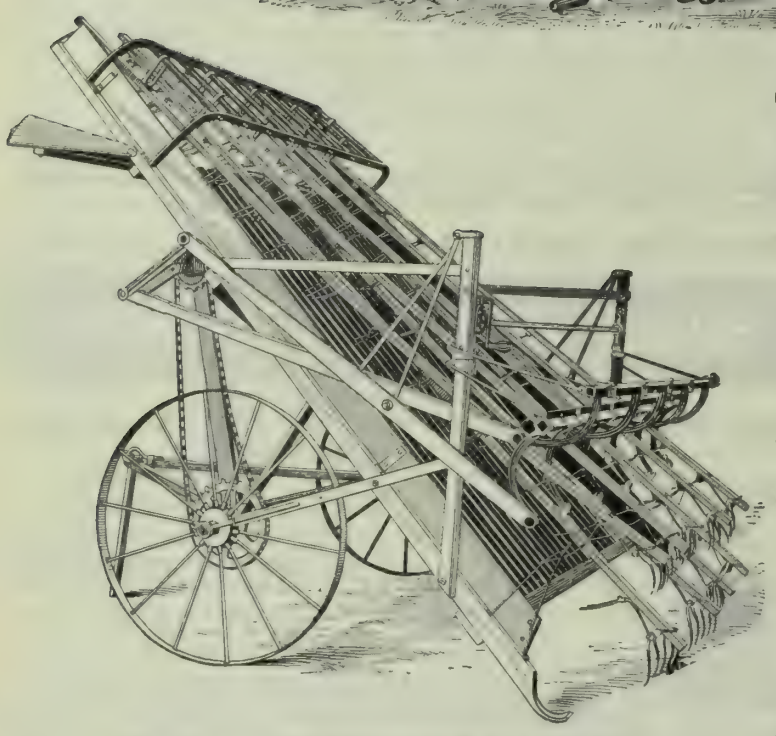
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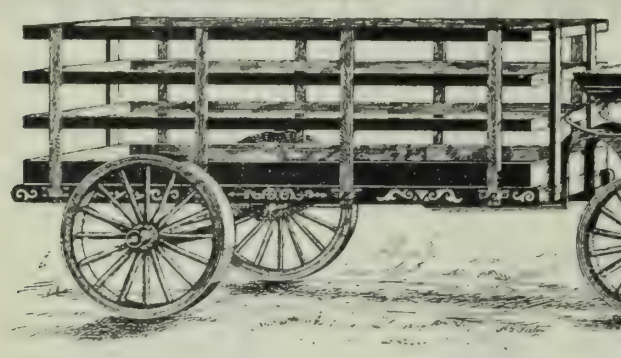
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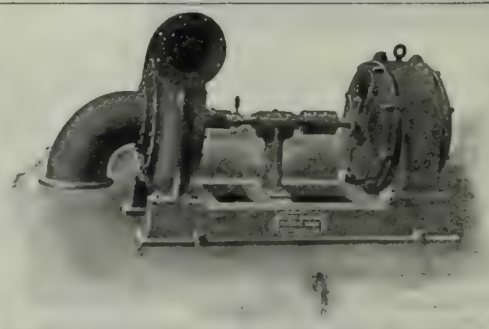
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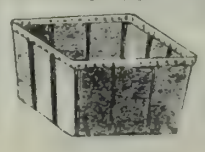
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Vol. LXIX. No. 25. SAN FRANCISCO, SATURDAY, JUNE 24, 1905. THIRY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Summer Travel on the Yukon.

Two weeks ago we gave some interesting pictures of farther Alaska showing the primitive methods of travel by raft and sled and promised later some views which would give a better idea of the dignity of the river and its recent development by town building and steamboat transportation. Such views appear herewith. Probably the most striking of the group will be found most interesting, because it conveys the testimony of the camera, that summer days on the Yukon are quite as long as the most exacting workers or pleasure seekers could desire. The photograph from which this engraving was made was taken at midnight on June 30, 1904. At this season of the year at the latitude of Eagle City—about 65°N.—it is daytime, and objects can be seen for miles on all sides.

The contrast between winter and summer travel in upper Alaska is worth a comment. During the long winters the miners and others make lengthy pilgrimages from place to place by means of sleds drawn by horses or dogs, and transportation by this means is convenient and comparatively inexpensive. As a matter of course, the routes chosen for travel by sleds lie along the water courses and lakes, for the mountains are usually so abrupt as to make them impassable barriers to the traveler. With the coming of spring the ice in the rivers breaks up and later the streams are free from ice and navigation is open for a few months. One of the accompanying engravings shows the appearance of the river during the period of breaking up of the ice. At this time it is not safe to venture to make an extended journey for fear of blockades and ice jams. Another illustration is that of Eagle City, as seen from the bluffs above town. Eagle City is near the international boundary and on the American side. A third engraving gives a good idea of a Yukon river steamer and the character of the landings at some of the points along the river. These vessels are all flat bottomed and have stern wheels. Many of them have paid for their construction many times over. A glance along the bank of the river shows the rather frail character of the buildings.

The picture also shows that agriculture has gained a foothold, for a bunch of dairy cows are shown. The U. S. Department of Agriculture is conducting systematic experiments at different points in Alaska to determine just what can be done in production of food for men and animals and some quite satisfactory results have been attained. The farmer in that country carries quite a handicap in the brevity of the growing season, but such rapid progress is now being made in distribution of plants locally useful in all parts of the earth and in developing new characters and endurances in old plants that it is perfectly reasonable to expect that American applied science may attain achievements in the line of agriculture which will enable Alaska to advance farther toward self support in some kinds of food products than is now possible. Some of those who have gone North to fight for the high prices which scarcity engenders have been discouraged it is true, but others have scored success.



A View on the Yukon Near Eagle City. The Photograph Was Taken at Midnight, June 30, 1904.



Steamboat Landing at Eagle City, Alaska.



Breaking Up of the Ice on the Yukon.



View of Eagle City, Alaska, From the Bluffs.

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The Week.

The temperature continues a little below the normal, and this fact is grateful as one reads of the hot spell at the East; but the continuation of the coolness of spring into summer time is an irregularity which is working some ill effects to plants. We are receiving indications of unusual spread of vine mildew in the interior, which is to be expected from the record which grain rust has made this year. The same is true of apple and pear scab, peach mildew, etc. These things are not serious on the whole, but we mention them to impress the fact that the normal growing conditions are so good that even slight changes from them are apt to keep plants from maximum thrift and productiveness. It is well once in a while to experience such a thing to emphasize the rejoicing that the usual thing in California is about as good as can be from the point of view of profitable production.

As noted in our last issue, the fruit shipments are reaching very high figures for so early a date. The record to Tuesday of this week included 704 cars, as against 289 to a corresponding date last year. Thirty cars were shipped from Sacramento June 20, while on a corresponding day last year the shipments numbered twenty-six. The fruit is also selling at a much higher average and some record car figures are being made. The impression continues that, from all demands involved, we shall have a year of very good prices.

Spot wheat is unchanged and firm with small offerings; futures here have improved a little, although Chicago has wobbled considerably. Feed barley, however, is weak and 5 cents lower; shippers and brewers are not in the market now and much is going for feed which is fitted for their uses. New red oats have gone at $1.40, but this is apparantly higher than sales to arrive could be made. Corn is steady—coming from the East and going to Central America all the time. Beans are unchanged and quiet with confident holders. Bran and middlings are in easy tone, but not lower as supplies are not large. Hay is the same as before, a sale of very choice tame oat going to $9.50. Beef is off a little and other meats quiet except that hogs are doing fairly. Butter is lower and high grades weaker. Cheese is doing well, flats still going into storage and Eastern higher. Eggs are in warm weather condition rather off for storage and not in great consumptive demand. Poultry is the same as before. Choice potatoes are firm, with a good demand and light receipts. Onions are unchanged; yellow are steady and red are weak. Oranges are firmer, but the demand is not large and receipts are light. Lemons are unchanged. There is an oversupply of low-grade fresh fruits, while choice sell well. Dried fruits are still firm; new apricots are coming in and reported selling in the interior at 5½@7c; dried peaches contracted at 6@8½c; pears are talked about at 10c and raisins at 2½c in the sweat box. Growers should, however, always remember that talk is cheap at this season. There have been heavy shipments of prunes, not only by sea, but by rail to lessen time to Europe, where a sharp demand seems to exist. Nuts are very quiet; walnuts are conceded to be valuable, but almonds are talked against on the basis of large prospects. Honey is freely offered, but buyers are shy. There is nothing doing in hops, though holders are still confident. Wool buying at Cloverdale is going at 27½@30c, and very little reaches this market unsold.

The Congressional visitation in the interest of irrigation, to which we alluded last week, continued until Saturday night, covering the San Joaquin and Sacramento valleys and central Nevada, where water was set free from the new dam in the Truckee river into the first National irrigation reclamation, about 25 miles east of Reno. The works are admirable and reflect great credit on the Reclamation Service, which has now made its first record for achievements. In the San Joaquin the visitors were deeply impressed by what has been done by private effort, and in the Sacramento valley by the opportunity for combination of Government and private effort; but in Nevada, where desert conditions clearly prevailed and the land is open for homesteading, the real aim of national irrigation was naturally more clearly demonstrated than it could be in our great valleys. The influence of the examination of the irrigated West by the visitors will certainly be great through all the circles to which these distinguished people attain and their appreciation of the Pacific Coast way of doing things was glowingly set forth in the many addresses which they made at the various receptions tendered to them by a hospitable people. The occasion will not be forgotten by the thousands who participated either as hosts or guests during the ten busy days of travel in this State.

In this connection it is interesting to note the fact that the far Western efforts at State advertising are being emulated by Eastern and Southern commonwealths. Even so staid a journal as the New York Post warms up over the new course of affairs and says:

The commonwealths just now most active in exploiting their advantages for settlement are no longer the far-away communities of mushroom growth. Some were among the thirteen original States, and others had been settled in the first tide of Western migration.

As the State advertising has been specialized, it has become more skillful. The day of haphazard appeal is past. Before us, for instance, is a pamphlet on "Farms for Summer Homes," issued by the State Board of Agriculture in New Hampshire. It begins with letters from the eminent statesmen and authors who have chosen New Hampshire as the place for their vacations. Portraits of the celebrities themselves and photographs of their houses embellish this part. The pictures which follow through the pages are dreamy and restful. Sheep graze picturesquely on a hillside; golden shocks of corn fill a middle distance; evergreens arch their boughs over a woodland path, an icebound brook glistens in the sunshine; a canoe floats on a limpid lake—all these, of course, being in separate views—and the old man of the mountain beams benignantly over all.

So it is with other States. North Carolina has only just established an immigration bureau. South Carolina has had one for some time. They, like the other Southern States, are endeavoring especially to attract foreign immigration to the South. Minnesota, also through a newly created department, has begun systematic advertising both in outside newspapers and by the circulation of pamphlets.

This is decidedly interesting, and those of our citizens who doubt whether publicity efforts are dignified may be assured that the effort is proper because practiced by these time honored commonwealths. The Post also mentions the fact that the New York Legislature last winter passed a bill authorizing the Commissioner of Agriculture to collect and distribute information regarding the State's farm and dairy advantages. As the more desirable of the Western public lands are exhausted, it is thought that the foreign farm hands and small farmers who now pass through New York on their way westward can be induced to stop and settle.

QUERIES AND REPLIES.

Drainage of Wet Ground.

TO THE EDITOR:—I have a field of about thirteen acres on which I wish to raise hay and summer crops. The field lies about square, is on a slope and receives the drainage from perhaps half an equal area lying higher. It is too wet, especially in a number of spots. Would draining it with tile prevent it holding sufficient moisture for summer crops? Should I use porous tile? Where can I get information as to how tiles should be laid, etc.? Other conditions being favorable, would Mayette walnuts on their own roots do well on land thus drained?—READER, Santa Cruz.

Underdrainage would certainly improve such a piece of land, rendering it available for earlier working and more desirable for summer cropping because of the better preparation you can make without waiting for wet places to become tillable. You need not apprehend that the tile will render the soil too dry in the summer; it will be, on the whole, in better shape to hold moisture by good surface cultivation. If, however, the slope is considerable, it will be a good idea to close the outlet of the main drain after the water ceases to flow, so as to prevent a current of dry air up through the tile. You can get good general suggestions on putting in the tile by writing to Hon. James Wilson, Secretary of Agriculture, Washington, D. C., and asking him to send you the Farmers' Bulletin, dealing with farm drainage. You do not need porous tile; the water will enter freely enough when the tiles are butted as closely as you can get them. The drainage will certainly make the land safer for walnuts, for the trees would otherwise probably die in the wet places. Whether your land can hold moisture late enough in the season without irrigation to make the walnuts thrifty is another question. Some uplands are evidently too dry for them, because too apt to dry out, whether underdrained or not.

Woolly Aphis and Its Enemies.

TO THE EDITOR:—I am sending you under separate cover some twigs cut from a young crab apple tree, and I would like to know what it is infested with and what to do with it. I had supposed that I was acquainted with most of the pests that trouble our fruit trees, but this is a new one for me.—GROWER, Lemoore, Cal.

Your twigs are almost covered with woolly aphis—a plant louse which excretes the whitish substance which is so abundant. But you have other insects which are doing their best to destroy the aphis. First, there are more aphis lions than we ever saw collected on so small a specimen. They have hatched from eggs placed at the ends of long whitish filaments which are still seen on one of the leaves. There are also several caterpillar-like larvæ of a syrphus fly, and they, too, are eating the woolly aphis. It looks as though these friends would catch up with the aphis on the top of the tree, but there are probably more on the roots, which these friends cannot reach. Read the PACIFIC RURAL PRESS of December 17, 1904, and you will find a full account of remedies.

Discussion of Fertilizers.

TO THE EDITOR:—With respect to the fertilization of trees, such as prune, walnut or other fruit or nut variety, what fertilizer would you suggest? Also, the fertilization of vineyards? Have you any literature bearing on the artificial production of nitrates for the vegetable garden? Have you any literature bearing on plant food for such vegetables as are usually produced for domestic purposes?—FARMER, Sonoma county.

These subjects are continually under discussion in our columns and wide experience is described. General reviews of fertilizers for fruits and vegetables are given in our books on "California Fruits" and "California Vegetables." As for free publications, you can get useful suggestions by writing to the U. S. Department of Agriculture and asking for Farmers' Bulletins 124, 144, 162 and 222. All of these pamphlets treat upon fertilizers and their use and will be furnished free on application to the Hon. James Wilson, Secretary of Agriculture, Washington, D. C. After you get all the points you can from these publications, you will find that you can still learn much from your own experience and observation. The use of fertilizers profitably is not an easy matter.

Pear Blight and Plum Aphis.

TO THE EDITOR:—I am sending you a specimen branch from a pear tree taken from one of the trees on my ranch, which I am desirous of knowing if it is a disease or only a weather condition which has produced the appearance. I also enclose with this pear tree branch one or two leaves from a prune tree. These leaves have a little green bug upon them which develops into a fly, and as my foreman is not acquainted with this insect, I beg that you will let me know if it is an injurious one.—OWNER, San Francisco.

The pear branch is affected with the bacterial pear blight, a most serious disease which is now grievously affecting our pear orchards and an investigation, with effort to restrain it, is now proceeding in various parts of the State under an appropriation made by the last legislature. The nature of the disease and the method of restraining it have been fully described during the last few months in the PACIFIC RURAL PRESS. Consult the index on the last page of this issue.

Your prune trees have the plum aphis, which is unusually prevalent this year and which must be checked by spraying with the kerosene emulsion at once, for, if allowed to multiply, it will not only seriously weaken the tree, but the smut which forms upon the exudation by the aphis will make the fruit unsightly and unsalable.

Branching of Plum Grafts.

TO THE EDITOR:—I have some Tragedy prunes grafted to Grand Dukes. Wishing to form good heads for the future plum trees, how short is it wise to prune the grafts? Some Climax grafts I pruned have made good tops, but a few of the Grand Dukes seem slow and unwilling to branch out.

The trunks of the stock are afflicted with lichens. What is the best remedy for it? Can I use ordinary whitewash plus the remedy and apply with a whitewash brush?—GROWER, Penryn.

You can pinch the grafts at a distance of about a foot and a half from the starting point and induce branching, as well as lessen the danger from breaking out of the stock by wind or weight. The lichens or moss should be killed by using fresh whitewash on the old bark. The lime should be caustic enough to do this without any other medicine.

Bank Binding—Cherry Planting.

TO THE EDITOR:—Will you kindly tell me what kind of grass or plant will best bind the high, steep banks of a stream? Can young cherry trees be planted in a hole from which an old cherry tree has been lately pulled out? If not, how far away should they be planted, and what is the reason?—R. H. S., Haywards.

We know nothing better to bind the bank than Bermuda grass. This will not only spread on your place, but will go wherever the water goes below, and cause much grief. We do not know any real good binding plant which will not get beyond its business. Young trees can be planted where old ones were, if you will go to the expense of digging out the old roots deeply. The chief trouble with cherries and other stone fruits comes from root decay from old roots left in the ground, and this the seed fruits like apples and pears do not mind so much. The young tree is, however, sometimes restrained by the fact that the former tree has impoverished the soil. This can be helped by digging a large hole and putting in new soil. Sometimes, also, young trees are restrained by the running in of roots from older trees into the loosened soil. This can be helped by trenching and cutting off such roots until the young tree gets a good start—meanwhile helping the latter with a little manure in winter and water in midsummer. Of course, if you can move away from the old place in planting the new one, so much the better. We can not give any distance; go as far as you can.

Worthless Simon.

TO THE EDITOR:—I mail herewith four plums. I planted those trees ten years ago, but don't know the name of the fruit. Every year about this time the fruit splits open, the same as the four samples sent you. The trees are always loaded with fruit, but all split open and fall to the ground before ripening. Can you tell me what fruit this is, and what is the cause of this breaking up? Can it be remedied in any way?—GROWER, Gilroy.

The fruit is the Prunus Simoni, or, as it is sometimes called, Simon's plum. This variety has enjoyed some prominence and yielded some profit as grown for shipment in the interior valleys, but is practically worthless in the coast districts, not only because of its tendency to crack, as your specimens show, but because it only develops acceptable flavor in the presence of the interior heat. The best disposition which you could make of the trees would be to work them over to some variety of Japanese plum, which behaves itself and is profitable in your district.

Another Tack on Bermuda Grass Discussion.

TO THE EDITOR:—Does Bermuda grass grow good sheep feed, and will it do well in these Santa Cruz hills without irrigation? I see that some correspondents in the PACIFIC RURAL PRESS are stirring up agitation about how to get rid of it, while writers in some of the Southern States claim that stock raising on their farms would not amount to much without it. I have not been here long, but my small experience and observations make me believe that the mountain tops, gulches and hillsides here (and there is very little of any other kind of ground) are more adapted to goat and sheep feed raising than they are to fruits, nuts, grains, etc. These crops scarcely yield a living, and many have had to mortgage their places to do this, while the sheep and goat owner always takes in a little money every year for wool and meat, and without much labor at that. I believe that if we had some kind of grass that would grow well here through the dry part of the season the sheep business would prove quite profitable. Can you name the grass?—READER, Corralitos.

Surely, the best way to get along with Bermuda grass is to make use of it—and then you will like it as well as some of the alkali farmers down Fresno way do, for it is really a good feeding grass and will grow on alkali, which is too strong for other grasses. We have no doubt it will also serve well on the uplands of which you speak, but you must be a tenderfoot to dare to suggest that the lofty and picturesque Santa Cruz mountains shall be the abode of goats and goatherds. These beautiful lands have been set apart since creation for fashionable products and many owners have been trying to live up to that high calling (at some expense to themselves, as you suggest), but they would not brook the profanation of sheep and goat ranging. You have gotten pretty near the truth, however—so near that we shall have to save your life by refusing to give your name to any of your neighbors.

How Walnuts Grow.

TO THE EDITOR:—In my article on "How Walnuts Grow," and in reply to Mr. Bowers' letter published in your issue of June 3d, it seems that I was not explicit enough, so I will now add a few remarks to make the subject more clear. Mr. Bowers contended that "the English walnut and all other nuts grow with the large end toward the tree, and from this blunt or large end of the nut the germ or future tree sprouts, consequently should always be planted straight up, that is, the sharp part should be planted straight down." In my reply I said that Mr. Bowers was singularly mistaken in his idea that a walnut tree comes out of the nut with the root through the small end and the tree through the big end; but in saying that "it was no such thing" I had only reference to the tree being made by Mr. Bowers to sprout through the big end, for Mr. Bowers was right when saying that the root always comes out through the small or sharp point, but so does the tree, and he was surely wrong when stating that the tree sprouts at the big or blunt end, for both the root and the tree come out through the small end, as clearly shown by the sprouted nuts I send you. I find that the majority of people little acquainted with the planting of seeds of any kind are more inclined to plant walnuts with the big or blunt end down, which is likewise wrong. It has been found that the most successful way of planting nuts and obtaining fine, straight stock, is by planting them right on the seam, as I described in my article. As to Mr. Bowers' method of sprouting nuts by soaking them for twelve to twenty-four hours in warm water, I regard it as a good one, and I would like to call the attention of all interested to it. Three weeks ago I tried it on Chaberte walnuts of my own raising and found it to work well. Apropos, I planted the nuts in different ways, some on the seam, others with the small end down, and some, too, with the big or blunt end down; as soon as I have obtained results, likely in two or three months, I will surely report to you.—FELIX GILLET, Nevada City, Cal., June 16.

Bermuda Grass Once More.

TO THE EDITOR:—"Bermuda grass comes to stay," says Mr. A. E. Beckes. Well, probably it is so with him. Still there are places to show where it didn't stay, because there happened to be concrete sidewalks. If you haven't such sidewalks you don't need to touch your neighbor's land, nor cart it off, nor the street or public highway, but you can "plank" it out—it has been done before and can be done again. This question has run too far. In the first place, a gardener wanted to know how to get rid of Bermuda grass, evidently meaning to clear a small lot or a private residence. No gardener nor any sane man would attempt such a job in a field. Now Mr. Beckes, or anybody else, can either let it stay, without fretting about it, "or take a life's job to dig it out." Whenever people are compelled to irrigate from open ditches they are liable to get weeds, which are as bad as Bermuda grass, if not worse.—CHAS. J. SCHMID, Folsom.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 19, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear weather prevailed during the week and the temperature was about normal. Grain harvest is progressing rapidly and haymaking continues. Barley is yielding a better crop than expected in some sections, but most reports indicate that the wheat crop, except in the uplands, will be much below earlier estimates in yield and quality, mainly owing to rust and the ravages of grasshoppers. The hay crop is large and of excellent quality, but alfalfa is being damaged by grasshoppers. Hops are improving, but the yield in some sections will be light. Fruit picking, drying and shipping are in progress. Pears are yielding better than expected in some places. Apricots are abundant. The second crop of strawberries is large and of excellent quality. Grapes and citrus fruits are in good condition.

Coast and Bay Sections.

Clear weather prevailed during the week, with occasional fogs along the coast. The temperature was too low for the development of crops, though all are in very good condition in most sections. Haying is practically completed and baling is progressing; the hay crop in most sections is large and of excellent quality. Grain harvest is progressing rather slowly. Barley is yielding a heavy crop in San Benito county and other places. Wheat will be lighter than estimated in most sections. Grasshoppers are increasing and doing considerable damage. There will be a large crop of sugar beets and hops in the Pleasanton district. Grape prospects are better than usual. Early apples at Cloverdale are nearly ripe, and there will be a good crop. Late cherries are better than expected. Other deciduous fruits are in good condition.

San Joaquin Valley.

Clear and warm weather prevailed during the past week, and grain and fruit matured rapidly. Good progress is being made with grain harvest. Wheat is light in the northern portion of the valley and fair to good in the central and southern portions. Barley will be fair and oats a good crop. Some new wheat is being shipped. Rapid progress is being made in drying peaches and apricots. Green fruit shipments are increasing to Eastern markets. Potatoes are being shipped freely to southern California and Arizona. Watermelons are maturing rapidly and a good crop will be harvested. Grapes are making good progress, and most varieties will make a good crop. The hay crop will be large and of good quality. Feed is plentiful and stock are in excellent condition.

Southern California.

Clear and warm weather prevailed during the week, with cloudy or foggy nights, and conditions were favorable for all crops. Grapes are in excellent condition and give promise of a large yield. Peaches and apricots are ripening. Walnuts are improving, but the crop at Anaheim will probably be below average. Citrus fruits are in good condition. The yield of honey will be better than expected. Grain harvest and hay baling are progressing. The hay crop is unusually large and grain will probably be the heaviest for several years. Sugar beet harvest has commenced in the vicinity of Santa Maria; the crop is said to be heavy and the earliest matured in the United States.

EUREKA SUMMARY.—Continued warm and dry in the interior. Hay harvest general; crop fully a month in advance. Potatoes and beets are a little backward, while a large acreage of peas is nearly ready to cut.

LOS ANGELES SUMMARY.—Hay is generally in stack or baled. Good yield of grapes is promised. Apricots are just beginning to ripen. Peaches will be a light crop. Berries are in good supply.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 21, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	32 66	65 21	46 31	60	48
Red Bluff	.00	33.81	31.52	26 16	98	60
Sacramento	.00	21.98	16.87	19 96	88	52
San Francisco	.00	23 45	20 59	22 67	62	50
Fresno	.00	12 09	8 04	8 78	98	56
Independence	.00	4 03	2.59	3.75	92	58
San Luis Obispo	T	23.57	16 99	20 15	80	50
Los Angeles	.00	19 52	8.72	16 48	78	50
San Diego	.00	14.32	4.40	8.23	68	58
Yuma	.00	8 69	1 00	2 89	104	56

THE FIELD.

Handling Second-Crop Seed Potatoes.

Potato growers in the warmer parts of California frequently write us of the difficulty of getting a good stand of late potatoes from the seed of the preceding crop and we have indulged in remarks upon the subject from time to time. The problem is much like that existing in the Southern States and the experience of Southern growers is therefore significant to us. The Rural New Yorker has secured from such experienced people several letters which we offer as a contribution to the local discussion of the subject:

A reader in Missouri wishes to know how to prepare and plant second-crop seed potatoes. Last year he planted some of these potatoes, but most of the seed failed to sprout, or rotted. How should he handle the seed after digging the first crop?

Florida.—Second-crop seed potatoes should be stored in the sunlight (spread out flat) until thoroughly blued, then moved to barrels or bins in a warm place, when they will sprout shortly. As sooon as sprouts show ½ of an inch long, plant.—Walter Waldin.

Tennessee.—If the inquirer can depend on a good season in the ground at the time of planting he can get a fair stand of second-crop potatoes by digging seed as soon as matured enough to germinate well, placing them in a damp place out of the sun, but where plenty of air can get to them. I prefer placing them on the ground, but not in a heap, leaving them there two or three weeks, at the end of which time, by carefully looking over the seed and picking those that show sign of sprouting, cut the largest ones, if preferred, and plant in well-prepared land, plowed up deep, but worked down firm. In this section, where it is almost always dry at that season, it is best to furrow out the ground fairly deep and cover seed with a hoe, putting about 3 to 4 inches of soil on it, pressing same down with hoe by placing foot on hill.—W. H. List.

North Carolina.—I myself have been unsuccessful in growing second-crop potatoes, and I lay it to the fact that I live in the Piedmont section, where the season is rather shorter than farther East. I expect your Missouri reader will fail on the same account. However, I will say that he might try a very early potato, planting as early as favorable conditions will permit; then, just as early as the potatoes are matured, dig seed and cut a piece (about one-fourth) off the side of every potato he wants to plant. Spread them out thinly under a good shade tree or some other place where they will get plenty of light, but not enough sunshine to scald them, and let them stay out ten days or two weeks, when they will be ready for planting. The clipping or cutting of the seed makes the sprout better and gives a better stand. They must also be covered very shallow when planted. I have abandoned the growing of second-crop potatoes, because it pays me better to grow, by heavy and liberal fertilizing, 500 or 600 bushels per acre in one crop, and follow with Crimson clover, which grows very fine after potatoes.—Robt. McAnally.

Virginia.—Two of the most important points to observe carefully in growing this crop are the "seed" and the soil. Before digging the first crop the tubers should be allowed to mature well. After digging, spread the tubers out thinly where the air and light can strike them freely. This does not necessarily imply that the sun should shine on them, but I believe some sunshine is an advantage. The tubers should be allowed to turn slightly green, and the "eyes" show some sign of growth before planting time. It is often the case that growers in the extreme Southern States use the small tubers in planting for this crop. But I have had much better results by using the large well-matured tubers, cutting them to two-eye pieces. I sprinkle them well with lime and then spread the pieces out to dry a day or two before planting. The cut surfaces then present a dry, corky appearance, which keeps the pieces from rotting badly before sprouting. The soil should be thoroughly prepared before planting. It is often the practice of some growers to keep the soil well prepared during late spring and early summer, so that it will hold moisture well when planting time comes last of July. However, some early vegetable crop, like beans, or peas, could be grown on the soil in early summer. If the soil is rich I have grown a good second crop on the same soil where I had harvested the first crop. The trench system has given me better results. Make the surface of the soil level and then make furrows about 4 inches deep, 3 feet apart, across the field. Plant the pieces 18 inches apart in the furrow, and cover with a plow. Run a light harrow over the ground just as the tops begin to come through. This will smother the young weeds, break the crust of the soil and help to conserve the moisture. Use some early variety like the Rose or Triumph.—R. H. Price.

Tennessee Again.—The best seed is grown on dry, limestone land in a dry year. The seed should be nearly or quite mature when dug. It will require three to four weeks to shrink, dry, and further ripen the seed after dug. The common practice is to spread the seed after digging under trees to facilitate ripening, and it remains there until needed to plant. In planting such large quantities this practice may be unavoidable. If we keep in mind the main idea, that we want to shrink, dry and predispose the seed to sprout, it will probably occur to one that the rain that sometimes falls on the seed thus spread would hinder that process. It does, and you want the potato dry from digging to planting. I do not think any process is known for sprouting a freshly-dug green potato. If it requires three to four weeks curing it bars the growth of this crop north of Tennessee, except as the climate on the Eastern coast may duplicate that of Tennessee. Seed a wet season of growth requires longer curing, and seed that has taken second growth requires still more time, or is to be avoided. We have found potatoes cured for seed under the shade of trees unfit for shipment, after a few rains, where seed kept dry was all right, under the same trees. Early digging of the first crop gives a more favorable seed for a second crop by enabling us to cultivate and stop the loss of moisture, that is then very rapid. Loosen the soil after every rain, for a hot sun on a solid soil carries the heat deep into it. Never cut a potato until ready to plant it. Some of the growers at Mobile, Ala., refuse to cut at all. They rot, they say. The soil is probably too wet when they plant. If they tried to get the soil too dry for planting they might hit it right. The fact that they rot is a key to the situation. Wet weather directly after planting is a special dread of the planter here, from just that cause—rot. The Triumph rots less, and sprouts slower than any other potato I have tried. Probably the best way in all cases to prevent rot would be to plant corn with the potatoes to mark the row, and plow the corn with narrow, long, keen calf tongues, and let the air to the potato. The grower who waits for the potatoes to mark the row before cultivation begins is almost sure to make a failure. Cut out corn when potatoes get up. If we plant in too wet a soil there is no chance to air the potato by cultivation, because the seed will rot in six days, or even less. The normal rainfall at Mobile would probably correspond with a wet season here, and the hot water trouble we have. In case of a thoroughly saturated soil it will require ten days or more to get the soil dry enough. Ground full of sod or cane roots, or anything that will act as a divisor of the soil, and let the air in, is of first importance. Rich garden soil in a wet season for planting is inferior to new soil filled with trash, and could be improved by filling with half-rotted straw. I have not discussed the trouble of a dry year. There is less to be said. If the season is too dry to sprout the seed I cannot help it. There are three ways of warding off drought: Cultivation, irrigation, and mulching. Mulching shortens the growing season by rendering the crop susceptible to frost. Just when the crop is doubling and trebling, it shortens the important end of the growing season. The reader may get an exaggerated idea from reading the above of the trouble in growing a second crop. I have seen fields in a year of good rainfall, where the stand was so good and the vines so rank you could not tell where the rows were.—W. H. S.

THE DAIRY.

Raising Calves on Separator Milk.

By Prof. H. T. French, Director of the Idaho Agricultural Experiment Station.

In any section where the dairy industry is in the process of development, and the manufacture of butter is contemplated or the selling of butter fat is under consideration, the question of raising calves successfully on skimmed milk is an important one. The use of the hand separator on the farm is one of the modern developments in dairying which has come to stay, and it is in connection with this feature of dairying that the experiments reported in this bulletin were undertaken.

In modern dairy practice it is no longer thought desirable, or even feasible, to let the calf run with the cow for more than twenty-four hours when first born; and this is done on account of physiological reasons more than any other.

Conditions of the Experiment.—In order to demonstrate the feasibility of raising calves on milk from which the butter fat had been removed by means of the hand separator (centrifugal) the following work was undertaken:

Five calves from grade cows, which had been purchased for experimental purposes, were selected for the test. The calves were not a specially promising lot. Some of them were not even high grades. They were what the average farmer would term "scrub cattle," with the emphasis on the first word.

Treatment of Calves.—The following method of feeding was the one used by us in rearing these calves and has become the regular practice in feeding all young calves on the College farm:

These calves were separated from their dams within forty-eight hours after they were dropped, and in most cases were allowed to suck only once or twice before being removed to the pens in which they were to be fed. The cows were placed in the stalls where they were afterward kept and milked. The cows were always placed in box stalls from a week to ten days prior to the end of the period of gestation.

After removing the calf it is necessary very often to withhold the milk for twenty-four hours, or until the calf gets real hungry, before it is easy to teach it to drink. Stanchions are used for confining the calves while teaching them to drink milk, and afterward for feeding, until they are entirely weaned four to six months later.

Whole Milk.—The calves are given whole milk from their own dams for the first five to seven days. This is weighed out to them, or carefully measured, to obviate the danger of over-feeding. Six to eight pounds is the limit for large, thrifty calves, and a great many will do better on four or five pounds twice a day. It would be better, no doubt, to feed the calves less but oftener during the day; but there are serious objections to this in actual practice, owing to the difficulty of warming the milk, or else milking the cows several times each day out of the regular order.

Stanchions.—The advantage of the stanchions for confining calves while drinking the milk and eating the grain is obvious. There is no butting of pails or of each other, and, best of all, the attendant is not annoyed by the friendly attentions of his subjects, when whetted by a keen appetite for the delicious milk they crave so much.

The stanchion is a simple device, made of light material and very cheap. They are made of 1x3 rough slats, 3 feet long, fastened with a bolt at the bottom and held at the top by a block, which is also held in place with a bolt through one end. The frame above is made of 1x6 and stayed by 1x4 uprights to hold it in place. The box in front is made of 1x12 material, with slats nailed across the top to separate the pails and to keep them from being easily overturned. The box in front has a tight bottom to hold grain, which is fed to the calves after the milk is disposed of. The stanchions occupy 18½ feet and accommodate ten head of calves at one time.

Method of Feeding.—As stated above, the calves are given whole milk fresh from the cow twice daily during the first five to seven days, at the end of which time a portion of the whole milk is withheld from each ration and warm separator milk substituted. At first not more than half a pint is substituted, and this is increased daily until at the end of three weeks the calf is on separator milk entirely, instead of the whole milk. When the feeder begins to withhold the whole milk and to substitute the separator milk, he teaches the calf to eat whole oats. This is done by placing not more than a tablespoonful in the box in front of the calf after it has drunk the milk. The calf knows nothing of oats; but in nosing about it will get some of the oats in its mouth, and in a very short time will learn to like them. Whole oats are preferred to rolled or ground oats, for the husk of the oat is then so thoroughly attached to the grain that it will be masticated with the kernel, and the calf, having sharp teeth, will have no difficulty in grinding it.

The ration of oats will be gradually increased as more of the whole milk is withheld, and separator milk substituted, until at the end of three or four weeks the calf will be getting half a pint twice a day. The amount depends on the calf, for some animals will eat the oats more readily than others. We have never had a calf refuse them entirely, and some animals will take quite a heavy ration. This is the manner of teaching all the calves on the farm to eat their first coarse feed, and is the way the animals in this experiment were reared.

It is found that there is quite a difference in the quality of oats for calves. We have found that an oat with a thin hull is best. The large, coarse, thick-hulled oats are not so readily eaten and appear to injure the calf's mouth. We are using a variety of black oat at present, but have used white oats quite as successfully.

Separator Milk.—Now that the calf is entirely on separator milk, a few suggestions may not be out of place. First and most important is the amount necessary. Too many overfeed, thinking that the milk is of little value, and, consequently, a large amount should be fed. This is a mistake. The calves under discussion did not get more than eight pounds—one gallon practically—at a single feed, and the majority of them did not take this amount.

The milk should be fed warm always. We fed it fresh from the separator at a temperature of 80° to 85°. If it were raised to 90° it might be still better. It is not safe to trust the finger to determine the temperature. A 15-cent thermometer is more accurate.

Other Coarse Feed.—After the calves have finished the ration of oats, which requires an hour or so, they are released and allowed to pass into a box stall. This stall is provided with feed racks about the walls, which are filled with the choicest hay the farm affords. The calves, even those five or six days old, soon learn to pick this tempting bit of hay, instead of sucking each other's ears, as they are apt to do when fed in the ordinary way. Eating the oats,

after drinking the milk, dries out the mouth, and the calf loses the desire to suck his neighbor's ears. In an hour, after turning the calves into the pen where the hay is found, they will lie down contented and happy. A pail or two of clean fresh water should be placed within reach of the calves during the day.

The pails in which the calves are fed must be kept clean and sweet. The milk, if fed fresh from the separator, will be sweet also. If any of the calves are inclined to scour, give an ounce of lime water in the milk. We always keep this on hand for such emergencies.

PASTURE.—Sometimes calves are turned into pasture too early in the spring. When the grass is very young and the weather is not warm, it is better to keep the calves in box stalls and feed them on hay with milk and grain ration. Nothing is gained and often too much injury results from turning the calves on pasture too early.

The calves under discussion were not turned out to pasture until May 10th, and then only for a short time each day. The milk ration was continued until the calves were four to six months old, and then gradually withheld and the ration of oats continued night and morning for a few weeks longer, or until the fresh hay was ready to feed.

During the hot weather of summer, when the flies are troublesome, the calves were turned into the pasture at night and kept up during the day. This practice we consider very important, for experiments show that calves will lose more from being worried with flies and hot weather than they can gain from food consumed under such conditions. In the fall the calves were placed in stalls and fed a ration of hay and carrots. Ensilage was added to the ration February 9, and from that time until May 10, when they were again turned to pasture, careful account was kept of the amount of feed consumed.

ACCOUNT OF FOOD.—Total amount of milk consumed, average of 150 days for each animal, 10,570 pounds, which, valued at 20 cents per hundred, amounts to $20.14.

Oats consumed in 200 days, 2000 pounds, at 1 cent per pound, $20.

Hay, 3025 pounds, at $8 per ton, $12.

Carrots fed during winter, 60 days, 600 pounds, at ½ cent per pound, $2.50.

Total cost of food for five steers, $54.74.

WEIGHT OF CALVES.—The calves were weighed the first day of each month and showed an average gain February 9, 1903, of 1 59 pound per day. The average weight at this time was 512 pounds. This is not large; at the same time it was made at a cost for food, not including pasture, of 2.13 cents per pound.

From six to twelve months of age is the critical and scrubby stage for calves reared on separator milk. At this period the calves present the most unattractive appearance of any time in their life. They develop a stomach out of proportion to the rest of their body and their coat is not quite as smooth as it is when calves run with their dams. However, the calves have learned how to eat and digest coarse feed in larger quantities than calves reared on whole milk. The digestive organs are better developed for practical feeding, from this period on to maturity, than in calves fed whole milk.

SOME DEDUCTIONS.—1. It is possible to raise calves profitably on separator milk by substituting whole oats in place of the butter fat which has been removed.

2. Calves fed in this way will do better on coarse feed alone than those raised on whole milk.

3. Early maturity is not hindered by this method of feeding.

4. The value of the butter fat saved was more than four times the value of the oats consumed.

5. There was $18 profit per head over and above cost of feed.

6. The steers were sold as "baby beef" at an average age of 22½ months.

7. The steers made an average gain of two pounds per day during a portion of the time (128 days) on coarse feed alone.

THE POULTRY YARD.

Why Eating Hoppers Kills the Turkeys.

S. J. Patterson, says the Oroville Register, is one of the few men in Butte who raises fowls and makes a close and careful study of their habits and life. He is successful because he is all the time finding out what causes sickness or disease among the fowls and learns what remedies are needed.

A man came along the road one day lately and saw Sam's fowls eating grasshoppers. "You don't know anything about turkeys," said the man. "Every one of those fowls will be dead in a week. I hatched out 1500, and when the hoppers came and they went to eating them all died within a week."

Sam asked what he fed the fowls, and the man said he did not feed them anything. Then Sam explained that the hoppers were oily and that the oil gave the turkeys the cholera and that killed them off. He told him that if he fed his turkeys wheat in the morning and kept them up until they were hungry enough to eat and then gave them another feed at noon, they could eat all the hoppers they wanted and it would not hurt them. Besides giving them wheat he feeds them plenty of condition powders, and the birds thrive and grow fat on the thousands of hoppers that they find this spring. Patterson says he now has a thousand old and young, including the chickens and turkeys.

Ostrich Farming in Cape Colony.

As so many Californians are either directly interested in ostrich farming, or have at least a speaking acquaintance with it, they will appreciate some interesting facts relative to ostrich farming in Cape Colony, which are given by Mr. Oscar E. G. Evans in the Transvaal Agricultural Journal. The industry had its inception in the early sixties, and has grown to enormous proportions. The chief port of shipment for the feathers is Port Elizabeth. From that place were shipped in 1862 1386 pounds, believed to have been mostly the feathers of wild birds sent in by hunters from the interior. The shipments had grown to 21,921 pounds in 1873 and to 131,279 pounds in 1881. The following figures show the increase in the weight and value of feathers exported from Cape Colony since 1889:

EXPORTS OF OSTRICH FEATHERS FROM CAPE COLONY, 1889-1903.

Year.	Weight, Pounds.	Value, Dollars.
1889	229,137	1,791,855
1894	350,404	2,422,398
1898	369,778	3,646,801
1903	490,066	4,605,154

"A few remarks," says Mr. Evans, "upon the manner in which ostrich farming is carried on in Cape Colony may be of interest to those farmers who have had no experience in this branch and whose farms may be well adapted for carrying on ostrich farming." He continues:

NECESSITY OF GOOD FENCES.—It is necessary that their runs should be well inclosed with a good fence. When once a farmer has his farm enclosed ostrich farming is simple and requires very few hands. All that is necessary is to keep one good servant to walk around the boundary fence every morning to see that no ostriches have fallen out through the fences, which they often do during dark nights if frightened by jackals or other wild animals. If there is much vivid lightning they are apt to stampede at night.

From 100 to 300 plucking birds may be run together in a large camp of about 2000 acres of ground. If the farmer wishes he may run cattle in the same camp with the ostriches, but it is not advisable to run small stock (sheep and goats) on the ostrich run, as they seem to trample and eat out the smaller soft weeds upon which the ostrich principally lives.

PLUCKING.—When the plucking time comes around it is necessary to collect the troop of ostriches. This is done by sending about half a dozen men into the inclosure on foot and a couple of men on horseback to bring the stragglers in. When they are all brought together they are driven into a small kraal (inclosure) about 40 yards square. In this kraal the plucking boxes stand. The birds are then caught and as quickly as possible small linen bags are slipped over their heads, a process which almost immediately conquers the bird, for, finding himself in darkness, he will stand trembling and ready to be pushed in any direction. With these bags over their heads they are then pushed into the plucking boxes. A man standing outside the boxes at each side gets hold of the wing and clips the feathers from it, then walking around to the tail clips the tail feathers also, until the whole troop has passed through the plucking boxes. Six men will pluck 150 birds in one day. The birds are now again turned adrift to run in their large enclosure in peace for two or three months (usually two months) until the quills are ready to be drawn, when they are again collected and passed through the plucking boxes.

The word plucking is likely to convey an erroneous impression to those who have no knowledge of ostrich farming. It would lead one to imagine that the feathers are pulled and dragged away, perhaps in a bleeding state, from the unfortunate ostrich, and so causing him great pain. In reality the clipping of an ostrich's feathers causes him just about as much pain as shearing does to a sheep. The feathers are usually clipped at six months' growth; that is, from the date of drawing the quills. At this stage the feathers are well grown and are just in the pink of their bloom and beauty, rich and full of luster. To draw the feathers at this stage would mean great pain, besides ruining the sockets in which the feathers grow. For this reason, therefore, the feathers are clipped to catch them in full bloom, and the quills or stalks of the feathers are left in. After two or three months the quill end of the feather, which was left in, becomes ripe and dried out to the very tip, and at this stage the quill is drawn. It now comes away very easily, and, if anything, is a relief to the bird, making room for the young feather which is already preparing to come out. Any man wanting to make money too quickly, and therefore drawing the quills before the time when they are ready, and consequently damaging the socket from which the feathers grow, would simply be "killing the goose that lays the golden egg."

GRAZING.—Ostriches do very well on most bushes. They eat grasses, too, but do not thrive so well on pure grass as where there is a mixture of bushes. Along valleys where the soil is deep and the large mimosa trees grow, with a mixture of "brakbosch" and the various kinds of "ganna" and "karoo" bushes, is found the typical ostrich pasture. The ostriches are very fond of limestones and pebbles, such as are found in river beds. These they eat greedily, for the purpose of grinding up and digesting their food. They will often swallow a pebble as large as a walnut or a bone the size of a turkey's egg.

ALFALFA FOR OSTRICHES.—Any farmer having means of growing alfalfa—that is, having water and irrigable lands—will find running ostriches on alfalfa very much more lucrative than growing maize or wheat or barley or any other cereal crop, which can be imported almost cheaper than it can be grown in this country. When you have alfalfa on your lands you can graze five ostriches to one acre all the year round on it, and good ostriches running on alfalfa will produce easily $24 to $37 each per annum. Thus from each acre you would get a return of from $120 to $185 per annum in ostrich feathers, or from fifty acres you would make from $6000 to $9250 per annum in feathers, and your expenses would be covered by $487 per annum. Ostriches are very small eaters and they do remarkably well when fed upon about three pounds of alfalfa hay per bird per diem; on this they will keep fat and thrive splendidly without any other food. The number of hands required to farm ostriches on alfalfa is ridiculously small compared with those required in growing cereals and other crops. In every way ostrich farming is cheaper and easier and much more lucrative.

BREEDING.—The breeding season for ostriches is from June until about the end of September. Birds, if well fed and kept thriving, will continue to breed all the year round, but the healthiest chicks are those hatched in August and September. In the breeding season the breeders are camped off in pairs, a cock and a hen in a small paddock or camp of about six acres. One acre in alfalfa will do. If, in camping off more than one pair of breeders, the wire fences should abut, it is always well to put a double fence with a space of a couple of yards between them, so as to prevent cocks kicking at one another through the wire fence. The cock birds at the laying period are very vicious, and in fighting with one through the fences are apt to break their legs. This is prevented by having a couple of yards' space between the fences. Breeding camps should always be put near the farm homestead. The breeders should be fed daily, in the morning, about five pounds of corn or barley to each pair. If any green stuff such as alfalfa or green barley is available, a small ration of this will be good too, or even the leaf of the prickly pear cut up. A supply of crushed bones or limestone should always be lying at one end of the camp, so that the birds may take it as they require.

The cock will always select a spot for the nest, and, going down on his breast bone, will kick out a round, dish-shaped hollow to which he will coax the hen, and a few days after the nest has been established the first egg will be noticed in it. The hen will usually lay about a dozen eggs, when the hatching process will start. It is always well, after the nest is thoroughly established, to work up a slight earth bank around the edges of the nest to prevent, in case of heavy rains, any water flooding into the nest and inundating the eggs. It usually takes forty-two days for the eggs to hatch. While the chicks are coming out the eggs should be carefully examined each morning and evening, as sometimes one or two out of a nest of chicks will be unable to break through the shell of the egg. If this is noticed the egg may be gently tapped just enough to crack the shell, when the chick will very soon kick itself out. After the chicks are a day or two old they should be removed from the parent birds and given to a native man or small boy to herd. He should keep moving gently with them on any spot where there is a growth of something green. The chicks very soon learn to look upon the boy as a guide, and will follow him about just as they would have done their parents. A fortnight after the removal of the chicks the parent birds will be preparing a new nest.

The small chicks after being removed from their parents should be carefully put in a packing case at night with good, clean, dry sand or loose, dry, corral manure, covered over the top with old bagging and placed in a room. After they are about two or three months old they can sleep loose on the floor of the room, and at about six months they will stand nearly as much cold as the old birds. Care should be taken when they are small not to cover them up too warmly in the packing case. By putting your hand in under the covering it is always easy to feel if the heat is too great, in which case one corner at the top of the box might be left slightly open. When the chicks are about seven months old the first feathers (called spadonas) can be cut, and the quills drawn two months after the cutting of the feathers. The first feathers usually bring very little; a fair average per chick would be about $2.43.

Incubating is also successfully carried on with

ostrich eggs; but nature, perhaps, is the best in the long run.

Selection.—At the present moment a great deal of attention is being paid to selection, and any farmer wishing to start ostrich farming should see that he starts with good stock. There is nothing which increases faster than ostriches, and, by buying a few pairs of breeding birds of good quality, one can stock a farm with hundreds of good ostriches. It is a common thing to pay from $243.50 to $487 for a really well-bred ostrich of first quality, and there is nothing that gives a better return than buying good stock—especially where they are run on alfalfa fields—as a "rip" eats just as much as a good ostrich, and the good one returns you three or four times as much as the "rip."

HORTICULTURE.

Local Wisdom on the Pear Blight.

A writer for the Vacaville Reporter gives an essay on the pear blight and its treatment, which may have both a promotive and restrictive influence and in both ways do some people some good. He writes:

Just now we are blessed hereabouts with a premature ripening of pears and an extraordinary shortening of the life cycle of the tree, known as pear blight. Science tells us that its causative organism is not a fungus nor an insect, but a starch-eating bacteria called Bacillus amylovorus. It says that it is not spore bearing, is killed easily by drying, and is therefore not capable of being blown about by the wind. It says, furthermore, that it is introduced by insects, into the flowers or very tender leaf buds, suckers and shoots, where there is no thick epidermis to prevent its entrance into the circulation of the tree. Again, it can be inoculated into the bark and reach the circulation by artificial means, but being non-mobile and incapable of penetrating, is unable to enter the pear tree alone.

Not Like an Animal.—Now, here we are with a bacteria similar in its appearance and workings to that causing typhoid fever in the human subject, and what are we going to do for it? There is no animal heat and it certainly cannot produce the high feverish heat of typhoid, but the sap is pouring into the twigs and leaves and the destructive bacillus creates such a disturbance that the cells burst and a gum exudes and stands in sweaty beads on the twigs or runs down the limbs. The millions of insects that are constantly about the trees for the purpose of feeding upon this very sap from the blossoms or elsewhere that is available find it here ready served, apparently, to meet their wants and take up a quantity of the bacteria-laden sap. Now, they fly to the tender growth and flowers of other trees and deposit some of the bacteria and inject them into the tissues with sharp beaks, with the result that the orchard is soon disfigured by thousands of blackened and withered twigs and branches. The germs spread with the circulation until the larger limbs and finally the whole tree is involved. Here the disease winters over and in the spring when the circulation becomes accelerated the bacteria impede the activity, the inflammation again ensues and the bark breaks, allowing the sap to exude, again furnishing ready food for the eager insects and consequent spread of infection.

We had supposed that bacterial diseases were confined to animal organisms and were loath to attribute pear and walnut blights to this cause. When it was conclusively demonstrated, naturally the first experiments for control were by inoculation of antitoxic or remedial materials into the circulation, as has been so successfully done in many human and animal diseases caused by bacteria. So far, however, these experiments have been totally without favorable results, because the circulation of the tree is too slow to allow the remedy to get to the places desired. Other forces also contribute to the failure to secure proper action in plant tissues.

No Easy Way.—So far as we know at present there is no way to fertilize the soil, to inoculate into the tissues, to spray or to put remedies about the roots in such a way as to be effective, and all these methods have been subjected to scientific and systematic experiment. There remains only one effective remedy—that of elimination. The orchardist must prune out all the affected parts of the trees and burn them. The summer pruning is an expensive proposition, since it requires a considerable amount of work that will not be required in the winter and requires repeated pruning as the infection becomes evident. However, while taking the blight while in the tops it saves much of the tree that will be affected and have to come out when the winter pruning is done. This is partially counterbalanced by the fact that the limbs must be set back farther than evident infection in the summer on account of the more active circulation. In winter pruning the blight is more evident, in most varieties of trees, in the larger limbs, and ought to be successfully removed by any careful orchardist. In both summer and winter pruning an ironclad rule should be made—that all instruments must be disinfected after cutting into blighted parts, so as not to introduce the disease into new tissues with the blade.

Evidently it is useless for a single orchardist to remove blight, because it can come in readily from the trees of his neighbor; but in an isolated country like the Vaca valley it can be universally eliminated, and the infection coming in from a distance will be so small that it can be controlled with a very slight expenditure of time and coin and the pear crop can thus be saved in this region. Money thus spent promises excellent returns at the present prospects of high prices for pears.

The farmer is notorious for being "easy." He has been immortalized in prose, verse and song in direct ratio as he has been victimized, and though blessed with abundant company he shows no disposition to resign his role entirely.

Now, where does the farmer exhibit his gold brick tendencies in this proposition? Certainly not in a limited amount of ignorance in regard to the bacteria or its workings, for even the most expert are still somewhat at a loss. Enough is evident, however, so that he ought to know that the blight will not succumb to either natural agencies or patent medicines.

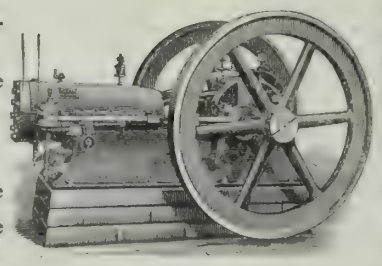
How it Works.—He meets an "expert" down town who tells him that it is curable by an application of spray, the ingredients of which are carefully kept secret. It is not an easily obtainable production, but is the result of years of patient toil on the part of the inventor. It has certain mysterious ways of working which the farmer need not even know, and should be sprayed on liberally, injected into the trees or poured about the roots at regular intervals, and will kill anything from codlin moth to shot-hole fungus.

The victim dips his fingers fondly in the mysterious, greasy mess, rubs it between thumb and finger, lovingly drinks in its putrid odors with intense interest and delight. Then he reaches for his wallet, but pauses as he sees in memory the dupes of the ages and wonders vaguely if he is being preyed upon. The "expert" now clinches the deal firmly by declaiming to him that "it will cure, since its very nature compels it to drive out the bothersome little bacteria by being subcutaneously ingratiated with the inner parallelogram of the diaphragmatics, whence it permeates into the membraneous hemorrhages in the outer cuticle of the basiliconthumaturist and breaks up the septicaemic irregularities of the circulation"—and the victim buys, takes the liquid home as proudly as a small boy with a red express wagon and spends many dollars spraying it on that might be used in pruning with appreciable results.

Let's give the medicine man the go-by for once in our lives and make a successful elimination of the pear blight in Vacaville by the good old arm-strong method, with the aid of a trusty saw and a good pair of pruning shears.

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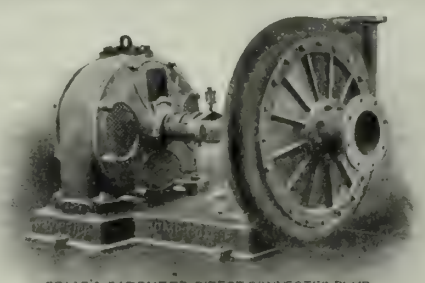
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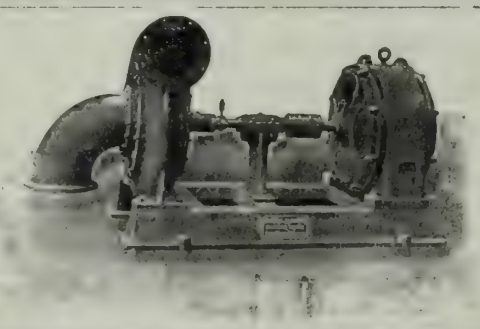
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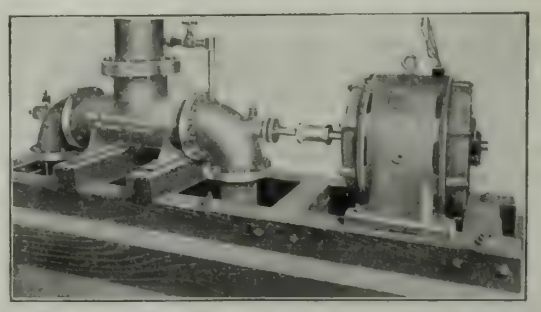
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Agricultural Review.

Fresno.

EARLY APRICOTS. — Sanger Herald, June 15: John Walton remarks that two years ago he started on a trip to the coast and went into the orchard to try and find a few ripe apricots, but was unable to find any. At this writing his apricots are picked, dried and ready for the market. He has been offered 6c per pound, but hopes to realize 7c.

Glenn.

FINE CHICKENS. — Willows Journal: George Mellor, who makes a specialty of raising white and buff Orpington chickens, has some particularly fine cockerels and pullets this year, which he will exhibit at the Lewis and Clark Exposition. He has one cockerel in particular which is a perfect specimen of the buff variety. It is six months old, weighs eight pounds and is perfect in shape and color.

Kings.

FIRST DRIED APRICOTS. — Hanford Sentinel: The first dried apricots of the season delivered to the packing houses here in Hanford came from the Del Monte Vineyard Co. ranch, of which W. F. Curtiss is the manager. The goods were delivered Saturday, June 10.

FIRST WHEAT. — Charles Coe, the warehouse man, says he commenced to receive new wheat in storage Wednesday, June 7, at Lemoore, and June 10 received the first for the season at Hanford. He states that almost all of the wheat this year is of the Sonora variety and it is not of the best grade.

BUYING SIMONIS. — Paul Peninch is shipping by express all the good Prunis simonis that he can buy. He has leased or bought the fruit from several orchards in this county, and, by thinning the trees, he produces a fine quality of this most excellent fruit. Some he shipped were as large as apples. He ships to Salt Lake and gets big returns there for the product.

Monterey.

BIG BARLEY CROP. — Salinas Index: V. Tavernetti, who farms the T. J. Field tract of land, between Gonzales and Soledad, expects 15,000 sacks of fine barley. He owns two threshing outfits and expects to begin threshing on June 22.

Orange.

MONEY IN CELERY.—Anaheim Gazette: Celery growers look forward to the most successful year in the history of the industry. Last year a total of about 3000 acres was harvested, and this year the area will be greatly increased. According to the annual report of the secretary of the Celery Growers' Association, a total of 2,064,670 dozen bunches of celery was sent out for the season just closed. For this the growers received in cash $331,862.11. Packing house expenses for handling the crop amounted to $2390.98, a remarkably low rate. These figures apply only to the crop handled through the association, and do not include independent shipments. The association last year controlled the major portion of the trade, and has been so satisfactory in its dealings with growers that this year it bids fair to have the handling of the entire output of the peat lands. Preparations are being made to care for about 2500 carloads the coming season.

San Benito.

REDUCED HAY YIELD.—Hollister Free Lance: After a careful investigation Manager R. P. Lathrop of the Lathrop Hay Co. places the hay crop for this season at 23,000 tons, which is about 3000 tons short of last year's yield. The yield is not only short, but the hay is weighing lighter than it did last season. The quality is also below standard because of the prevalence of red leaf and rust. While there are some exceptionally fine crops, the most of the hay will be of medium grade.

San Diego

BEE MEN WILL POOL HONEY CROP. —Union, June 15: Members of the San Diego Honey Producers' Association met at the Chamber of Commerce yesterday and decided to pool their crop and work on the co-operative plan this year. The scheme is similar to that which the raisin growers have followed for a number of years. The association contains many of the prominent bee men of the county. It was voted to rent a warehouse in the city and have all the honey brought to this place, to be graded and sold, or held for better prices if the market is not in a satisfactory condition. It is thought that if most of the honey producers in the county bring their honey here the prices can to some extent be controlled. The price at present ranges from 4 to 4½ cents a pound for extracted honey, and it is possible that it will fall below 4 cents. If so, the honey will probably be kept until it goes up again. The association appointed Z. Quincy inspector and grader and Henry Perkins and Roscoe Hazard to look after the warehouse. It was also decided to meet again on the first day of August, at the Ramona Tent village, to further consider the proposition and to hear reports on how the new plan is working. The estimates of the different members as to the value of the honey crop this season varied greatly. Some put it as low as $20,000, while others thought it would at least reach the $100,000 mark. Most of them thought that the season was not far enough advanced to make any sort of a reliable estimate.

San Joaquin.

FIRST NEW RYE.—Lodi Sentinel, June 15: M. P. Stein & Co. of Stockton have received the first carload of new rye. It was grown by H. E. Wolfe at Garrison switch, on the Corral Hollow Railroad, and is very fine and plump. Mr. Wolfe secured from six to seven sacks an acre on the same ground that last season he only harvested about 2½ sacks.

HAY CURING FAST.—Stockton Independent, June 17: The warm days have had a most beneficial effect on haying and the farmers have been able to cut a large acreage each day. The sun has been drying it out at a fast rate and it will not take long for the cuttings to be ready for baling. The sickles are busy in all sections of the valley and a large quantity of feed will be cut this season. The quality is spotted according to the vicinity in which it was grown. A large portion of the crop will be above the average, but the dealers assert that, unless there is a greatly increased demand over that of a year ago, the prices are liable to be weak. Should the foreign demand improve, it is possible that hay will bring a good price this year. At present everyone appears to be pursuing a waiting policy.

GRAPES AND ALMONDS.—Lodi Herald: Eleven cents is offered for almonds, which growers think too low, and but few sales are reported. The price of $150 per acre, buyer to harvest the yield, is about what may be expected for table grapes before the season opens.

EPIDEMIC OF INFLUENZA —Lodi Sentinel: Influenza is prevalent among horses in the vicinity of Stockton, and the failure of owners of animals to recognize the seriousness of the malady has resulted in the death of quite a number of valuable horses. A man named Allen, residing 8 miles from Stockton on the San Joaquin river, has lost nine head during the last two weeks. On South Center street, in Stockton, there are several dangerous cases. The veterinary surgeons have received calls from many places, showing that the disease sprang up simultaneously in different localities in that region.

TURKEYS DESTROYING GRASSHOPPERS.—E. C. Dickinson, from Ripon, reports grasshoppers devastating fields in that vicinity by devouring everything green in their course. Perry Yaple of that town has 600 turkeys which he turned into his alfalfa fields. The turkeys have arrested the destructive work of the locusts by devouring the insects. While the hoppers are being thinned out by the fowl the latter are thriving.

Santa Clara.

CHERRIES, PEARS AND PRUNES LIGHT.—Campbell Interurban Press: In many orchards there were not enough cherries for family use, where heretofore many tons were marketed. The prices being good—10c to 12c per pound—caused the owners to go over their trees, which otherwise would not have paid for the trouble. It is said this will be a bumper year for apricots and the crop looks fine. The prices are not what they should be—$25 being named for choice canning Moorparks, and the price ranging from that down to $14 or $15. Those who are fortunate enough to have pears have a bonanza this year, we having heard of $70 per ton having been paid, and the ruling price is about $60. We have no reason for changing our estimate on prunes. The past week we have covered much additional ground and find only a very few places where a quarter of last year's crop is to be found, the estimate being nearer a tenth, and it is surprising to find the number of places where that figure would be entirely too high. In fact, the great majority of places for miles in either direction from Campbell will fall below that figure, if the owners' estimates are worth anything. The Imperial prune crop is practically nothing, where usually good crops have been secured.

Solano.

FIVE THOUSAND ACRES MARSH LAND SOLD.—Suisun special to Sacramento Bee: The most important real estate transaction that has been made in Solano county in many years has been closed by Edward Dinkelspiel, editor of the Solano Republican, and a well-known real estate man, representing a syndicate of influential men. The purchasers include E. Dinkelspiel of Suisun and Frank Maskey and Joseph Harvey of San Francisco. The tract of marsh land purchased consists of about 5000 acres and the price paid is reported to have been in the neighborhood of $120,000. The purchase comprises the famous Chamberlain tract, recognized as the finest duck shooting land in the State. For some time the reclamation of marsh lands in Solano county has attracted considerable attention, and the successful experiments made on a small scale will unquestionably form the precursor to an extensive scheme of reclamation. The acquisition, therefore, of the Chamberlain tract will mean much for Solano county. The land on the other side of the railroad track and running for several miles along the Suisun slough is unexcelled marsh land and has been pronounced by experienced men to be capable of producing crops of various kinds, if reclaimed and put under cultivation. It is without doubt the finest asparagus land and if devoted to this industry will yield the owners in the neighborhood of $150 per acre, clear of expense.

ABANDONING HARVESTERS. — Marysville Democrat: No less than half a dozen farmers in the vicinity of Rio Vista, who are conducting operations in the adobe sections, have determined to abandon the use of harvesters this season and will revert to the use of headers and stationary threshers. It is claimed that the harvesters are the cause of much land becoming foul. With the stationary threshing outfit the bad seed can be destroyed, but with the harvester it is scattered over the ground. The straw can also be better handled and would pay considerably toward the expense of harvesting.

Stanislaus.

SUGAR BEETS FAIL.—Stockton Mail: The sugar-beet crop in Stanislaus and Merced counties this year will be largely a failure. Although earlier in the season the beets gave promise of doing exceptionally well, in the last three weeks a blight has struck them. Some 3500 acres were planted to sugar beets under contracts with the Hawaiian sugar concern, and on the Patterson ranch, on the West Side, the Alvarado Company has some 500 acres of beets planted as a test crop. The latter company has entirely abandoned its beets there. The money loss on the beet proposition will be considerable, although the sugar company will be the heaviest loser. On practically the whole acreage the sugar company had made advances of seed, Japanese labor, implements, etc., which will amount to nearly if not quite $6 an acre, and this will be all lost, as the planter, by the terms of the contract, was to repay this money if he made a crop. The loss to the company will be somewhere in the neighborhood of $30,000, other outlays and expenses considered, and perhaps more. The failure is attributed to an unfavorable season.

BARLEY YIELD HEAVY.—Modesto Herald, June 15: Barley is coming to all of the warehouses of the Grange Company. The first was received Thursday at the Modesto warehouse from Claude Maze. It is 15-sack barley. I. L. Freeman of Salida also warehoused barley on Thursday. The yield as so far indicated is from ten to fifteen sacks to the acre and the quality is very good — better than last year, although there is some smut. The best yield so far reported comes from a tract near Claus, owned by Earl Adams, that didn't look very good. It is turning out twenty sacks to the acre. New barley is bringing 95 cents here. A lot of rye brought into Montpelier by M. M. Rouse brought $1.25. To all appearances new wheat will bring from $1.40 to $1.50. Dee McPike from Westley says that barley is running from fifteen to twenty-two sacks per acre, of good quality, and that a piece or two of winter-sown will run eighteen sacks. He places the average at fifteen sacks. One of his pieces ran twenty-two sacks and one of the pieces on the Patterson tract ran as much. He estimates the yield of the wheat at from six to eight sacks.

STEAM HARVESTER. — A steam harvester is operating in the grain fields in the Grayson-Westley locality. The plant comes from Chico. It comprises a traction engine and a big combined harvester. An auxiliary engine operates the separator and header, both the traction engine and the auxiliary engine employing crude oil for fuel. The plant harvests from seventy to eighty acres per day. The barley over there is turning out from ten to seventeen sacks per acre, averaging perhaps twelve to fourteen sacks. It is of very good quality. The wheat does not promise to exceed five or six sacks to the acre.

Sonoma.

SPRING WOOL SALE.—Cloverdale Reveille, June 17: Thursday was spring wool sale day in Cloverdale and quite a number of the growers were in town ready to dispose of their product, provided they could realize what they believed it should bring—30 cents per pound. The buyers could have secured the entire clip at that figure, but they declined. No sales were reported for that day, but on Friday afternoon 28 cents was being offered and a few small sales had been made at that price. Some of the growers were steadfast in their refusal of the offers made by the brokers, evidently having confidence they could receive a price nearer the 30-cent mark. At the spring wool sale of a year ago the average price paid was 21 cents. Not since 1880—when 29 cents was paid—have growers received such a high figure as has been offered them this season.

SALE OF APPLE CROP.—Santa Rosa Republican: W. A. Griffith of Forestville is reported to have sold his apple crop of 1905 for $4500. He has thirty acres of trees, about one-half of which are now bearing fruit, and he estimates that the produce will be from 12,000 to 15,000 boxes, for which he will get 37½ cents per box, the purchaser to pick and box the yield.

RETURNS FROM WOOL.—Healdsburg Enterprise, June 17: Mr. D. Walgamott of the Rock Pile ranch was in town Friday. He sold his wool at the Cloverdale sales Thursday for 29 cents. Many of the growers had not sold yet and were holding out in hopes that 30 cents would be paid. Mr. Walgamott realized over $2,400 from the sale of his wool.

Sutter.

GOOD SAMPLE of MACARONI WHEAT. —Yuba City Farmer, June 16: Prof. L. A. Fitz last week gathered several fine samples of the genuine macaroni wheat from the experimental farm in this county. The wheat is bearded and the heads are large and long. The meshes are full of good big kernels and the sample gives every indication of curing up well and making a big yield. This is one of the strongest of wheats in gluten and it has been the endeavor of the department for years to have it grown successfully in this valley.

GRASSHOPPERS AFTER ALMOND TREES.—The grasshoppers in the foothills of the Buttes near the McMilin's place are becoming thicker than ever and recently came down into Mr. McMilin's almond orchard. Some of the hoppers have wings and fly for some distance. They eat the foliage of the tree and the hull of the green nut. The Horticultural Commissioners recommended the use of arsenic and bran to stop them in their travels and no great damage is looked for, as the insects are confined mostly to the dry pastures on the hills.

HOP CROP NOT LARGE.—According to reports from the hop fields in this county, the crop will be about 25% short of what it was last season. The roots did not throw out the usual number of vines and the weather conditions have not been favorable during the past spring for the usual healthy growth.

Tehama.

SHIPPING APRICOTS NORTH.—Corning Observer, June 15: In the neighborhood of 800 crates of apricots have already been shipped to Portland and the season is not yet over. They are bringing good prices this year, the market having continued strong. Seventy-five to 90 cents per box is the average price, meaning a net profit to the shipper of 1½ to 2 cents per pound. The heaviest shippers are George Atkins, Wm. Inns, R. McEwen, G. Atkinson, W. H. Samson and C. Radebaugh.

Tulare.

BOUGHT THE FIRST GRAIN.—Porterville Messenger: Thomas G. Aitken of Visalia, agent for Balfour, Guthrie & Co., through the local representative, Robert Horbach, purchased the first grain in this part of the county this season, the deal being for two carloads, or 600 sacks, of the best wheat that will be shipped out of this vicinity this year. The wheat was grown by John Sinclair and F. M. Carlisle on section 21, southwest of Terra Bella, and we understand the price was better than $1.30. The wheat is from the first cutting anywhere around here and the grain was too early to be affected by the rust. It is plump and full.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

My Old Clothes.

I used to have a suit of clothes
  All rags and paint and dirt,
What luxury it was to wear
  A suit I couldn't hurt!
Secure within that wreck of cloth
  I grovelled on the ground;
In garret, stable, garden, yard,
  Primeval bliss I found.
It waxed familiar with the woods,
  The thickets, marshes, brooks.

It carried rents and burrs and mud
  From all the forest nooks,
I got down close to Mother Earth,
  My spirit seemed to root
  And spread its filaments and grow
  Within that mouldy suit.
But ah, my wife, in vandal mood,
  One hapless cleaning day,
In valiant fit of tidiness,
  Gave my old suit away!

And now I weed the garden walks
  At length of formal hoe,
And keep within the proper paths
  When to the woods I go.
I've lost the sense of sweet, warm dirt,
  The kinship with the ground;
I must be careful of my clothes
  Whene'er I tinker 'round.

I do not own a single suit
  But claims my constant care,
No shred of blessed cloth that I
  Obliviously wear.
Before my oldest suit is fit
  For either work or fun,
A solemn year—at least a year—
  Must circumspectly run.

O, woman, woman! prim and neat,
  The flower of humankind,
I'd not abate your daintiness
  And purity of mind;
But, oh, with heavenly perfectness,
  Your graces will be girt
If you will let a happy man
  Just wallow in the dirt! —Puck.

A Little Ambassadress.

"Come in!"

My office door opened very gently, and a little face I knew well peeped round. In sheer astonishment I dropped my pen.

"Kathleen!" I said. "How in the world did you get down here? You're not by yourself, surely?"

"Oh, no; course, nursie's with me," and the blue eyes smiled at me so sweetly; "but she's gone shopping. I'm not to go till she comes for me."

"But what will mother and auntie say? They'll think you're lost."

"I'm too growed up to get lost," she said, with a dignified little air.

I could not help smiling.

"Now, you little rogue," I said, "when I've helped you off with that pretty blue coat and hat I shall expect to be told why you've honored me with a visit to the city during business hours."

She settled herself sedately in a chair opposite to me, quite unconscious of the pretty picture she made with her mass of fair hair and her sweet little face.

"It's a most 'portant visit," she said. "I've come to ask you to my party next We'n'sday."

"Indeed? I shall be delighted to come. So that's what brought you down here, is it?"

I had heard great tales about this party, but not from Kathleen. This was evidently her surprise for me.

"Shall I be expected to do anything in particular?" I asked.

"You'll have to make believe all the time, like you always do at our house."

This was certainly a candid statement. I wondered if the rest of the family shared the same view. I hoped not, because I was, as a rule, particularly serious after Kathleen had gone to bed.

"Aunt Merva will be there, of course," I ventured to suggest.

"'Course she will," replied Kathleen.

Then she made a tour of the room, came back and resumed her seat, and asked me seriously: "Is this where you play all by yourself in the daytime?"

"Well, yes, I suppose I do."

"Do you keep your toys in those big tin boxes?"

"Well, they're not toys like those in your nursery."

"Do you sit here all by yourself, then?"

I nodded.

"And never feel lonely?"

"Sometimes," I said smiling in spite of myself at the serious little face.

"I heard mummie tell daddy one day you were a lonely man."

"Oh!"

I was certainly hearing some home truths.

"But you won't be lonely when you come to my party, will you?"

"No, dear. I like to come as often as I can to your house," and I spoke the truth.

By this time Kathleen's nurse had returned—I expect she had been waiting outside all the time—and with strict injunctions "not to forget the party next Wednesday" my little visitor kissed me good-by, and I tried to settle down to work again.

But a pair of blue eyes would keep dancing in front of me on my blotting pad. Sometimes I thought they were Kathleen's and sometimes I thought they were—some one else's. Kathleen's eyes and her Aunt Merva's were strangely alike. I had noticed it before.

The room seemed quite cheerless now that she had gone.

In the intervening days the postman left strange notes for me.

Sometimes the missives were stuck together with jujubes, but I had no difficulty in deciphering the signs. They read: "Don't forget the party next We'n'sday." As to the crosses—well, the most ignorant person knows what those mean in a letter.

"We'n'sday" came at last, and, of course, I went to the party. It was a great success. The house was turned upside down by a merry crowd of little folks who kept the fun going until long after they ought to have been in bed.

Kathleen queened it all very prettily, and after the last little guest had departed and the blue eyes could scarcely keep open, she persisted that she wasn't a little bit tired, "on'y hungry." That was a subterfuge she was always guilty of at bedtime.

Next day I saw Kathleen in the park and we discussed the party.

"You were a funny man," she said.

I was glad to know that I had given satisfaction in this direction.

"Did you learn all those stories from pitsher books, or were they just make believe?"

"Both," I said.

"And you didn't cry when you had to go home like little Charlie did, did you?"

I assured her I was able to refrain from weeping.

"And you liked me the best of all the little girls there?"

"Of course I did."

"Quite sure?" she said coaxingly.

"Quite sure," I repeated.

"Then mummie was wrong," she said, triumphantly.

"How's that?" I asked.

"Well, when mummie and Aunt Merva came in to say 'Good-night,' I heard auntie say how fond you were of me, and mummie said, 'Yes, and I know some one else he's very fond of, too, or would be, if she'd let him,' and auntie went quite funny, and said: 'Don't be ridiklus, Daisy'—Daisy's what daddie calls mummie—but mummie only laughed and said: 'I don't think you're always kind to him.'"

Kathleen stopped to take breath after this long recital, and then went on: "So after mummie went downstairs, and auntie brought me a sweetie 'fore I fell 'sleep I asked if it was true if she liked some little girl better'n me. Auntie said 'No,' and then I asked her if she wasn't always kind to you. Auntie said, 'Perhaps not, sometimes.' Then I said she ought to love you like I did, 'cos you were lonely and had no nice little girl of your own like my daddy had. Then she stooped down to kiss me, and her cheek was quite wet, just as if she'd been crying. I've never seen Auntie Merva cry before."

There was a serious look in Kathleen's blue eyes.

"What made Auntie Merva cry, do you th'nk?" she asked, quite distressed.

"I think I can guess," I said, and with a full heart I kissed the little upturned face.

Kathleen had told me something I wanted to know—something that I have been grateful to her for telling me all my life.—Alan Sanders in Baltimore Evening Herald.

The Only Way.

Stop in a street and stare up at a building,
  Stare at a mast or a window or roof;
Mark ye how quickly the folk gather to you!
  Few have the courage to linger aloof!
And from the incident draw the deduction.
  Patent, inspiring, I think, on the whole;
If in the world you would have people with you
  Do something, if only to stare at a pole!
—New Orleans Times-Democrat.

"Polly Porter."

Perhaps all parrots have equally remarkable memories, but twenty-five years' acquaintance with "Polly Porter" enables me to say that he never forgets what he has once learned. Like other parrots, when he is alone he exercises his memory, as if amusing himself. Then it is that Polly Porter chatters in sentences; laughs aloud, hysterically; calls, in various tones, commandingly or beseechingly; calls the names of servants who, but for Polly, would have been forgotten; calls the cat; whistles for dogs who were about him years ago.

Polly's cage is in the bow window of the dining room—a good place for keeping an eye on the family. When the father rises from the breakfast table Polly advises: "Hurry! Hurry up! Hurry!"

Later, with the first movement preparatory to the children's start for school, he repeats sharply: "Hurry up! Hurry up! Hurry!"

When a guest comes in he says briskly, "Why, how d'ye do?"

When he calls "Good-by" to persons passing on the street it seems almost certain that he reasons about the coming and departing guest. He quickly notices little children; coming to one particular corner of the bottom of his cage, he flutters before a little one, attempting baby talk, which is very funny, ending with "Beautiful child! Beautiful child!" and a loud laugh.

When the house is quiet and his mistress has a visitor in the parlor Polly craves attention.

He repeats the children's names, almost as if he were calling the roll, in sweet, low tones. Then he says "Mama!" over and over, in a child's voice, till it is common for a visitor to say, "Do answer that child," or "Some one is calling you." He comes very near to telling tales, saying, "Ah, ah! naughty boy!" with great severity.

Polly is most impatient at breakfast time, when he shrieks till he receives attention: "Polly wants coffee! Polly wants breakfast!"

He takes a piece of bread cautiously; examines it; if it is not well buttered he throws it down. He enjoys a bunch of grapes, holding it down with one claw while with the other and his beak he opens grape after grape, eats the seed and casts the pulp away. He easily crushes a pear or an apple to get at the seeds.

Last Christmas Polly was sent by his owner, a New York boy, to friends as a present. They were told of his liveliness and astonishing powers of speech.

For some months Polly moped and said nothing, but at last began calling members of the family by name. If let out of his cage he fought the pug and whipped the cat; when shut up in his cage for punishment he would persistently work at the wires till he would force them apart and walk out defiantly. Recently he began upon his old lessons, and now repeats the cries of the newsboys in the street: "Extrah! Extrah! 'Journal'—'Sun'—'Herald'!" And he sings quite well "Yankee Doodle," which was taught him last summer.

Good-by, Polly!—Mary Rice Miller in June St. Nicholas.

There is no nicer spring breakfast than a sliced green pepper cut very small and cooked for ten minutes with two peeled and diced tomatoes in a little butter; add four eggs lightly beaten and stir as for a scramble.

Grown Suddenly Old.

"Have you ever noticed," said a woman recently, "how the women you know will go on appearing the same for years, and every season you will hear people say, 'How well Mrs. So-and-So is looking!' and then suddenly, without rhyme or reason, they will 'go crash'—and look about ten years older in one year? I have noticed it often. I do not mean the effects of ill health, or worries of any kind; I simply mean, as I say, they 'go crash' for no apparent reason.

"I have studied the matter somewhat, chiefly with a view to my own appearance, and I have come to the conclusion that a great deal of it is in the way we dress, or, rather, contrive to dress, for it is the changing one's style that so often proves fatal. Of course, we must grow older—that is a foregone conclusion. But as long as we do our hair and dress in practically the same styles the changes that must take place in even the best preserved women are not very noticeable, and in some women are hardly perceived at all. But it is a great mistake, for instance, for a woman who is past her first youth to change the fashion of doing her hair. It accentuates every mark of time and calls attention to every defect. A change in the fashions too rashly adopted also often adds years to the appearance of a woman. The modes must be followed very slowly and cautiously.

"Bright colors also are a great mistake. I know a woman who wore mourning for many years and was wonderfully youthful in her appearance. One spring she went into colors and jumped from forty to fifty at a bound. Every one noticed it If she had had the good sense to continue her black with just a touch of color, she would not have lost her reputation for youthfulness.

"Hats just now are dangerous to trifle with. A too youthful looking hat has proved many a middle-aged woman's undoing. An English woman who is still beautiful in sweeping black gowns, Marie Antoinette capes and a modified cap of the same style, said to me once that every woman of forty should adopt a uniform costume—something that suited her, that her friends would get accustomed to identify her with, and that she would never change. I thought it such a good idea and think seriously, even now, of adopting it.

"Do you know Mrs. A——? A year ago she was the youngest-looking woman of her age I knew. Well, I saw her yesterday in church and she gave me a shock. She looked years older. 'Why is it?' I said to myself, and I set to discover what it was. Her face looked as fresh as usual. Then I noticed her hair. 'What a mistake!' I exclaimed, inwardly, for she had dragged over the soft waves which usually rippled back from her forehead nearly to her eyebrows. 'I suppose that is on account of the new-fashioned tip-tilted hat she is wearing,' I surmised to myself. But the hat and the hair gave her a worn and older look that I never noticed before. Why couldn't the woman have kept to her neat toques, which are still worn, and her softly waved hair, that grew so prettily around her temples? She has lost even her smart look in following the ultra fashions."

When kerosene is spilled on a carpet or rug do not cry, but scatter cornmeal copiously over the spot. In twenty minutes or so sweep it up and put on some fresh meal. Keep this process up till all signs of the oil have vanished. The odor will probably linger longer. After a day or two the stain may reappear, as the oil which went through the carpet is drawn up by capillary attraction, but applications of meal will eventually cause it to disappear entirely.

There are several species of fish, reptiles and insects which never sleep in the whole of their existence. Among fish it is positively known that pike, salmon and goldfish never sleep at all, also that there are several others in the fish family that never sleep more than a few minutes a month. There

are dozens of species of flies which never indulge in slumber, and from three to five species of serpents which also never sleep.

Beds and Bedding.

Nothing is more conducive to sleep than a neatly made bed, with snow-white sheets and pillows that give forth the faint old-time fragrance of lavender. Yet this sweet herb is as seldom found in linen closets of the city housewife as is the large, restful bed of "flatless" days. So precious has space become in apartments (and nearly all the city lives in this fashion) that any makeshift which saves room is used in place of a bed.

There are two good rules on the proper position of a bed. It should never be placed against the wall, where there is often an imperceptible dampness. It should never stand in a recess or corner where there is not a constant circulation of fresh air. Dull headaches in the morning can nearly always be traced to sleeping in a bed far from a window.

All sorts of coverlets are now used for beds, but the plain, snow-white counterpane looks cool and restful in summer. Bedspreads of dotted Swiss or net are also appropriate if used over a foundation. The net for this purpose should be of coarse mesh and large enough when spread over the bed to clear the floor on three sides. Flounces of heavy Russian lace about 4 or 5 inches wide may be used for an edge. Many good housewives think a white coverlet cold looking and less picturesque than one in color.

Blankets are always preferable to quilts and comfortables, excepting those of soft down. Blankets, of course, can be washed, but frail women find them heavier and not so warm as down comfortables. All authorities, however, agree in condemning that favorite of past days, the "crazy quilt," and most of the other old-fashioned quilts. Although blankets are undoubtedly better than ordinary comfortables, a large number of housekeepers feel that their means will not permit them to use blankets exclusively, and therefore they add to their bedding comfortables, which are cheap and warm. Certainly some of the simple home-made comfortables in cheesecloth of delicate tints look clean and pretty in country cottages.

Most housewives imagine that linen is the ideal material for sheets, but several household authorities consider it inferior to a good quality of cotton for this purpose. Linen is cold and "slippery." It is no more appropriate for sheets than it is for body wear, owing to its non-absorbent quality. The wrinkles in linen sheets are harder to smooth out than those in cotton, and, in addition, keep a bed from looking fresh. Linen, however, is at its best when used for tablecloths and napery. For all such purposes it is the ideal material.

Mattresses are difficult to clean, and even some work to brush properly, owing to the creases around the upholsterer's buttons. If they are not constantly and completely covered by protectors the dust will gradually enter every crease. One piece of unbleached cotton sheeting should be stretched over the entire mattress. The end of the sheeting should first be pinned to the top of the mattress, the rest drawn down to the foot, under the mattress, and up again to the top, where the upper and under ends should be neatly basted together. After all wrinkles are smoothed out, the edges of the sheeting along the sides of the mattress are roughly basted together. There should be two protectors for every mattress, so that when one is in the wash the other can take its place.

When there is illness in the family some housewives use, in addition, thick comforters of unbleached cotton, which can be easily washed. Pillows and bolsters are often covered with cheap cotton or calico to protect the ticking.

When airing a bed, place two chairs at the foot, about 2 or 3 feet away; then draw the bedclothes over them, leaving the mattress bare, or if you prefer, place the bedding on separate chairs. A certain very particular housekeeper arranged two strong hooks in every one of the bedrooms in inconspicuous corners, opposite each other, and about 5 feet from the floor. In the morning she stretched a line from hook to hook and hung the bedding over it to air for about two hours. —N. Y. Tribune.

Domestic Hints.

COLONIAL CAKE.—Cream one cup of sugar with a third of a cup of butter and then beat in two eggs, the yolks and whites of which have been first whipped separately, a cupful of milk in which is dissolved a teaspoonful of soda, and lastly two cups of flour with two teaspoonfuls of cream of tartar sifted in it. This is an old-time recipe and used for both layer and loaf cakes.

ASPARAGUS SOUP.—When asparagus is plenty and cheap, make an asparagus soup by cooking together in two quarts of milk a large bunch of the best of vegetables, two peeled and quartered potatoes, a stalk of celery, a small onion and a bouquet of herbs. When soft press through a sieve and season with salt and paprika. Bind the soup with flour and butter, about two tablespoonfuls of each. One quart each of milk and water may be used instead of two quarts of milk.

STRAWBERRY PUDDING.—Beat the whites and yolks of four eggs, first separately and then together, until very light; add one pint of milk and four cupfuls of flour. Beat this mixture smooth before adding two tablespoonfuls of melted butter, two saltspoonfuls of salt and two and a half teaspoonfuls of baking powder. Drain a quart of berries, dredge with flour, stir into the batter and turn into buttered patty pans. Set in a pan of boiling water, cover and boil steadily for three hours.

PRINCESS POTATOES.—When you have left cold mashed potatoes in sufficient quantity press them into a small, plain mould, so that you can cut them into strips 2 inches long, 1 inch wide and ½ inch thick. Have in a saucer a tablespoonful of butter, melted and seasoned with a little cayenne and minced parsley. Cover every part of the potato strips with this, let them stand until butter hardens, then dip into beaten egg. With a knife remove them to buttered baking tin and place in the oven for about twelve minutes to brown nicely.

VANILLA ICE CREAM WITH CHOCOLATE SAUCE.—Beat the whites of six eggs and add three cupfuls of sugar and one quart of boiling milk; turn into a double boiler and cook for three minutes; then stir in the beaten whites of the six eggs and a teaspoonful of extract of vanilla. When cold stir in a quart of thick cream. The chocolate sauce is made as follows: Mix three ounces of grated chocolate with two and one-fourth cupfuls of granulated sugar, two-thirds of a cupful of hot water and four tablespoonfuls of melted butter, and cook until it strings; then add a little vanilla and serve with the cream.

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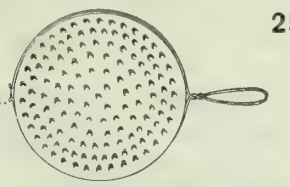
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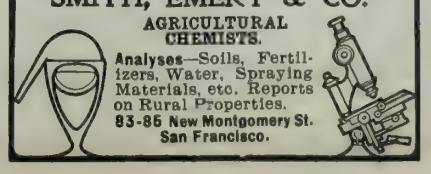
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David Lubin and His Work.

S. Hartman writes to the Merced Sun as follows:

Recently many European press dispatches, including also those from Rome of the 8th and 9th inst. in the Sun, had some interesting things to publish about the great success with which Mr. David Lubin of Sacramento has met there with his strenuous effort in a worthy cause, i. e., to advance the interest of the agriculturists.

What Mr. Lubin could not succeed in bringing about at home, nor to secure the co-operation of the very ones for whose interest he was working so diligently, he succeeded in accomplishing among the great scientists, economists, and even royalty of Europe, where he appeared as a stranger. There his great plan for the benefit of the tiller of the soil speedily found wide recognition; so much so that the King of Italy gave him substantial support by placing at his disposal an estate valued at $2,000,000, with the revenues of which an institution such as Mr. Lubin suggests should be maintained.

For the benefit of many, especially the farmers, who know little or nothing of Lubin's grand undertaking, I desire the Sun to publish this communication:

About fifteen years ago my attention was attracted by various newspaper items to the effect that Lubin started a movement to promote the interest of the farmer. I had then no personal acquaintance with him, but from what I knew of him I was satisfied that he was conscientious, bright minded and philanthropically inclined. As I have ever interested myself in the welfare of the farmer, I was desirous of learning from Lubin the details of that new movement.

Mr. Lubin is as prompt as he is zealous, and the return mail brought me his reply, which was quite interesting; for in a clear, concise style he explained his plan, so that a school boy could easily comprehend it. He also sent me several pamphlets that he edited himself on the subject, which, unlike similar publications on other matters, were not only not dry reading, but brilliant in a literary way, interesting and very instructive.

I became a convert to that move and kept up a constant correspondence with Lubin for a long time I did what little I could to acquaint the farmers of Merced county with that movement, distributed Lubin's pamphlets, which he published periodically by the tens of thousands at his own expense, and addressed the then flourishing Merced Grange on several occasions in order to explain to the extent of my ability the purport of Lubin's effort for the benefit of the agriculturist.

In the early '90s, at the solicitation of the Grange, I invited Mr. Lubin to come to Merced and address the farmers, with which he unhesitatingly complied. He had a cordial reception, and the hall of the Grange was packed, and he was listened to with the closest attention. He demonstrated it very clearly from a political and practical economical point of view that the farmer should receive the assistance of the national Government for its "protection" policy. Being himself a protectionist, he proved clearly that while it is of benefit to all others, it is an injustice to the agriculturist, at any rate on those who raise staples for support, for they have to sell their produce at the world's free trade prices. Mr. Lubin therefore advocated that the national Government should pay a bounty of so much per bushel on wheat and other American produce exported, which would in a measure reimburse the farmer for the injustice "protection" causes him.

It is remarkable that, notwithstanding Mr. Lubin's idea is a good and just one, and is so admitted by the greatest scientists and students of economy everywhere, yet he could not get the due support of the American farmer. He spent years of his valuable time, tens of thousands of dollars of his private funds, and addressed congressional committees on several occasions in Washington for the same purpose, still he was unable to achieve in those many years at home what he accomplished in a short while in Europe.

Since I have studied this matter for years I have convinced myself that the reason why Mr. Lubin could not carry out his unselfish philanthropical scheme at home lies in the fact that he could not secure the support of the very ones he so diligently worked for. The American farmer is intelligent and educated above the average, and in many instances considerably so, yet they fail to harmonize and join hands when a question touching their own interest is up for action.



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Both better than the average, simple in construction and durable. Send for catalogue. Do it to-day. Estimates furnished on all sorts of pumping plants.

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Pacific Coast Agent for Challenge Windmill and Feed Mill Co.
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PATENTS

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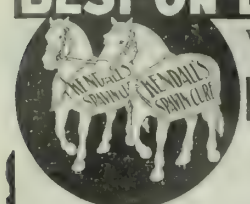
We attend to all business connected with patents, such as the preparation of Caveats, Trade-Marks, Design Patents, Assignments, Licenses and Agreements. We make examinations as to the patentability of inventions, searches, and give opinions as to infringements, or the scope or validity of Patents. Our Branch Offices and arrangements for Foreign Patents, Trade-Marks, etc., are very extensive and complete. Inventors' Guide sent free on application.

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Open Air for Steer Feeding.

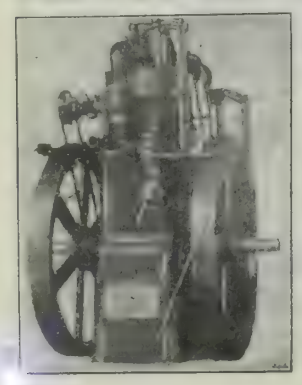
In the fall of 1902, the Pennsylvania Experiment Station planned a series of experiments to test the comparative merits of indoor and outdoor feeding for fattening steers. These experiments have now extended through three seasons, upon practically the same plan. Twenty-four steers were divided into two lots as nearly equal as possible. One lot was fed in a large pen in the basement of the college barn, the other lot was fed in an open shed in a yard adjoining the barn. This shed was enclosed on the two ends and one side, leaving the open side towards the southeast.

During the first season, the lot fed in the shed produced a slightly smaller gain and ate somewhat more food than the one fed in the barn. During the second season, the lot in the barn again produced a larger gain but ate more food than the lot outside. During the first season, it required one and one-fifth pound more feed to produce a pound of gain in the outside lot than in the barn lot. During the second season, it required one and one-half pound more feed to produce a pound of gain in the open shed than in the barn. During the third season, the two lots made practically the same gains, there being only one-half pound difference per steer and that in favor of the outside lot. The steers in the shed ate less feed during this season than the steers in the barn. During this season it required a quarter of a pound more feed to produce a pound of gain in the barn than outside.

During the first two seasons, the yard in which the open shed was located became very muddy from the trampling of the steers and on account of drainage from higher ground. Before the last season opened, a part of this yard was given a coat of cinders which allowed it to be kept drier than during the previous seasons. This may account in part at least for the better showing made by the outside lot during the last experiment.

From records kept during these experiments, it appears that the temperature has very little to do with the gains. The large gains were made quite as often during the colder periods as during the warmer ones. In many cases it seems that the cold acts as a stimulant which results in greater gains. Even the steers outside sometimes made their largest gains during the coldest weather. The indications are that it is much more important to keep steers dry than to keep them warm, and that whatever advantage barn feeding may possess over outside feeding results not from the warmer but from the drier quarters.

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Gasoline, Distillate, or Oil.

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FRUIT MARKETING.

Citric Acid From Lemon Waste Direct.

From U. S. Consul Alexander Heingartner, Catania, Italy.

The discovery of a method of extracting citric acid directly from the waste of lemons is attracting considerable attention in Sicily and Calabria. The discoverer, Giovanni Restuccia, is receiving much praise from agricultural organizations, which hope by this new method to raise the price of lemon refuse, but his discovery has greatly angered those who live by speculating on the transformation of citrate of lime into citric acid. The confidence with which Restuccia speaks of his discovery, as well as the results of experiments made with his method by Professors Korner and Manozzi, give promise that the first trial—which will shortly be made in Palermo and Messina—of extracting more than a ton of citric acid, will be even more successful than is expected by the public.

At a recent experiment made in the presence of Korner, fifty-four boxes of Sicilian lemon waste were used. Prof. Korner, before whom experiments are made almost daily by chemists who think they have discovered new processes, was at first skeptical, but when he saw the substances which were dissolved in the lemon sack precipitated in their characteristic shapes by the reagents discovered by Restuccia, he became enthusiastic. The scientists of Milan—including Manozzi, Morizani and Gobba—were present at the experiments, and when at the first crystallization the results were manifestly excellent, the venerable Prof. Korner, turning to Prof. Manozzi, exclaimed: "We have here the resurrection of Sicily." The King and the Minister have congratulated the inventor.

Restuccia does not wish his method to enrich speculators, but desires the farmers and horticulturists to have all the advantages. He has closed a contract with the Citrica Sicula, and will undertake all expenses for the production of citric acid from the waste of lemons.

$100 REWARD



for any case of colic, curb, splints, contracted or knotted cords, recent shoe boils, splints or callous that cannot be permanently and positively cured, if directions are followed, by

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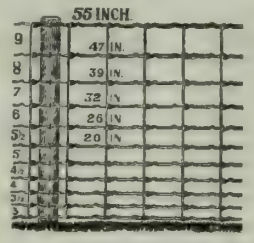
These presses bale most of the hay raised.
The Little Giant press was formerly made in Stockton, Cal., and was known as the Miller press.

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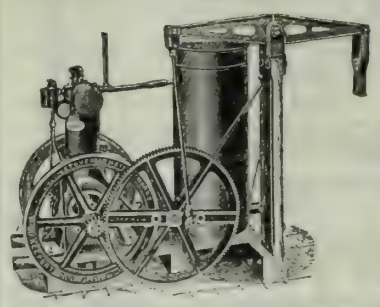
When you're in town, hunt up our dealer—he's there for your convenience. Then Hitch Your Team to the



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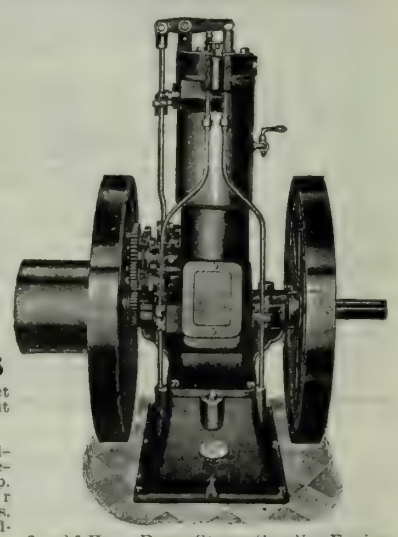
and let them pull—have ten or a dozen men sit on it, too, if you want to.
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Stover 2 Horse Power Handy Boy Gasoline Engine.

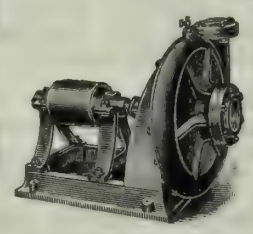


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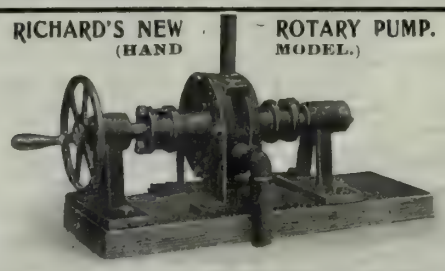
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FORESTRY.

Redwood Products.

Mr. J. B. H. Pilkington, an experienced redwood authority, gives the Surf of Santa Cruz the following notes:

The redwood belt in this county extends from the county line on the north almost to the Pajaro valley at the south, some 20 miles, and is from 5 to 10 miles in width, or perhaps an average of 8 miles. Perhaps one-half the acreage in this strip has been heavily timbered and now contains second growth redwood, mainly, with a smaller number of tan oak and other young trees. Ranging in altitude to 2000 feet and more, it enjoys exceptional climatic advantages—little fog or harsh wind, abundant rainfall—always good and usually abundant water, in a word, salubrious and most desirable for home making. Here and there are spots of oak, madrone, brush or open lands, particularly adapted to the apple, grape, apricot or walnut. Railroads traverse some sections, wagon roads all parts, and but few places but are within 2 miles of the district school house.

These cut-over lands are on the market at from $5 to $10 an acre, according to location, accessibility and quality.

The original cutting of this land gave one, two or three cords of bark to the acre, taken from five to ten trees, perhaps. From the stumps have sprung suckers three to five or even ten in places, which, crowding and struggling ever upward after air and light and always subject to the law of the survival of the fittest, are in a few years reduced one-half or two-thirds in number, and soon take the tree form and size. Some are fit for peeling in eight years, from which time on the tree increases rapidly in size and the bark in quality and thickness, until at twenty to thirty years the trees are from 6 to 12 inches in diameter and 20 to 40 feet in height. Such second crops are now being taken off, going in some instances $2 to $10 to the acre in bark, besides the wood, which brings the highest market price for fuel. Undoubtedly judicious thinning during the early growth would give earlier and heavier returns, and it seems most probable that an investment in a four or five year stand of young timber would, with proper care, begin to pay expenses (labor, interest and taxes) in four to five years, and in another five years be in shape to give off a continual, steadily increasing income in the marketing of a certain proportion of the larger timber yearly. The returns should compare most favorably in point of time and value with the same land set to the most suitable fruits and at a small cost of the labor and expense necessary for the latter.

Civil Service in Forestry.

Appointments to be forest rangers are no longer made because of "influence" or favoritism, but only after a successful examination as to fitness for the duty. Prof. Pinchot, chief of forestry at Washington, has issued a circular, of which this is an extract:

To be eligible as forest ranger of any grade, the applicant must be, first of all, thoroughly sound and able-bodied, capable of enduring hardships and of performing severe labor under trying conditions. Invalids seeking light, out-of-door employment need not apply. No one may expect to pass the examination who is not already able to take care of himself and his horses in regions remote from settlements and supplies. He must be able to build trails and to pack in provisions. He must know something of surveying, estimating and scaling timber, lumbering and live stock. The examination of applicants is along the practical lines indicated above, and actual demonstration by performance is required.

Dates and examinations for the forestry service are as follows: Alturas, Modoc county, July 5 to 7; Sisson, Siskiyou county, July 12 to 14; Weaverville, Trinity county, July 18 to 20; Northfork, Madera county, July 25 to 27; Deer Creek Hot Springs, Tulare county, August 2 to 4; Quincy, Plumas county, August 5 to 7; Nordhoff, Ventura county, August 5 to 7.

Creating New Forests.

California and other Western States have proved the efficacy of irrigation in promoting agriculture, but there are millions of acres of fertile land unused through lack of sufficient water. Much of this land will be reclaimed by the gigantic irrigation works planned by the National Government, but the scope of this work is limited by the amount of water available. The influence of forests in conserving a limited rainfall is recognized, but they are often wanting where most needed. Thus forest planting is often necessary.

An example of what the Bureau of Forestry is doing in this direction is furnished by the nursery which it is establishing 15 miles from Santa Barbara, in southern California. This is the fourth forest nursery which the Bureau has established within Western forest reserves. Nowhere in California is water needed more than in the coast plain east and southeast of Santa Barbara. To cover large areas with new tree growth, however, in regions where the forest can not naturally restore itself, is a difficult matter. Unless great care is used in the selection of species and in the cultural methods employed, the work is likely to prove a failure. Methods which would succeed on a small plantation are impracticable on a large scale on account of the expense.

The nursery in the Santa Barbara reserve will be planted with seed of trees likely to flourish in that region. Coulter and yellow pine will be most largely planted. The seedlings will be ready to transplant in their permanent locations two years hence.

The first attempt at reforesting will be made on the upper watershed of the Santa Ynez river, which supplies the town of Santa Barbara with water. This town of only 16,000 inhabitants is spending $600,000 to secure a good water supply. A dam and reservoir for this purpose are now under construction. The Santa Ynez watershed is now bare or poorly covered with chaparral. A good forest growth is necessary both to conserve the water and to prevent the washing down of silt, which if unchecked would eventually fill and ruin the reservoir.

The success of the transplanting will depend largely upon the season. In excessively dry years good results can not be expected, and the Bureau must take advantage of a wet season. Preparations for the transplanting will be begun immediately, so that quick work can be done the first favorable season after the seedlings are old enough.

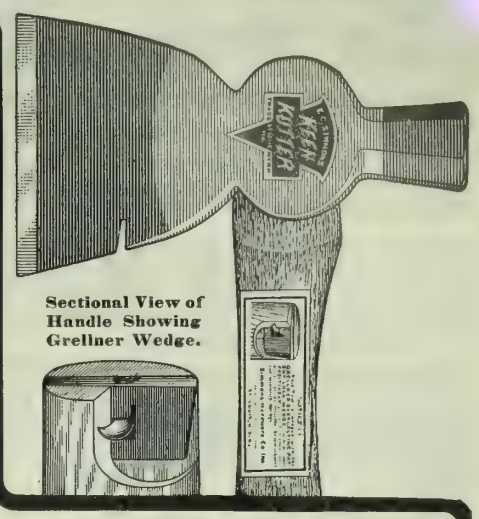
In the whole of the Santa Barbara forest reserve, which contains nearly 2,000,000 acres, there are only two groves of any size. There is, therefore, a large opportunity for the extension of the work of tree planting, if it proves successful.

In Nebraska the Bureau of Forestry has demonstrated its ability to solve the same kind of difficulties with which it is confronted in California, and has successfully established forest plantations at an extremely low cost. If it can do the same thing in southern California it will be an important work for the welfare of the region.

The total coal production of the United States is now at the rate of 1,000,000 tons per day, and the consumption of coal by railroads is equal to 40% of this, or 400,000 tons per day. The fuel bill of a railroad contributes about 10% of the total expense of operation, and 30% to 40% of the total cost of running the locomotives. A locomotive will consume on an average $5000 worth of coal per annum, and for a road having an equipment of 1000 locomotives the coal bill is approximately $5,000,000.

HEAVY DAMAGE FROM RUST.—A Visalia dispatch, dated June 15, says: George Bodden, the well-known grain man, is authority for the statement that the loss through rust in the lake country this year will be 50% of the entire wheat crop. The rust is discovered to be much worse than was feared, it being found in cutting that the heads are just scarcely filled.

Long Lived Tools



Sectional View of Handle Showing Grellner Wedge.

Keen Kutter quality tells in the long life of Keen Kutter Tools as well as in better work and greater satisfaction. It is not an unusual thing for Keen Kutter Tools to be passed down from father to son, so long do they last.

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If your dealer does not keep Keen Kutter Tools, write us and we will see that you are supplied.

Every Keen Kutter Tool is sold under this Mark and Motto:
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SEND FOR TOOL BOOKLET.

Stop—Think

Do **you know** how much you **lost** last year by not owning a correct stock and wagon scale? You **admit** you **need** one. Why don't you write for **our** catalogue.

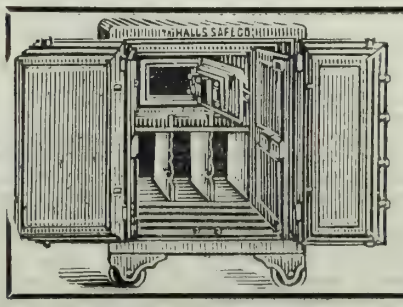
"New Idea" Steel Pitless Scale

just out. All **complete,** ready to weigh on except platform plank. No pit. No wall. All steel. New construction. You will like it. **We make all kinds of scales.** Do you know a good agent for us? Do us and him a favor, show him this ad. We want him **Now.**

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El Dorado Oil Works
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DON'T BUY GASOLINE ENGINES UNTIL YOU INVESTIGATE "THE MASTER WORKMAN," a two-cylinder gasoline engine superior to all one cylinder engines; revolutionizing gas power. Cost Less to Buy and Less to Run. Quickly, easily started. No vibration. Can be mounted on any wagon at small cost—portable, stationary or traction. Mention this paper. SEND FOR CATALOGUE. THE TEMPLE PUMP CO., Mfrs., Meagher & 15th Sts., Chicago, THIS IS OUR FIFTY-FIRST YEAR.

The Markets.

San Francisco Produce Report.

San Francisco, June 21, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 86⅞@ 86½	83 @ 82⅛
Thursday	86⅜@ 87⅝	82⅞@ 83⅝
Friday	87⅜@ 88⅜	83¾@ 84⅞
Saturday	87¼@ 88⅜	83⅛@ 85⅛
Monday	86¾@ 87⅝	85⅛@ 86⅜
Tuesday	87¾@ 89⅛	83⅜@ 85¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	52⅜@52⅝	51⅝@50⅞
Thursday	52 @53	50¾@51½
Friday	53⅜@52⅞	51⅝@51⅜
Saturday	52¾@53⅞	51¼@52⅛
Monday	54 @53	52⅛@51¾
Tuesday	53⅛@54½	52 @52⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Thursday	$1 35¾@1 35¼	$——@——
Friday	1 36½@1 36¼	——@——
Saturday	1 36 @1 36⅜	——@——
Monday	1 36⅛@1 36¼	——@——
Tuesday	1 37¼@1 36⅞	——@——
Wednesday	1 36½@——	——@——

Wheat.

There has been little opportunity for trading in the local market, so far as transfers of actual wheat were concerned, owing to offerings of either old or new wheat being exceedingly limited, and values have in consequence not been clearly defined. There is a strong undertone to the market, however, and prospects of as good prices, if not better, being realized as have been current the past season, despite the efforts of most of the daily and weekly papers to make it appear otherwise, in the interest of importers and ship owners. A party of grain buyers took an automobile trip through a portion of the San Joaquin Valley, for the purpose of sizing up the grain crop. Of course they said they found the wheat fields looking much better than was generally reported by growers, and one of the party kindly furnished the information to the daily press that in his estimation this year's California wheat crop would aggregate 600,000 or 700,000 tons. This would be a heavier crop than has been harvested in this State since 1901. Buyers are always talking big crops at this time of year, or saying nothing and purchasing at as low figures as possible. Most reliable advices are that the wheat yield will be light throughout the State, especially of good to choice.

California Milling	$1 52½@1 57½
Cal. No. 1 shipping, alongside	——@——
Cal. No. 1 wheat	1 45 @1 50
Oregon Club	1 47½@1 52½

PRICES OF FUTURES.

During past week the range on options was:
December, 1905, delivery, $1.35½@1.37¼.
Wednesday, at the forenoon session of Exchange, for December, 1905, wheat $1.36½ was bid.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s6d@6s7d	–s–d@–s–d
Freight rates	17¼@–s	22½@–s
Local market	$1 27½@1 32½	$1 45@1 50

CALIFORNIA WHEAT CROP.

According to figures of Merchants' Grain Exchange:

Year.	Tons.	Year.	Tons.
1904	326,685	1890	1,054,489
1903	165,028	1889	903,391
1902	596,094	1888	1,261,091
1901	923,330	1887	903,796
1900	615,664	1886	850,651
1899	973,102	1885	1,021,511
1898	367,061	1884	742,935
1897	917,589	1883	959,334
1896	872,602	1882	1,441,540
1895	756,185	1881	979,796
1894	750,383	1880	1,359,100
1893	653,072	1979	1,707,500
1892	976,792	1878	990,050
1891	1,007,876	1877	1,141,267

Flour.

Stocks of desirable makes are not heavy and are not apt to be in the near future. Current values for favorite brands are being well maintained, the quotable range remaining as previously noted. Off qualities are offering at low figures and then fail to meet with active custom.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Buyers have been hammering down prices for this cereal, with a view of getting the bulk of the crop at prices which will enable them to subsequently unload to decided advantage. That there is a rather large crop of barley in California this year and the quality of high average is generally admitted. There are no stocks of old barley, however, to handicap the market, and with little other grain available for export, the chances are favorable for an active export movement in California barley this season. The quality being of high average will tend to bring about a brisk foreign demand. Prices are now low, and it would not be taking much risk as a prophet to venture the assertion that there will be chances to sell to better advantage later in the season than are now presented. Dec. option sold down to 86½c. the past week and seller 1905 option went at 85c.

Feed, No 1 to choice spot	$ 95	@ 97½
Feed, fair to good, to arrive	92½@	95
Brewing, No. 1 to choice old	——	@——
Chevalier, No. 1 to choice	——	@——
Chevalier, common to fair	——	@——

Oats.

Market is almost bare of old oats and not many new have yet come forward. Some new Reds have been placed, mainly within range of $1.30@1.40 for good to choice, but buyers generally are now talking lower prices. Dealers being all out of stock are naturally bearing the market all they can. Much will depend in the near future on the amount of selling pressure exerted. Purchasing on speculative account is not apt to be extensive unless values touch lower levels.

White oats, fancy feed	$1 55	@1 60
White, good to choice	1 50	@1 55
White, poor to fair	——	@——
Milling	——	@——
Black oats	1 20	@1 40
Red, fair to choice new	1 25	@1 40

Corn

Spot stocks continue to be principally Eastern product, representing purchases by dealers and largely engaged ahead for shipment outward. The market is a little easier in tone, in consequence of some increase in supplies, but in quotable values there are no special changes to note.

Large White, good to choice Cal	$1 45	@1 50
Large Yellow	1 40	@1 45
Small Yellow	1 50	@1 55
Egyptian White	1 32½	@1 37½
Egyptian Brown	1 27½	@1 32½
Eastern, sacked	1 37½	@1 47½

Rye.

New is beginning to arrive. The first carload brought $1.60, the quality being good.

Good to choice	$1 55	@1 60

Buckwheat.

Market bare of offerings and nothing upon which to base quotations.

Good to choice	$2 00	@2 25

Beans.

Recent inquiry has been largely for Bayos and Pinks for seed, and desirable qualities of these have brought comparatively stiff figures. Asking rates on Limas show slight reduction. Not much doing in white beans, but good to choice are being steadily held.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 25	@3 50
Large White	2 50	@2 90
Pinks	3 50	@4 00
Bayos, good to choice	3 65	@4 00
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	5 75	@5 85
Black-eye Beans	3 00	@3 15

Dried Peas.

Local millers are now fairly stocked with Eastern. There is some inquiry for damaged peas for stock feed at rather low prices.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The local market remains dull, the gap between buyers and sellers appearing to widen rather than to decrease. Dealers are now quoting 24c as a full figure for 1904 hops, while growers are holding for 30c and more. On new to arrive the quotable range may be said to be 18@20c, these figures being based mainly on the views of buyers. The New York Producers' Price Current says: "A careful canvas of the hop market fails to reveal any especially new features On the local market there is a continued absence of activity. Several lots, including a 48-bale growth and two others of about the same proportions of New York State hops of very good quality have been handled this week at 25c. The continued cold weather in this State has caused more or less uneasiness among some of the growers, but it is not thought the late frost here caused any serious damage, beyond retarding the growth of the vines, and warm weather, which it is only natural to expect, should bring along hops in good shape. From the Pacific coast we hear of several sales in North Yakima at 21 to 22½c according to quality. The pool in Oregon are still holding out for 30c, but it is rumored some of the growers in the pool are beginning to weaken and dealers here claim they can buy in Oregon at 23@23½c. Cool weather is also reported on the coast and there is some report of lice having appeared in Oregon, but uncertain as yet as to whether any serious damage has occurred. From England and Germany the reports are very much the same as in this country — namely continued cool weather, but it is so early in the season that very little definite can be said."

Good to choice nominal	23	@ 27

Wool.

Offerings here are light and must continue so until Fall clip begins to put in an appearance. Buyers are on the steady lookout for any stray lot that may happen to come in and are bidding fully as good figures as they have been paying for weeks past. All desirable Fall wools are likely to meet with a good market.

SPRING.

Humboldt and Mendocino	30 @—
Northern, free	28 @29
Northern, defective	23 @26
Middle County, free	27 @—
Middle County, defective	23 @25
San Joaquin and Southern, free	26 @—
San Joaquin and Southern, defective	20 @24
Oregon, good to choice	27 @30
Nevada	22 @29

Hay and Straw.

Old hay is still on the market in considerable quantity, leaving little opportunity to dispose of new. Only for choice old Wheat or mixed Wheat and Oat and Tame Oat of fine quality does the market show any firmness. Some transfers of new Wheat have been made within range of $8@10, and of new Red Oat at $6@9 per ton, the latter showing more or less rust.

Wheat, good to choice	$11 00	@ 14 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	7 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 00
Alfalfa	6 00	@ 11 00
Clover	6 00	@ 9 00
Stock hay	5 00	@ 6 50
Compressed	12 00	@ 14 50
Straw, ₱ bale	35	@ 50

Millstuffs.

Bran is in rather limited supply and is being steadily held. Middlings are without quotable change, but demand is slow at the prices asked. Market for Rolled Barley is weak. Values for Milled Corn are quotably lower.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 00
Middlings	24 50	@ 27 50
Shorts, Oregon	21 50	@ 23 00
Barley, Rolled	22 00	@ 23 00
Cornmeal	30 00	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	33 50	@ 35 00

Seeds.

Trade is light in this department at quotably unchanged values. There are no heavy stocks of any sort now in the hands of dealers, receipts being of small volume from all quarters.

Flax	$1 75	@ 2 25
Mustard, Yellow	3 50	@ 4 00
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		—@—
Canary		6¼@ 6½
Rape		2 @ 2½
Hemp		3½@—
Timothy		5 @ 5½

Honey.

Samples of new crop are on the market, with asking prices mainly within range of 4@5½c per pound in carload lots at primary points for Amber to Water White Extracted. Some handlers estimated this year's yield of California honey at 250 carloads. This quantity has been materially exceeded in some previous years, but it is doubtful if the crop reaches the above mark this season.

Extracted, White Liquid	5½@—
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@—
White Comb, 1-frames	11 @—
Amber Comb	8 @10

Beeswax.

There is a fair inquiry, with values ruling steady. Stocks in this center are light.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Live Stock and Meats.

Consumers are not running very heavily on meat of any description, as is to be expected in the mid-summer season. Prices for most kinds of Beef are being slightly shaded to buyers. There are no quotable changes to record in values for either Mutton or Lamb or Veal, but with market quiet, there is naturally no special firmness. Not many Hogs arriving and market is moderately firm, especially for choice grain fed.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	4½@	5
Beef, 3rd quality	4	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾@	5¾
Hogs, large, hard, over 200 pounds	5¾@	5½
Hogs, small, fat	5½@	5¾
Veal, large, ₱ lb	4	@ 6
Veal, small, ₱ lb	5	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	8½@	9

Hides, Skins and Tallow.

Inquiry is fairly active for Hides and Pelts in prime condition and current values are being well maintained. Considerable Tallow is being shipped outward by sea.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12 @—	11 @—
Medium Steers, 48 to 56 lbs	11 @—	10 @—
Light Steers, under 48 lbs	11 @—	10 @—
Heavy Cow Hides, over 50 lbs	11 @—	10 @—
Light Cow Hides, under 50 lbs	11 @—	10 @—
Stags	8 @—	7 @—
Wet Salted Kip	11 @—	10 @—
Wet Salted Veal	13 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19½@—	19 @—
Dry Kip and Veal, 11 to 16 lbs	17 @—	15 @—
Dry Calf, under 4 lbs	21 @—	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

Grain Bags are moving freely into the interior and market is rather firm. Fruit Sacks are receiving some attention and orders are being as a rule promptly filled.

Bean Bags	$ 5¾@—
Fruit Sacks, cotton	6½@7¼
Fruit Sacks, jute, as to quality	6 @7½
Grain Bags, Calcutta, 22x36, spot	6¾@—
Grain Bags, Calcutta, buyer June-July	6¾@7
Wool Sacks, 4-lb	32 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

Large and fat fowls were not in heavy supply and were salable to advantage, particularly choice young stock. Common old and very small young were not much sought after and were in fairly liberal receipt. Four carloads of Eastern poultry arrived within the week.

Turkeys, choice Young, ₱ lb	$ 24	@ 26
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	5 00	@ 6 00
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	7 00	@ 8 50
Fryers	4 00	@ 5 00
Broilers, large	2 50	@ 3 00
Broilers, small to medium	1 75	@ 2 25
Ducks, old, ₱ dozen	4 50	@ 5 00
Ducks, young, ₱ dozen	4 50	@ 6 00
Geese, ₱ pair	1 50	@ 1 75
Goslings, ₱ pair	1 50	@ 1 75
Pigeons, old, ₱ dozen	1 25	@ 1 50
Pigeons, young	1 50	@ 1 75

Butter.

Creamery product is in good supply and the demand for immediate consumption not very brisk. The cheaper grades are in light receipt and are for the time being commanding relatively the best figures.

Creamery, extras, ₱ lb	19 @20
Creamery, firsts	18½@—
Creamery, seconds	18 @—
Dairy, select	18½@—
Dairy, firsts	18 @—
Dairy, seconds	17½@—
Mixed Store	17 @17½

Cheese.

Supplies of domestic flats are showing some increase, causing the market to present a little easier tone, but there is no quotable decline in values. Small cheese continue in light receipt. Some new Eastern cheddars and twins have arrived.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to good	9 @ 9½
California, "Young Americas"	10 @12
Eastern, new	12½@13½

Eggs.

Most of the eggs now coming forward have to be overhauled and there is considerable loss through candling. Demand is not brisk and market favors buyers, especially for other than most select stock. Warm weather eggs from the Missouri river section are being laid down here at low figures.

California, select, large, white and fresh	21 @—
California, select, irregular color & size	18 @20
California, good to choice store	17 @18
Eastern firsts	18 @19
Eastern seconds	16 @17

Potatoes.

Receipts of ordinary qualities were liberal, mainly from the river districts, and for the general run of offerings the market favored the buying interest. A few special brands brought comparatively good figures, being sought after by the most particular custom.

Cal. Early Rose, ₱ cental	60	@ 90
Cal. Burbanks, ₱ cental	75	@ 1 25
River Reds, ₱ cental	—	@ —
Oregon Burbanks, ₱ cental	—	@ —
Chile Garnet, ₱ cental	75	@ 1 00
White Potatoes, ₱ cental	60	@ 1 00
Sweet Potatoes, ₱ cental	—	@ —

Vegetables.

Onions were in liberal receipt, especially ordinary Reds, which are less sought after, now that Yellow are arriving. Superior qualities of Green Peas, String and Wax Beans were not in excessive supply. Summer Squash arrived freely. There were increased offerings of Tomatoes and Egg Plant.

Asparagus, No. 1 to choice, ₱ lb	5	@ 7
Asparagus, No. 2, ₱ lb	4	@ 4½

Beans, Lima, ℔ lb	—	@	—
Beans, String, ℔ lb	2	@	4
Beans, Wax, ℔ lb	2	@	4
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ sack	1 00	@	2 00
Egg Plant, ℔ lb	5	@	8
Garlic, ℔ lb	3	@	5
Mushrooms, ℔ lb	—	@	—
Onions, New Yellow Danvers, ℔ ctl	1 00	@	1 25
Onions, New Red, ℔ ctl	60	@	1 00
Peas, Green, ℔ sack	75	@	1 25
Peppers, Bell, ℔ lb	—	@	—
Peppers, Green, ℔ lb	10	@	20
Rhubarb, ℔ box	50	@	75
Summer Squash, per large box	30	@	60
Tomatoes, Los Angeles, ℔ box	75	@	1 25

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Market was heavily stocked with common qualities of most varieties in season, but there was no surfeit of choice to select fruit. Desirable stock for shipment brought as a rule comparatively good prices. Canners were in the market for Apricots, but it was the exception where they bid over $15 per ton, and for ordinary named as low as $10, but they did not secure many at these figures. Better prices were realized from outside buyers. Choice Astrachan Apples were not plentiful and were quotable up to $1.50 per standard box of 4-tier stock. Early Pears were in fair supply, but offerings included few of high grade. Peaches of fine quality were in good request. Figs arrived in so many different styles and sizes of packages that they should be sold and quoted by the pound. In fact, it would be a change in the right direction if all fresh fruit was sold by the pound instead of package. Most fruit goes to the consumer by weight, and there is no good reason why it should not go to the retailer in the same way. The later varieties of Plums are beginning to make a good display. Berries of nearly all kinds were in liberal receipt.

Apples, choice to select, ℔ 50-lb bx	1 25	@	1 50
Apples, fair to good, ℔ 50-lb. box	75	@	1 25
Apples, green, ℔ small box	30	@	65
Apricots, in bulk, ℔ ton	10 00	@	20 00
Apricots, ℔ box	30	@	75
Blackberries, ℔ chest	3 00	@	5 00
Cantaloupes, pony crate	2 50	@	2 75
Cantaloupes, ℔ standard crate	3 00	@	3 50
Currants, ℔ chest	4 00	@	6 00
Figs, ℔ box	50	@	1 00
Figs, ℔ crate	75	@	1 50
Gooseberries, English, ℔ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ℔ crate	1 00	@	1 50
Loganberries, ℔ chest	2 50	@	4 00
Peaches, ℔ box	50	@	75
Pears, Madeleine, ℔ 40-lb. box	75	@	1 00
Plums, Burbank, ℔ crate	60	@	75
Plums, Clyman, ℔ crate	30	@	50
Plums, Simoni, ℔ crate	70	@	90
Primer Berries, ℔ chest	2 00	@	3 50
Prunes, Tragedy, ℔ crate	50	@	75
Raspberries, ℔ chest	3 50	@	6 00
Strawberries, Longworth, ℔ chest	4 00	@	6 00
Strawberries, large var., ℔ chest	3 00	@	5 00
Watermelons, ℔ lb	3	@	—

Dried Fruits.

New Apricots are coming forward to this center and are also being shipped outward from interior points. Interior sales reported are mainly within range of 5½@7c per lb., as to quality, some of very high grade being held at an advance on latter quotation. Some contracting of Peaches is reported for August delivery within range of 6@8½c for choice to strictly fancy. Dealers are talking 8@10c. for choice to fancy Pears of this year's curing, and will be in great luck if they do not find it necessary to pay stiffer prices for the grades above named. There is little spot stock of dried fruit of any sort now on market. Evaporated Apples of high grade are commanding in a jobbing way comparatively stiff prices. Prune market is firm for both spot and futures. New Santa Claras are held at 3c. for the four sizes, and considering the lightness of the crop this is a very reasonable figure. In addition to recent heavy shipments of Prunes outward by rail, the steamer Umatilla took the past week 55,015 lbs., also 6,400 lbs. of other fruit. The German steamer Hathor, sailing the 17th, carried 28,700 lbs. Prunes, mostly for Hamburg. Steamer Queen, sailing yesterday, took 18,125 lbs. dried fruit, including 14,750 lbs. Prunes.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6	@	7
Apples, extra choice to fancy, 50-lb boxes	7½	@	8½
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	5½	@	6½
Apricots, Royal, fancy	7	@	—
Figs, 10-lb box, 1-lb cartons	55	@	60
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	4½	@	—
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

Some leading dealers are naming 2½c. per pound in the sweat box for coming crop and are quoting 2¾c. for new seedless, 3¾c. for 2-crown, 4½c. for 3-crown and 5c. for 4-crown, but there has been no business at these figures. A fair movement in last year's raisins at quotably unchanged values.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3	@	—c
3-Crown Standard	4	@	4½c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			5½c
Choice, 16-oz. Seeded			4½c
Fancy, 12-oz. Seeded			4¾c
Choice, 12-oz. Seeded			3¾c

Citrus Fruits.

Oranges were in light receipt and for best qualities the market presented a firmer tone, but there was no great demand, owing to the abundance and cheapness of other fruits. Late varieties suitable for long-distance shipments commanded the best figures. Lemon market was steady, with demand fair and stocks sufficient for current needs. Limes were in good supply, prices remaining as last quoted.

Oranges, Navels, choice to fancy, ℔ bx	2 75	@	3 00
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	1 25	@	2 00
Oranges, Valencias, ℔ box	2 00	@	3 00
Oranges, Cal. Tangerines, half box	—	@	—
Lemons, California, select, ℔ box	2 25	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	1 25	@	1 50
Grape Fruit, ℔ box	1 50	@	2 50
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

Desirable qualities of either Almonds or Walnuts are not in large stock and are being steadily held. The outlook is for a rather light crop of Walnuts this season, both here and abroad, and prices are expected to rule stiff for No. 1 to choice.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

The wholesale wine market is quiet in this center, dealers being fairly stocked. There is not much wine of choice to select quality offering from first hands, and ordinary stock is not being sought after. Dry wines of last vintage continue to be quoted at 14@17c. per gallon for fair to choice, San Francisco delivery. Sweet wines of fair quality, 1904 vintage, are offering at 25c. per gallon in bulk at wineries, 27½c. per gallon in a jobbing way at San Francisco. Receipts of wine at San Francisco last week were 317,350 gallons, and for preceding week were 422,250 gallons; for corresponding week last year receipts were 335,923 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904	Same time last year
Flour, ¼ sks	64,261	4,472,031	5,379,459
Wheat, ctls	29,012	2,774,984	2,377,069
Barley, ctls	45,101	3,486,856	5,451,654
Oats, ctls	3,979	823,109	857,333
Corn, ctls	24,110	314,038	174 814
Rye, ctls		55,090	60,274
Beans, sks	6,597	647,984	726 0 6
Potatoes, sks	21,736	1,278,339	1,315,457
Onions, sks	3,923	151,019	161,996
Hay, tons	2,569	174,126	170,310
Wool, bales	2,385	79,468	71,418
Hops, bales	249	39,793	31,407

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	35,172	2,940,312	3,353,112
Wheat, ctls	583	807,568	1,016,871
Barley, ctls	13,193	1,902,649	4,203,124
Oats, ctls	62	80,812	24,790
Corn, ctls	5,805	176,422	18,886
Beans, sks	876	53,525	41,019
Hay, bales	2 444	238,204	229,345
Wool, lbs		884,219	2,834,951
Hops, lbs	9,703	401,760	593,817
Honey, cases		3,077	5,548
Potatoes, pkgs	2,622	114,873	112,637

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J. DALZELL BROWN, Manager.

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GEORGE TOURNY, Secretary.

DIVIDEND NOTICE

San Francisco Savings Union

532 California St. Cor. Webb.

For the half year ending with the 30th of June, 1905, a dividend has been declared at the rate per annum of three and six-tenths (3 6-10) per cent on term deposits, and three and fifteen one-hundredths (3 15-100) per cent on ordinary deposits, free of taxes, payable on and after Saturday, July 1, 1905.

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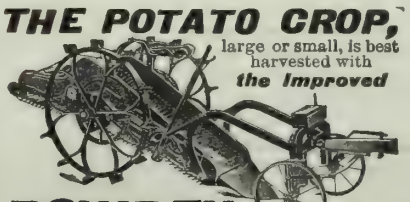
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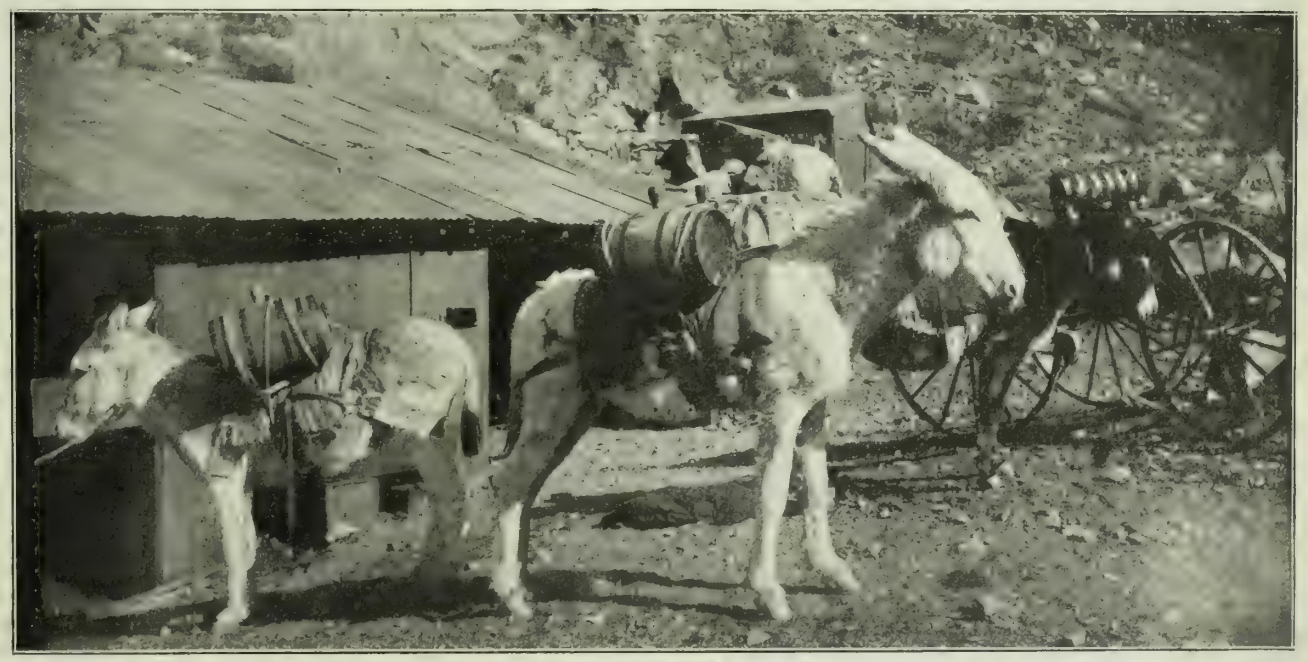
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Vol. LXX. No. 1. SAN FRANCISCO, SATURDAY, JULY 1, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

In Arid California.

It is not kind nor true to speak of the California desert, because the lands now waste are largely fertile when their single need—water—is supplied. The same is true of most of the other arid regions which were formerly known as the Great American Desert, but are now becoming hospitable and productive under irrigation. But it is not of irrigation we speak to-day, but rather of water as a condition of life and the pains men take to secure it. The accompanying illustration shows the manner of packing the burro as a water carrier on the Mojave desert of California. Without him life would be all but impossible to the explorer, before a permanent camp is established, from which it is safe to radiate in all directions in search of prospects. In the early days on these great Western deserts many "pilgrims" lost their lives. In almost every case these deaths occurred from lack of water and the unfortunate men and women met their fate in the valleys. As the country became better known it was learned that there was often a better prospect for water by going into the hills. There springs were occasionally found, or water had accumulated in natural depressions in the canyon bottoms from the infrequent rains.



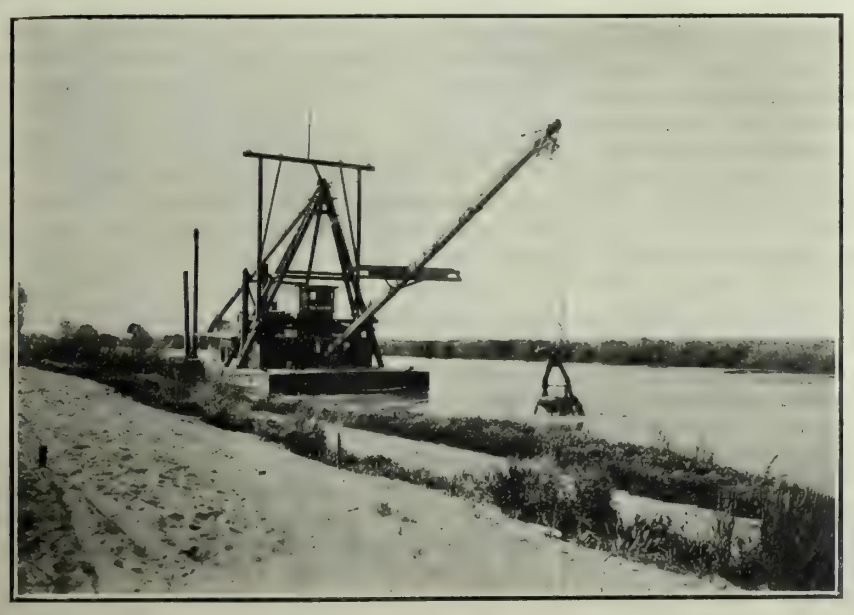
The Price of Life in the Mojave and Colorado Desert Regions of California—A Desert Camp With Water Train.

All desert travelers know how easy it is to pass a good spring of water and not see it at all. There are many places where large springs break out from rock ledges and flow a few yards, to be wholly absorbed by the sands. A traveler may pass sometimes within 100 feet of one of these springs and see no sign of it. Old Woman's springs, 45 miles east of Victorville, San Bernardino county, Cal., is a case in point. There is a spring discharging about fifty gallons of good water per minute, and yet one may pass within 100 feet of it on the bluff above and never suspect its existence. Paradise spring in San Bernardino county, Cal., north of the Calico range, is a few hundred yards off a main traveled road and would not be suspected by a passing traveler who did not know of its existence. These are but two of a score of similar instances known to the writer occurring in Utah, Nevada, Arizona and California. Notwithstanding its many drawbacks, there is a charm about the desert which is almost irresistible. The atmosphere is clear and pure, and although the heat and metallic glare of the day are at times almost unbearable, its cool nights are refreshing and invigorating; its sunrises are gorgeous, and its sunsets indescribable. It is a land of marvels. It contains strange minerals, rich mines, a flora and fauna all its own, and climatic conditions not found elsewhere. Men who have spent many weeks on these arid wastes came in time to admire its vast solitude, its rugged mountains, its trackless valleys — trackless because often well-known roads and trails are wholly obliterated in a few minutes by the driving winds which sweep across the plains, whirling great clouds of sand and dust high in the air, shifting good-sized hills of sand from one position to another.

The prospector goes out into the desert region with little if any misgiving as to his ability to safely return and perchance to find his fortune in the form of a rich mine. Others have done it before, and each prospector feels sanguine of his own success, and believes in his luck.

The Reclaimed Lands.

We propose in coming issues to give much important information concerning reclaiming the overflowed lands along the Sacramento and San Joaquin rivers in the central part of the State. These lands have been the scene of strenuous effort and free investment in reclamation ever since the American occupation of the State, because the lands are of exceeding richness and lavishly repay the cost when permanent protection from overflow is obtained. But reclamation is not easy and many efforts have failed. Recently there has been a great improvement in dredging machinery and greater respect for the water has manifested itself in higher and stronger levees and in that important adjunct in reclamation, the centrifugal pump. Recently, too, there has been increasing interest in investment in reclaimed lands. Not only do our bay district capitalists more adequately appreciate them, but Los Angeles investors and promoters are become quite abundant in Stockton and other river towns. Central California, as a field for investment of surplus southern California capital, is enjoying much advancement.





Dredger at Work Levee Building and an Asparagus Field on the Sacramento River. (See Page 4.)

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The Week.

We are coming very close to the greatest of the national holidays, and yet the noise which has come to be the most striking feature of its commemoration is not yet very loud. It looks as though this year's would be rather a quiet Fourth of July everywhere. It is rather an off year in jubilation. The American people seems to be very busy in pushing enterprise of all kinds, and it will largely devolve upon the small boy to maintain the national traditions this year. Older people will wait for some new flight of the eagle which shall make his scream audible throughout the world before they will feel the impulse to celebrate loudly. Such occasion will surely come. It may be a victory of peace rather than one of war, but it can be depended upon to arrive in due time, and then municipalities and individuals will glow with the old fervor and assault the skies with explosions of oratory and dynamite. It is just as well to take a rest this year.

Eastern fruit shipment is active. Lieutenant-Governor Anderson, who is the great fruit distributor, says that the shipments to the beginning of this week are some 600 cars ahead of the shipment last year, and the total deciduous fruit shipments from the State this year will exceed those of last year by 2000 cars. The shipment of deciduous fruit from the State last year approximated 5700 cars. Thus the diciduous shipment this year will approximate 7600 cars. It is a little difficult to see where all this fruit will come from with some varieties very short and with buyers for canneries and buyers of dried fruits scouring the country and trying to corner whole counties, but it is a fact that some fruits will be in good supply and they will fill the lack of others, especially as the opening at the East this year is unusually good. We presume Governor Anderson is right, and the large figures which he mentions will be realized. There is nothing like a good demand and good prices to bring supplies to light. Meantime we hope some of the pessimists on the fruit product will make a note of what they see this year and not be so positive that the business is going to the bowwows because there are too many trees planted. There is still as good an outlook for planting the right thing in the right place as there ever was.

The reports about pear blight are still somewhat confusing. Some of those who think they have met all the requirements of the experts think they are not checking the disease; others are satisfied that much is being accomplished. There is, of course, a chance that the blight does not behave in the same way in all localities; there is also a chance that some front veranda orchardists do not get their strenuous orders carried out fully. In view of these facts it is fortunate that we shall have a check upon much of this uncertainty in the results of the systematic work which is being pursued by Prof. R. E. Smith and his assistants under the provision by the last Legislature, and which will be carefully examined by Prof. Waite of Washington, who is co-operating with them and will soon be in California again for a season. They will be able to demonstrate just what has been done and what not done by the treatment which embodies the latest science of the subject. In the meantime every one should do his best with the advice which we have printed several times, and be particularly sure that hold-over-blight is not permitted to remain in the orchard through the coming winter. Every discernible atom of it should be burned before the next blooms open.

Spot wheat is firm this week, with but little offering. Futures are higher, both here and at the East, Chicago having improved 2¼c per bushel on September and San Francisco 1¾c per cental on December since our last report. One ship has come in under charter at 22s 6d for wheat or 23s for barley — to Cork for orders. Spot barley is 50c per ton lower, but December is 1½@2c better per cental. New red oats are more abundant and lower. New rye is arriving and the price droops. Beans are firm, except Limas, which are shading a little, having apparently advanced too far for present notions. All meats are quiet, except veal, which is higher, and hogs are firm at old prices. Common butter is weak while a little extra fine is selling above quotations. Cheese is quiet and easy, except select new. Ordinary eggs are weak, but fancy have a rising tendency. There is a glut of all kinds of poultry, only the largest and finest escaping weakness. Potatoes are as before—choice in good demand and common slow. Yellow onions are firm and some going to Australia to balance what we got from there last winter; red onions are slow. Some tomatoes are coming from Mississippi to compete with local stock, but they are held too high to go well. Common fruits are still in oversupply, but better grades selling well, with canners alert to get everything they can use. A few Bartletts come from the Sacramento river and go at $1 to $2 according to quality; meantime buyers are capturing Bartletts in the country as far as they can get them. Dried apricots are moving from the interior at 5½@7½c in boxes and ½c less in sacks. Prunes are firm for old, with nothing doing in new, because growers are firm in their claims. Oranges and lemons are higher. Advance sales of almonds are being made subject to later fixing of prices. Walnuts have a good outlook for price. New honey is bringing fair prices. Hops are being hammered hard, but the hoppers are at them in some places and too much should not be conceded by growers. Wool is being talked down to make it easier to buy the fall clip Wool is strong in distant markets.

We are glad to note that Governor Pardee has appointed Mr. H. P. Stabler of Yuba City as one of the directors of the State Board of Agriculture. This means well for the outlook of the society and for future State Fairs. Mr. Stabler is widely known and popular with the fruit growers, and can well represent that interest. We believe there are other vacancies, and we hope they will be as well filled. Prominent citizens of Sacramento have worked hard on the board for years and have carried the enterprise over some rough ground. Perhaps they are tired. If so, let the board be more widely representative, both geographically and agriculturally. There are plenty of good men, and no doubt the Governor will get one of them into the traces for a strong pull for better State Fairs.

Mr. Gifford Pinchot, United States Forester, is an ideal man for his place, and his conception of the relation between the people and the forest reserves is commendable. Here is one of his latest utterances in the form of instructions to men employed on the reserves:

The administration of forest reserve is not for the benefit of the Government, but of the people. Forest officers, therefore, are servants of the people. They must obey instructions and enforce the regulations without fear or favor, and must not allow personal or temporary interests to weigh against the permanent good of the reserves; but it is no less their duty to encourage and assist legitimate enterprises.

They must make every effort to prevent the misunderstanding and violation of reserve regulations by giving information fully and freely. The object should be to prevent mistakes, rather than to have to punish those who make them. Information should be given tactfully by advice and not by offensive warnings.

So far as we have come into contact with the men up in the mountains, they are trying to do their duty in these regards.

QUERIES AND REPLIES.

Tall Oat Grass Hay.

TO THE EDITOR:—Please inform me if tall oat grass is as good for hay as grain hay, or is it nearly as good, and what kind of hay is it like? What condition of ripeness does it want to be cut for the best results? I have cut it, but the straw is too hard, and after curing stock do not like it. Stock eat it well when it is growing. If it will make good hay I would like to sow a large acreage, as it grows well here and does not require sowing each year. The only difficulty is in the quality of the hay. Will stock keep up on it, and can it be cut so they will eat it?—FARMER, Humboldt county.

Tall meadow oat grass is not counted more than medium quality for hay, and for this reason is seldom grown in regions where timothy does well. In countries where, as in California, the summer is too dry for timothy, tall oat grass is grown as a substitute, but it is chiefly for its pasturage value in the winter time that the plant is valuable in this State. It is also, as you know, quite resistant of drouth and will maintain its life during the summer in some places where other grasses fail. But still we would not consider it a good substitute for grain hay, nor would its perennial character warrant its large growth for hay purposes. A more edible hay can undoubtedly be made by cutting very young, before the stem is mature enough to harden, but by so doing you will sacrifice something of nutritive value, and it will be inferior to grain hay. It is also impossible to get much of the seed with the hay, and for this reason also the hay is inferior in nutritive quality. Nothing but an experiment with earlier cutting and observation of its feeding value would give you the exact information which you desire. If others have had experience with this grass we shall be glad to hear from them.

An Unknown Wheat.

TO THE EDITOR:—I send you a couple of heads of wheat that I would like to have you tell me what variety it is and if you think it would be of value as a milling wheat. I find it growing among a variety called Gold Coin that I received from New Jersey last September for experimental purposes The kind I send you sample of is apparently well adapted to the climate and soil, and, if you think it would be a desirable wheat, I can pick out by hand enough heads to give me a small start.—GROWER, Stanislaus.

It is not possible for us to identify the variety of the wheat which you find growing with your Gold Coin. It has a good look, and, from what you say of its adaptation to the climate and soil, it would be very desirable for you to gather what you can and make a sowing for further test and observation. By this method you will be able to secure next year a milling sample, providing its behavior continues good. In this way some of our most valuable wheats have been secured, and certainly the effort to make full test of this one is desirable. It is an enterprising thing to be always on the lookout for varieties of all kinds of plants which manifest some superior adaptations to local conditions.

Mildew on Raspberries.

TO THE EDITOR:—I send you a few Cuthbert raspberries and a piece of the cane. The berries are covered with a white growth and I cannot sell them on account of it. I have about one-third of an acre and the whole lot is covered with it. The bushes look perfectly healthy, are planted 6 feet apart between rows, but the rows are planted thick and bushy. I did this thinking the fruit should be shaded to keep it from being sunburnt. The ground is moist and I do not give them any water, just cultivate between rows. Can it be the climate or the soil not being adapted for the growth of this delicate fruit? What is the cause? Do you think it best to dig out

the bushes and start a new crop?—GROWER, Alameda county.

The Cuthbert raspberries were so crushed in transmission through the mails that the appearance which you describe upon the fruit was not discernible. The piece of cane, however, showed patches of whitish mildew and we infer that the appearance upon the fruit was similar. If so, the trouble is due to excessive shade, lack of circulation of air, and, perhaps, more than anything, due to lack of heat, which has been characteristic of the present season. The Cuthbert raspberry usually is very strong and resistant of disease. Probably the coolness and moisture of the air, coupled with the dense shade from growing the plants in close rows, have caused the unfortunate appearance which renders your fruit unsalable. Proper treatment would be a thinning of the plants to allow a little freer entrance of air and sunshine. This bay district is excellently adapted to the growth of raspberries, and a soil which gives a good thrifty growth of the plant would also support its fruiting. We conclude, therefore, that this year's experience does not warrant your sacrificing the plantation.

Prunes Cracking.

TO THE EDITOR:—I send you under separate cover some prunes, which I wish you to inspect and, if possible, to tell me the cause of their cracking. They are from 8-year-old trees and I notice in a neighboring orchard of 12-year-old trees the same conditions. We have a large acreage in prunes and about one-tenth the crop is affected like the sample I send you. Some trees are very much worse than others—in fact, on some trees they are all split—and I notice quite a number of diabrotica working on them. We irrigated on the 12th ult. a portion of the orchard, but the unirrigated part shows the same conditions, although not quite so bad. I think perhaps some climatic condition is the cause—being cool so long and then that very hot spell. If so, possibly others may be affected the same way—at any rate, a good portion of our crop is gone, just as we need it most. A majority of the sound prunes have that peculiar mark on the end. Do you think they are liable to split also?—GROWER, Sacramento valley.

It is a very serious case of cracking—there is some plum aphis and resulting smut, but the cracking is the worst feature. It has no relation to any insect you may find on the trees, and you are right in attributing it to the peculiar moisture conditions which have so long held during the present season. This cracking of stone fruits is worst near the coast, and is seldom encountered in the interior valley, except near the rivers or in draws where the damp coast air makes its way through. It seems to be worst where there are marked differences in atmospheric humidity within short periods of time. Where the percentage is quite uniformly high or low there seems to be less trouble. This year the conditions usually restricted to more exposed coast situations have prevailed as never before, perhaps, in the interior valley, and the result is a frightful prevalence of mildew and other moist-air fungi and this cracking as well. Your irrigation had little or nothing to do with it; it was due to causes affecting the air far more powerful than any outflow of water which you could make. There is no relief. Whether the indications of further cracking amount to anything, depends upon what sort of weather follows. One would think that this kind had reached its limit.

An Easy Proposition.

TO THE EDITOR:—If you had to make your living off of twenty acres in the Turlock irrigation district, how would you go about it?—GRASSHOPPER, Turlock.

We would grow everything we had a taste for and eat it up.

Egyptian Corn.

TO THE EDITOR:—I have planted brown Egyptian corn in rows 3 feet apart. Should it be thinned out as much as sweet corn or common yellow corn? I want the corn for chicken feed. Do you know of any bulletin or circular issued by the United States Department of Agriculture that refers to Egyptian corn?—READER, Santa Barbara.

Distance apart depends upon the local climate. Near the coast, with less heat, the plants should be separated to make good grain, and even this is not enough in exposed places on the coast, which are rather too cool for sorghum to mature well. On the other hand, in very high temperature the grain comes well on closely set plants. In the Imperial country the other day we saw plenty of sorghum broadcasted and were told the seed came well in that way. The temperature was then 104, and it goes a lot above that when it tries. You can get Farmers' Bulletin No. 50 on "Sorghum as a Forage Crop" from Washington. Egyptian corn is a sorghum.

Snails and Sow Bugs Still Active on the Coast.

TO THE EDITOR:—Can you tell me what to do to get rid of the small black snails and sow bugs? We are having a terrible time with them both in this locality, both indoors and out. The trouble is mostly with vegetable and flower seeds. As soon as the tiny leaves appear above the surface of the ground they are eaten off. I have tried sprinkling the ground with soot and with slacked lime. Neither one seems to have any effect.—GARDENER, Pescadero.

The unusual prevalence of snails and sow bugs this spring is undoubtedly due to the surface moisture and cool temperature. In addition to what you have tried, we would suggest trapping them; that is, putting either small pieces of board or leaves of cabbage or some other large plant near the seedlings which you wish to protect. The pests will collect under these shelters during the night and you can destroy them in vast numbers in the morning. Your trouble will undoubtedly decrease as the season advances and the surface dries sufficiently to allow you to maintain a dry, pulverized condition of the earth.

Not Ginseng.

TO THE EDITOR:—I send you samples of a root which is believed to be ginseng. If so, can you tell what it would be worth?—ENQUIRER, Los Angeles.

The root is not ginseng, but a balsamorrhiza, or wild balsam, a native plant occurring very widely in arid sections of the coast, and quite remote in the matter of relationship to ginseng. As for the commercial status of ginseng on the coast, it must be said that very little trade proceeds from this point. The ginseng is handled from Eastern points, and we cannot find San Francisco dealers who do much with it or know much about it.

Durable Whitewash.

TO THE EDITOR:—I am well aware that the commonest form of whitewash consists simply of lime and water, but there are, I believe, additional ingredients that when mixed in with the above greatly improve the whitewash, making it more durable and adhesive. I have heard of tallow, soap, an extract from cactus, etc., being used, but I don't know in what proportions. The whitewash I want to prepare is to be used in spraying the barn and hen houses, etc. Whatever advice you can give me on this subject will be appreciated.—READER, Santa Barbara.

A durable whitewash and one which will adhere well may be made as follows: Lime, 30 pounds; tallow, 4 pounds; salt, 5 pounds. Dissolve the salt in the water used in slaking the lime, stir in the tallow while the heat remains from slaking, and add enough more water to make the wash flow well from the brush or work well with the spray pump. One does not spray hen houses merely to look pretty, but rather to get the killing effect of sharp lime wash. The edge is taken off the lime to some extent by the additions. For the outside of buildings and for fences, tree trunks, etc., where the main point is to get long life to the covering and to lessen the rubbing off by contact, the recipe given above is very good.

Watermelons Need New Ground.

TO THE EDITOR:—I have got a 60-acre patch of watermelons here and I notice they are drying out here and there; at some places there are more than others. On the vines I notice quite a few of pumpkin bugs, but I don't think they do any injury because they are around every year. I find no other cause for this disease. A great many other patches are in the same condition. Will you kindly write and tell me what this disease is, and what can I do to remedy the spread of same?—GROWER, Fresno.

We believe your watermelons are being destroyed by bacteria in the soil, which accumulated by using the same ground continuously for watermelons. The effect of this bacterial disease is to cause the vines suddenly to wilt and dry up. There is no cure for this, but experience has shown that it can be avoided by not growing watermelons for more than two or three years upon the same ground. In fact, where it is possible, it is better to rotate crops in such a way that melons shall be grown each year on new ground.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending June 24, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear and warm weather continued until near the close of the week and conditions were favorable for all crops. Thunderstorms accompanied by rain occurred in the mountain regions of Shasta and Trinity counties on the 24th. Grain and hay harvesting are progressing rapidly and grain thrashing has commenced. Wheat is not yielding as well as expected, but in some sections the crop will be about average. Barley is poor in some sections and excellent in others. The hay crop is unusually large and of superior quality. Grasshoppers have caused some damage, but are now disappearing. Hops are making good growth. Flea beetles are injuring vineyards in the vicinity of Sacramento, but aside from this grapes are in excellent condition and a heavy crop is probable. Apricots, peaches and plums are yielding large crops and heavy shipments are being made. Prunes will be light and almonds will yield a fair crop. Citrus fruits are in good condition.

Coast and Bay Sections.

The weather during the week was generally clear and warm, with light fogs in the coast districts. High winds prevailed in San Francisco and vicinity on the 23d and 25th, but caused no material damage. Grasshoppers are causing considerable injury to grain and other crops in the Livermore valley and some of the southern coast districts. Grain harvest is progressing. The wheat crop is very good in some sections and fair in others. Barley is yielding an excellent crop in nearly all places. Hay baling is in progress; there is a large crop and the quality is excellent. Hops are in good condition and will yield a large crop in some sections. Grapes are in excellent condition and a large yield is expected. Deciduous fruits are rapidly ripening and going to market. Walnuts give indications of a large crop.

San Joaquin Valley.

Clear and warm weather prevailed during the past week and fruit and grain matured rapidly. Grain harvest is progressing rapidly; in the northern portion of the valley the wheat crop is light, but a full crop is generally reported from the southern portion. Barley and oats will be from fair to good crops. Rapid progress is being made in drying the apricot and early peach crops, and in many sections the bulk of the crop is now harvested. The apricot crop is generally reported good. Plums, peaches and nectarines are being marketed and are good crops. The watermelon crop will be large and the first are being shipped to market. The hay harvest is about completed; the crop was large and of excellent quality. Feed is plentiful and stock are in good condition. Prospects are now favorable for a large crop of grapes. The orange crop is very promising.

Southern California.

The weather continued clear and warm in the interior, with foggy nights in the coast districts, and conditions were favorable for all crops. The water supply is more abundant than for the past ten years. Grain harvest is progressing and thrashing has commenced. Barley is plump and heavy, and in some sections the yield will be above average. Oats are rusty, but a fair crop is probable. Wheat will be considerably above average. Alfalfa is yielding a good crop. Beans are making satisfactory growth. Sugar beet harvest continues in the Santa Maria district and a large crop is being sent to the factory. Potatoes are doing well. Walnuts are very backward. Oranges are in good condition. Grapes and deciduous fruits are looking well and give promise of good crops. Coachella cantaloupes are being shipped to Eastern markets.

EUREKA SUMMARY.—Cloudy and moderately cool near the coast. Late oats are in excellent condition and will be ready for harvest early in July. Extremely warm in the interior, where, owing to lack of rain, crops made slow growth.

LOS ANGELES SUMMARY.—Cool, cloudy nights continue in coast districts, delaying walnut growth. Cantaloupes and garden truck are doing well. Thrashing is just beginning, and the yield does not promise well. Insect pests are damaging fruits and vegetables.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, June 28, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.04	32.70	65 21	46.64	60	48
Red Bluff	.00	33.81	31.52	26 30	94	56
Sacramento	.00	21.98	16.87	19 99	88	50
San Francisco	.00	23 45	20 59	22.72	62	50
Fresno	.00	12 09	8 04	8.81	102	54
Independence	.00	4 03	2.59	3.77	96	52
San Luis Obispo	.00	23.57	16 99	20.17	76	52
Los Angeles	.00	19 52	8 72	16 51	76	52
San Diego	.00	14 32	4.40	8 24	68	58
Yuma	.00	8 69	1 00	2 89	106	62

AGRICULTURAL ENGINEER.

How Rich Land is Saved From California Rivers.

From an article by Mr. E. D. Van Loben Sels, in the California Journal of Technology for May.

Between the two great mountain ranges of California, the Sierras on the east and the Coast Range on the west, lie her two great valleys. Stretching 400 miles from Iron canyon in the north to the Tehachapi in the south, they form together one great plain, parallel in a general way to the coast. Down the center of this plain flow two great rivers, which drain the vast area—the Sacramento, flowing from the north, and the San Joaquin, from the south. Meeting each other at the head of the eastern arm of Suisun bay, these two rivers flow together through Carquinez straits to the Golden Gate—the only outlet through the Coast Range—out to sea. The vast level country tributary to these streams comprises lands of most varying character.

Geographical and Geological Description.—In the north and central part are immense areas lying above the higher winter floods, yet having enough rainfall to grow good crops of wheat, oats, barley, rye and alfalfa, and to support vineyards and orchards, often with no irrigation whatever, though better results are to be had if the natural rainfall is supplemented to some extent artificially.

In the south are the extensive areas of sand and desert—for the most part fairly fertile, when not too alkaline, and capable of raising good crops, especially alfalfa, if only sufficiently irrigated. The chief drawbacks here are the difficulty of storing enough water for use in a dry summer, and the cost of transportation.

Then, along the rivers themselves and along their tributaries is a stretch of land on an average some 8 miles wide which is either below the ordinary summer stages of the rivers, or at least is subject to overflow in the winter and spring floods unless protected by artificial embankments. This area, some 1,000,000 acres in extent, comprises the "islands" or deltas at the mouth of the rivers and the five "basins" of the Sacramento. For centuries the silt-laden waters of the rivers have overflowed their banks and inundated these lands. As the water flowed farther and farther from its banks, spreading over larger and larger areas, its velocity diminished, and as the current became insufficient to keep the silt in suspension the latter fell to the bottom. The coarser material, the so-called "sediment," was deposited nearest the banks, and from there back the deposit becomes finer and finer, until, in the stagnant water of the basins and lakes reaching up to within 1000 feet or more of the river bank, the finest material, the heavy blue clay, was deposited. Thus there is a gradual change from the bank out as to quality of the deposit. There is also a similar change as to quantity. As the greatest change in velocity occurred just as the water left its channel, the greatest amount of material was deposited right on the banks. Consequently the banks are some 12 feet higher than the land ¼ of a mile farther back, and have quite a decided slope away from the river, while the tracts farther inland, except for an occasional lake here or there, are very nearly level. Thus the curious phenomenon presents itself—common enough, however, in low lands—of a river and its tributaries flowing on high ridges, the height of the ridge depending on the volume of silt carried by the stream.

The description so far depicts conditions along the upper reaches of the rivers. Nearer their mouth, however, the banks become gradually less in height, and consist of finer and finer soil, while farther away from the river bed we no longer find the fine clay. The waters had deposited the greater amount of sediment farther up the river and, carrying comparatively little in suspension when they reached the lower regions, had but little to deposit there. Instead, the regions at a distance from the rivers were merely vast ponds of stagnant water, in which thrived tules and all manner of annual water plants. As these plants died out each year they sank to the bottom, where they were hermetically sealed from the air by the water standing over them. They could not therefore rot outright, but could only decompose in part, leaving a residue called peat, very rich in vegetable matter and capable of supporting the most luxuriant vegetation. The deltas at the mouth of the two rivers are composed, except for the sediment on the banks, almost exclusively of this peat to a depth which varies very much in different places but averages about 20 feet. The strata underlying the peat are sand and gravel.

All three soils—sediment, clay and peat—though differing from each other, are intensely fertile. Indeed, the soil has been correctly described as being one vast mass of fertilizer. It would be indeed difficult to choose the most fertile of the three. Between the upper reaches of the river, where the soil is pure clay, and the the lower reaches, where it is pure peat, is a favored region where the river deposited a clay layer 1 to 3 feet thick, mixed in with the peat about 2 feet below the surface of the soil. This forms an ideal soil, as the clay adds to its firmness and supplies a perfect wealth of those mineral substances so essential to plant life, while the peat supplies an abundance of vegetable matter and, being as porous as a sponge, prevents the soil from being too impervious to water and becoming soggy in winter or dry in summer.

These lands, once reclaimed, are among the best agricultural tracts on earth, for to a soil as rich as that of Holland, yet without Holland's rigorous climate, it adds the balmy sun of California, yet without being subject to California's droughts. For the river itself furnishes an unlimited supply of water, even in the dryest year, without any costly storage reservoirs or systems of flumes and diversion ditches.

But it is as a highway for transportation that the rivers are most essential to that region. For the rivers are free to all, and a transportation monopoly or monopolistic rates are utterly impossible. Indeed, on the lower reaches of the Sacramento there are three competing lines of steamboats, which will stop any day at any spot on the bank to which a farmer chooses to haul his produce, and deliver it in Sacramento, San Francisco or Antioch before morning.

Crops.—This fertile section is the home par excellence of the California asparagus and of all kinds of truck farming which can be conducted profitably on a large scale, beans especially. Its orchards have made it famous in the past, more especially its peerless Bartlett pears. But its asparagus beds and its hops fields, its alfalfa fields and dairies are its chief sources of renown at present. As for its future, none can tell what that will be, but undoubtedly its crops will be constantly more diversified, for all plants of the temperate zone seem to thrive most bountifully.

Reclamation.—For many years past numerous attempts have been made to reclaim portions of these lands, the earlier attempts failing chiefly because of lack in thoroughness. The first of these to be permanently reclaimed on any large scale was the Pearson reclamation district, begun in 1881, which has successfully withstood all floods since that time.

Here it should be explained that by a reclamation district is meant a tract of swamp land protected from overflow by levees and drained by a system of ditches, and, if necessary, a pumping plant to discharge the surface water over the levee. This is the original meaning of the term reclamation, and is the meaning it has always had in California, and in which it is used in this article. Of late years, however, tracts of arid land which are irrigated from a common system of irrigation are also called reclamation districts, especially in the Eastern States. The two meanings of the word should not be confused.

The Pearson district above referred to, officially known as Reclamation District No. 551, is situated on the east bank of the Sacramento river, some 20 miles below Sacramento City. It comprises some 8853 acres, between the Sacramento river and the Snodgrass slough and the two towns of Courtland and Vorden. The greater portion of the soil is peat, with strata of clay intermixed, as described above. Snodgrass slough is a navigable waterway tributary to the San Joaquin, and drains Sacramento basin.

Levee System.—Protection against overflow is afforded by a levee 15.9 miles in length, which reaches completely around the district. Hereof 6.7 miles are on the bank of the Sacramento river, 1.8 miles along Old Hensley slough, formerly a branch of the river, but now dammed off from it, while the remaining 7.4 miles of levee run along the eastern boundary of the district, partly on the bank of Snodgrass slough and partly along higher land. The last section is known as the back levee, and it presented by far the greatest engineering difficulties. In the first place, the elevation of the soil is here in places as much as 12 feet below that on the river, and the soil, or at least the greater portion of it, is peat. Now peat is a most undesirable material for levee construction. When exposed to the action of the air and the sun it dries up like a sponge, leaving great cracks and fissures in the levee, finally becoming so light that it will float. In fact, whole sections of peat levee have been known to float off. Moreover, when dry it will burn, and once ignited it is almost impossible to extinguish the fire. Even if not consumed by fire, the process of decomposition, which was arrested under water, sets in when the peat is exposed to the air, accompanied by a great shrinkage of the material Finally, the greatest difficulty is experienced in peaty soil in securing a firm foundation. For when a great weight is placed on it, it will yield and will bulge out on the sides.

These obstacles were overcome by stripping the soil of the upper layers of peat and the tule roots and discarding them, so as to lay bare the clay layer underneath. The levee was then built exclusively of clay. A floodgate was put in Snodgrass slough which enabled the water to run off at low tide, but prevented it from flowing back again when the tide rose. By this means the water level was kept low enough during the summer months to permit of doing the whole work without having to work under water. Where the elevation of the soil was sufficient the dirt was brought up by scrapers. But the most difficult section along the banks of the slough was situated too low for that, and was too marshy and soft to support a horse. Consequently the material had to be wheeled up by hand in wheelbarrows, at a cost of about 17 cents a cubic yard. By this means a levee was built entirely of clay to a height of 5½ feet above the highest known winter flood level, with a width of crown of 14 feet, outside slope one in three inside slope one in two. These slopes gave a very wide base and thereby prevented undue settling, while the outside slope of one in three prevented any great amount of harm being done to the levee by the wash of the waves in times of flood and storm. The greatest height of the levee was 18 feet, and the corresponding width of base about 100 feet.

The levee proved its worth by weathering all storms that fell upon it. It settled considerably during the first years after it was built, as new levees will, and had to be raised again from time to time. No serious trouble was experienced, however, except in one portion about a mile long. This was a remnant of a former attempt to reclaim the same land and had been thrown up by a dredger. It consisted mostly of peat, and was so full of cracks and fissures that water ran through it in times of flood. To stop this a trench 8 feet wide was dug in the outer slope of the levee, to a depth of 5 feet below low tide. This was then filled in with dry clay, which was thoroughly tamped in. The remedy proved entirely successful and no more trouble was experienced from this source.

On the river front the problem was far simpler. Here the elevation of the soil was greater and the banks were moreover firm and solid, offering a good foundation to build on. In summer, while the river was low, sediment was scraped up from borrow pits on the river bank. In winter these pits were filled by river water, and the water in these pits being stagnant, the matter held in suspension was deposited, filling up the pits in course of time. Thus the river itself furnished the material needed to control it.

For many years these levees proved to be protection enough, but as other tracts along the river were reclaimed, and the river became more and more confined to its channel, flood stages rose higher and higher, until at last, in the flood of 1901, which drowned out two-thirds of the Sacramento river districts, the need of raising all the levees very materially became apparent. In view of the amount of work to be done and the great cost of doing it by scrapers, the district trustees decided to build a dredger for the purpose. The Stockton Iron Works secured the contract.

Description of Dredger.—The dredger is of the "clamshell" type, and when first completed the largest afloat, and cost in the neighborhood of $35,000. Her principal dimensions are: Length of swinging boom, 130 feet; capacity of bucket, 3 cubic yards; weight of bucket empty, 11,000 pounds; length of hull, 100 feet; breadth of hull, 50 feet.

The capacity of the bucket is nominally 3 cubic yards, which means that it will hold that volume when level full, as it usually is when working in sand. But when working in peat and clay it will frequently take twice as much, the soil coming in huge masses as high as the top of the arms of the bucket. Barring delays and under the most favorable circumstances, the dredger can make 1000 swings in twenty-four hours, or handle 3000 cubic yards of material. But delays are unavoidable—if not caused by accidents, at least to replace worn parts and to overhaul the machine. Yet the cost of operation, including attendance, wear and tear, breakage, fuel and supplies, etc., is not over 3 cents per cubic yard.

The dredger is operated entirely by a crew of ten men, making two shifts. It works night and day, but is shut down Sunday to wash boilers and to allow the men this day off. At night it is lighted with electricity from a small generator on board.

Work Done by Dredger.—By means of this dredger the front levee has been raised until there remains but a month's work to bring the whole up to the standard set by the trustees—20 feet width of crown, 6 feet above highest flood plane on record, and an outside slope of about one in four. This means a levee about 12 feet above the elevation of the soil. The crest of the levee forms a wide road.

The use of the dredger meant a change in the material used to build the levee, for the bottom of the river is sand. However, sand has proved its worth along the whole length of the river, and is only open to the objection that it blows away, and that, if ever the water should rise over the top, the whole levee would wash away, without a possibility of stopping it. The first defect is remedied by oiling the road on top of the levee, and the second by maintaining the top of the levee many feet above high-water mark.

On the other hand, sand has the very material advantage that squirrels and beavers cannot tunnel through it, thus doing away with the bugbear of other levees, which have to be thoroughly patrolled night and day every time the water rises to an unusual height, for fear that the water might run through a squirrel hole, gradually enlarging it until the whole levee washed away.

Again, sand, if it will not pack together into one solid whole, like clay that is applied in the dry and powdered state, will not crack and leak like clay or peat that is dug up by a clamshell dredger in the wet state and kneaded together by the jaws of the clamshell into huge separate blocks. Indeed, sand is the best soil for dredger made levees.

On the back levee one coating has been given to all

the lowest spots, which are now raised to from 2½ to 3 feet above the highest known high-water mark, making the levee 20 feet high. The outside slope is about one in four, and the width of crown 10 feet. It will require at least a year's work to bring the whole levee up to the required standard; 6 feet above flood level, 20-foot crown, and outside slope one in eight; because of the very wide base such a levee would have—250 feet in the low places. The reason for this very low slope is to give protection against the fury of the waves, which get worse from year to year as the floods reach higher stages and therefore spread over a larger area.

Since the levee is built up by a dredger, it is no longer possible to pick out nothing but clay. Undoubtedly the peat will rot away in time, leaving a mixture of clay and loam. This loss will have to be made good by giving the levee another coating. Yet even so the cost of this method will amount to but a fraction of that of scraping the dirt up with scrapers at a cost of 15 cents per cubic yard.

Meanwhile, no effort is spared to guard against the evil effects due to cracking of the levee. As soon as a new coating is dry it is leveled off enough to enable horses to walk over it, and then it is plowed as deeply as possible and harrowed until thoroughly pulverized. Then it is sown to barley and sheep turned on it, to thoroughly pack the soil and fill up any cracks which are too low down to be reached by a plow. This method has been found very effective wherever it has been tried.

Drainage.—In the center of the district there is a depression, about 6 feet lower than the surrounding land, some 350 acres in area. In summer this tract is farmed like any of the rest of the land, except that the crop is confined to annual plants. During the winter months, however, this depression, now a lake, serves to collect and temporarily store the rain and seepage water that finds its way into the district. Into it converge a total of about 30 miles of ditches of different cross-sectional area. Most of them are from 6 to 12 feet wide and about 5 feet deep, more or less. They reach over the whole district, and are sufficient to carry off the surface water as fast as it falls, even in the heaviest rain. The largest ditches are 20 to 30 feet wide and 6 to 8 feet deep. There are about 7 miles of these larger ditches.

In the fertile soil of the Sacramento valley weeds grow most rankly, just like everything else, and water weeds are no exception to this rule. Also, the matter of cleaning ditches, which used to be done entirely by Chinamen armed with long knives and potato hooks, is quite an item in the annual expenses of the district. It has been reduced very materially, however, in this district by the use of tools designed for the purpose. The weeds are first cut loose by means of a V-shaped cutting tool, which is dragged through the ditches by a team on either side in the case of the larger ditches. For the smaller ditches the tool is dragged behind a wagon with but one team, the tool being made fast to a beam overhanging the ditch.

When the weeds are cut loose they drift along with the current until they meet some obstacle, forming a dam, checking the flow of water. Another tool, especially designed for removing the weeds, is then hurried to the spot. A beam, pivoted on a wagon bed, is lowered to a horizontal position extending over the ditch. At the end of the beam is a pulley, over which runs a rope, and at the end of the rope a Jackson hayfork is attached. The fork is thrown into the mass of weeds, and the team, attached to the other end of the rope, moves ahead. First the fork with its load rises vertically until it bumps against the pulley on the end of the pivoted beam. Then the end of the beam is raised also, and the whole fork describes a circle in the air until, when the beam is vertical, the fork overhangs the bank. Immediately the fork is tripped, causing it to drop its load, which falls on the bank of the ditch. The fork and beam are then dropped back and the operation is continued.

Besides lessening the cost of removing the weeds from $1800 to $1200 per year, this method of ditch cleaning has the further advantage of tearing up the weeds by their roots, instead of cutting them off, with the result that a ditch, if once cleaned after the weeds have all sprouted, will remain clean for the rest of the season.

The small ditches were all dug by hand and by scraper. For those of over 20 feet in width the district has a "ditcher," a floating steam-driven tool, not unlike a steam shovel in construction and operation. This tool is still used occasionally to widen and deepen existing ditches—a process of improvement constantly going on. At present it is intended to deepen all ditches so that there will never be a less depth than 4 feet of water, both for the purpose of increasing efficiency of drainage and to lessen the weed growth, as the greater depth will deprive plants of the necessary light and heat.

Pumping Plant.—Since the elevation of the land is below even the summer level of the river, the only way to get rid of surface water is to pump it over the levee. For that purpose a powerful pumping plant was built on the banks of Snodgrass slough. That location was chosen because the usual prevailing levels of the water of that tributary of the San Joaquin were in the neighborhood of 6 feet less than those on the Sacramento, and because the soil (peat and clay) did not allow much seepage, whereas the sandy soil on the river front made it undesirable to dig a large and deep ditch right up to the very base of the levee. Experience has shown that the plant is well located.

Irrigation.—In summer the water in the ditches is kept at the required level—a foot or more above the winter level—by syphoning water in through the pumps. However, this is not sufficient, as the drainage ditches are essentially dug through the lowest swales. A second system has therefore been dug, running over the high ridges. The water is kept at a high level in these ditches, usually but a few inches from the top of the soil. Where they cross a drainage ditch the water is piped across the latter, or sometimes a box is made in the drainage ditch and the irrigation ditch built right over it. This irrigation system cost about $5000.

The value of these swamp lands depends on the efficiency and reliability of flood protection, of drainage system and of irrigation system. Also, lands in the Pearson district command the highest prices in the market. The bare land rents for $15 an acre, cash down in advance, while alfalfa fields, asparagus beds or other similarly improved tracts bring much more.

THE VETERINARIAN.

Answers to Inquiries.

By E. J. Creely, D V S., Dean of San Francisco Veterinary College.

OPERATION NEEDED.

To the Editor:—We have a horse that laid down to roll in the pasture and caught her hind foot in a barbwire fence. In her struggles to rise she drove and sawed the barb deep into the foot, splitting the frog, cutting the hoof band and making a flesh wound. We have employed the only veterinary in the town. He has been treating her for three months, has used iodoform and other remedies, the last being peroxide of hydrogen. He has cut out the dead hoof and proud flesh several times. The foot is washed and dressed every day. She wears a high leather shoe to keep the foot dry and clean, and still the wound in the frog does not heal. Our doctor has done all he can, and I thought with your broader experience you might be able to tell us of some healing remedy that would do the work. The horse is a beautiful animal and a pet, so we are very anxious to have her cured.—Subscriber, Lemoore.

The horse requires operative intervention. I would suggest that the frog be cut away entirely, a probe inserted to find out the situation of the pus and treat it with the tincture of iodine, the tincture of chloride of iron and friar's balsam, equal parts. I would suggest that you employ Dr. Gordan or Dr. Griffith of Hanford. Let me hear results.

ACCOUNT OF SYMPTOMS NEEDED.

To the Editor:—We have a seven-year-old mare which shows symptoms of kidney or bladder trouble, but seemed on the way to recovery when given linseed tea in her feed. She is never in heat, eats well, has a glossy coat, yet gets thin and has no spirit. Teeth were said to be all right by veterinarian. Can you help us?—E. C. W. MacDonald, Aptos.

You do not describe any of your horse's symptoms. You say it is kidney or bladder trouble, but do not permit me to judge by the symptoms. You state that you had a veterinarian fix the teeth, but this country is overrun by a lot of hostiers and blacksmiths that know nothing about veterinary dentistry. I would suggest that you call upon Dr. Outhiers of Salinas or Dr. Falconer of Salinas to examine the horse's mouth, and write me full symptoms, and I will place the mare under treatment. Continue to give one quart of flaxseed tea in every feed and give daily a good condition powder (Wilber's or Manhattan), until I hear further from the case.

Edw. J. Creely, D. V. S.
510 Golden Gate avenue, San Francisco.

Too Much Alfalfa for Lambs.

A California sheep raiser writes to the American Sheep Breeder as follows:

My lambs are dying of a disease which I do not understand. They move about with difficulty, the hind legs are drawn up; in a few days they get down and lie, unable to get up, but eat well all the time. The feed is alfalfa pasture with grass.

To the above the following answer is made: The cause of the trouble is overmuch alfalfa, which is excessively rich in nitrogenous elements, and therefore an unbalanced food. Alfalfa is not a proper food for lambs; old sheep can endure it better than young ones, and the difficulty with the lambs is thus caused. The result of this feeding is disease of the liver, and the noted enlargement of this organ with the discolored patches on it are special symptoms due to it. There is no remedy. The prevention of it by feeding sparsely of the alfalfa and the addition of some coarse foods as oat straw or roots to the ration will prevent the trouble. A duly balanced ration of one part of the protein of the food with at least five or six of the carbonaceous elements and better, eight or ten parts only, is safe for feeding to sheep.

THE NATURALIST.

Characteristics and Habits of Coyotes.

From the monograph on this animal by Mr. David E. Lantz of the Biological Survey of the United States Department of Agriculture, to which we have previously alluded, we take the following interesting statements:

The coyotes are noted for their peculiar prolonged howling. A single animal is capable of a performance which impresses the uninformed hearer as the concert of a dozen, and when several join in the medley the resulting noise is indescribable. They are silent during the day, but may be heard at any time between sunset and sunrise.

Breeding.—Coyotes breed but once a year. The mating season is late in January or early in February. The period of gestation is probably that of the whole genus Canis, which is given by Owen as about sixty-three days. The young are produced in dens, and number from four to eight or even more. The dens are usually enlarged from those made by badgers or smaller animals, and are often among rocks or in washed-out places along banks of streams. Probably at times they are made entirely by the coyotes. They are rarely far below the surface, but sometimes of considerable extent and with two or more openings. Little attempt is made to provide nests for the young. In the central West these are born early in April and usually may be heard in the dens during May. In June they come out to play around the mouths of the burrows, which are finally deserted during July. By August 1 the young are left by the parents to shift for themselves.

In the earlier descriptions the prairie wolves were usually said to hunt in packs. Lewis and Clark, Say, Richardson and others so reported, but the Prince of Wied met them only singly. It is probable that they hunt in numbers only when the quarry is large, as in the case of deer and antelope; but as many as three have been known to pursue a single jack rabbit.

Food Habits of Coyotes.—The food of coyotes has been a subject of investigation by the field naturalists of the Biological Survey whenever opportunity offered. A number of stomach examinations have been made in the field; but trapped animals are often found with empty stomachs. In the case of a number of the species nothing definite is known of the food.

The stomachs examined contained mainly animal matter, but in two cases vegetable remains were found. One examined by Vernon Bailey contained a quantity of ripe cultivated plums; and William Lloyd found a coyote that had eaten mesquite beans. In northern Arizona, Dr. Merriam saw a coyote eating a watermelon, and a correspondent at Russell, Kans., says that they sometimes eat ripe melons. In California they eat peaches, apricots, grapes and other fruits. They also eat juniper berries, manzanita berries and the fruit of the prickly pear.

Only one case of insect eating has been observed by the Biological Survey. The same animal that had eaten plums had in its stomach the remains of a large cricket.

Coyotes feed greedily upon all kinds of animal food. This ranges from the larger hoofed mammals to the smallest rodents, and includes also birds, reptiles, fish and crustaceans. Three-horned toads (Phrynosoma) were found in the stomach of a specimen killed June 3, 1898, in Big Smoky valley, Nevada, by Vernon Bailey. On the low tropical coast of eastern Mexico and Texas members of the Biological Survey have often seen coyotes searching the beach for crabs, fish and turtle eggs.

Beneficial Habits.—Among the mammals included in the food of the coyotes are many injurious species; and, so far as their food is confined to these, the animals are decidedly beneficial to the farming interests of the country. The destruction of rabbits, both large and small species, is of great advantage, especially on the plains and in the cultivated valleys, where their depredations are keenly felt by the settlers. The various species of jack rabbit have often been observed as included in the coyotes' fare, and the smaller rabbits are also habitually eaten. The coyotes usually catch the rabbits by lying in wait behind bushes and bunches of grass near their paths and pouncing upon them as they pass. Sometimes they have been known to hunt jack rabbits in company. While a single coyote would not be able to run down a jack rabbit, by hunting together, taking turns in the drive, and by taking advantage of the tendency of the hare to run in a circle, they are able to capture it. Eye witnesses to such a performance state that they do not fight over the division of the rabbit's carcass, but that all obtain a share. The constant warfare of many coyotes upon these rodents has much to do in keeping down the numbers; and the abundance of rabbits in some sections of the West has been largely attributed to a local decrease in the number of coyotes, caused by an unusual activity against them which had been stimulated by high bounties. Prairie dogs are also a staple coyote food.

Besides rabbits and prairie dogs, the food of the coyote is known to include the following mammals:

Rice rats, kangaroo rats, wood rats, ground squirrels, woodchucks, voles, pocket gophers, chipmunks and pocket mice. All of these are more or less harmful, and the coyote performs an important service in preying upon them. The service is not an occasional or a spasmodic one, but lasts throughout the year and throughout the life of the coyote. When the number of animals taking part in the work is considered, the enormous importance of its bearing in maintaining the "balance of nature" becomes apparent.

The coyote is useful also as a scavenger. In the prairie country, especially in winter, it comes into towns at night searching for garbage thrown into the alleys. Here it finds remnants of meat from the table, offal from game and similar prizes. When hungry it will reject no animal food, not even carrion. The slaughter houses near the towns are favorite feeding places, and the animals are often shot there by moonlight. On the ranges they soon consume dead horses and cattle, leaving the bones clean.

Injurious Habits.—Coyotes have been known to capture some of the wild animals that assist man in his warfare against insects and rodent pests. Among them are the weasels. In August, 1903, a member of the Biological Survey met a coyote carrying a weasel in the Pecos river mountains of New Mexico at an altitude of 11,600 feet. The coyote, frightened, dropped its prey and ran. The various kinds of skunks also are probably captured and eaten.

Game Destroyed by Coyotes.—Coyotes destroy considerable game. Birds that roost and nest on the ground are frequent victims. Quail, grouse and wild ducks are caught on the nest, and both birds and eggs are eaten. Wild ducks and geese, when wounded and unable to fly, may be found along the banks of streams and ponds, and the coyotes regularly patrol the shores in search of them. In Oklahoma I found fresh coyote tracks each morning on the grassy borders of a large artificial pond. Ducks resorted there in considerable flocks, and I several times found that they had been eaten by coyotes, as evidenced by tracks of the animals and feathers of the birds.

Like the larger wolves, the prairie wolf kills deer and antelope. In hunting these they always go in packs of two or more and take turns in the chase. They know that their prey runs in large circles, and at intervals individuals drop out of the pursuit, and, crossing a chord of the circle, lie in wait until the quarry passes near them again. In this way the wolves keep fresh until the pursued animal is exhausted, but all of them are "in at the death." The present scarcity of these large game animals gives few opportunities for such chases, but on the plains they were formerly of frequent occurrence.

Depredations on Farm Animals.—The coyote is widely and unfavorably known as a destroyer of domestic animals. Its depredations upon these indicate a marked change of habit since the first settlement of the West. Previously its food was restricted to the wild animals, including young buffalo, antelope and deer. The destruction of the larger game by man may partly account for the change to farm animals as a diet, but it is probable that the quality of the introduced food had much to do with the coyote's preference for it.

The coyote kills hens, ducks, geese and turkeys. Its usual method of capturing them in daytime is to lurk behind weeds or bushes until the fowls come within reach. Turkeys, which range far afield in search of grasshoppers and other insects, are frequent victims. At night the coyote captures poultry from the roost, provided the door of the henhouse is left open. A correspondent of the Biological Survey wrote from Rexburg, Idaho, that one neighbor had lost sixty chickens and another thirty in one night, taken by coyotes.

THE FIELD.

Squirrel Poisoning Experiments in Nevada.

The Agricultural Experiment Station of Nevada has published a bulletin by Peter Frandsen, zoologist of the Station, on experimental killing of ground squirrels, from which we take the following very interesting particulars:

Conclusions as to the Best Method.—No one method has yet been found, nor will such probably ever be discovered, by which we can absolutely exterminate any such pest as the squirrel without labor, without some expense and without much patience and repeated effort. I conclude from my experiments that the best way to carry on a warfare against the squirrels on an extensive scale is by poisoning. This is absolutely the conclusion reached as to the prairie dog problem by those who have investigated it. In the fumigating methods only the animals which happen to be in the burrows will be reached and if the ground is dry and porous—thus allowing the gas to escape—many of these will escape. Much labor will necessarily be wasted in fumigating unoccupied holes, and many holes are certain to be overlooked. In the poisoning methods, on the other hand, every animal is liable to get some of the poisoned bait and a very small quantity of any of the preparations herein described means certain death. Again, one man can distribute poison to 100 holes in the same time that it will take two men to fumigate half the number. Poisoning is also much the cheaper method. Strychnine retails for $1.25 per ounce in most parts of Nevada and, if purchased in large quantities, it may be obtained for $1 or less per ounce. Carbon bisulphide sells for from 25 to 30 cents per pound; gasoline for 40 cents per gallon. In large drums carbon bisulphide can be purchased at the rate of about $1.70 per gallon, including freight, and a cheaper grade of gasoline can be obtained in the same way for about 25 cents per gallon. Taking the retail prices of strychnine and of the food materials used as bait, and regarding the labor of one man as being worth $2 a day of ten hours, I have estimated the cost of poisoning 300 holes to range from 30 cents (formula 4) to 75 cents (formula 1). Estimated in the same way, the cost of fumigating that number of holes with the carbon bisulphide-gasoline mixture will be in the neighborhood of $1.75.

The best time to poison the animals is in the early spring, as soon as they awaken from their winter sleep. They are then very hungry, and, as green feed is not so plentiful, they will readily eat the poisoned bait. Moreover, by delaying the wokk until after the breeding season, there will be from three to four times as many animals to be destroyed. The poison should be distributed all over the territory occupied by the squirrels. For the first poisoning one of the wheat formulas is recommended as being cheaper and more easily prepared. A week later the ground should be gone over again with one of the other preparations, as a second distribution of the same bait may fail to attract the survivors. Later in the season, when green food is plentiful, the best results may be obtained with the bacon preparation given in formula 1. No poison should be put out in very cold or stormy weather.

Those animals which escape the first or second poisoning may be destroyed by the carbon bisulphide gasoline method. Only such holes as are known to bo occupied should be so treated. In the vicinity of the house and wherever there may be some danger of poisoning stock, dogs or poultry, it may also be best to use the fumigating method.

Poisoning.—Experiments were made with the following poisons: Strychnine and its sulphate, corrosive sublimate, red and yellow phosphoros, potas sium cyanide, arsenic and two proprietary poisons. A large number of different food materials were tried, including the following: Wheat, barley, rolled oats, rye, white bread, cornmeal, potatoes, lettuce, molasses, sugar, salt, raisins, currants, prunes and cheese. Of the poisons used strychnine proved to be the most satisfactory, so it was used exclusively in subsequent experiments. The main trouble with it is the difficulty of getting it into solution. For this reason some recommend dissolving it in vinegar. One-half ounce of strychnine to a pint of hot vinegar of good quality is the proportion suggested by W. W. Skinner of Arizona. It seemed to me, however, that food so poisoned was not taken as readily as that prepared without vinegar. Two lots of cornmeal were prepared, of which one was treated with strychnine dissolved in water and the other with strychnine dissolved in vinegar, and each lot distributed to 150 holes. Of the first lot nearly all was eaten; of the second, only about half. In the first case ten animals were found dead upon the ground the next morning; in the second only two dead squirrels were found. Strychnia sulphate is much more soluble than the strychnine—one ounce being completely soluble in fifty ounces of water. It is just as poisonous as the strychnine and the writer advises its use instead. It dissolves better if powdered, and in hot than in cold water. I powdered it with the head of a large bolt in a tin cup. With care there is little danger of inhaling the dust, but one may further guard against it by tying a damp sponge under the nostrils. The poison should, of course, be kept where children are not likely to get at it.

In the early spring the animals will eat almost any food substance, but later they become more particular. During the summer the most satisfactory results were obtained with cornmeal, rolled oats, bacon, raisins, currants and the simple home-made preparation known as "Dutch cheese." Several of the most effective formulas are given below:

Poisoned Bacon.—Cut up a piece of bacon into moderately thick slices and divide each slice into ½ inch squares. For each pound of bacon take one-half teaspoonful strychnine, one-half cup of flour, one-half cup sugar and a few drops of oil of anise. Thoroughly mix the strychnine with the flour and sprinkle the two over the bacon. This is most satisfactorily done with an old flour sifter. Then add the sugar and oil of anise and it is ready for distribution. Put out two pieces to each hole a little to one side of the path (not in the hole or directly in the path of the animals) and also scatter along the trails. A pound of bacon is sufficient to poison 300 holes. One objection to the use of bacon is the danger of poisoning dogs, but if not put too near the house and if cut into small pieces as directed this danger is not great. Although stock was pastured on the field where I used it and there were many valuable sheep dogs about, none were poisoned. Another objection is the cost of the bacon. Salt pork and beef were fed to the caged squirrels, but they did not take to it as they did to the bacon. The smoky flavor seems to be the attractive quality. The animals will eat this mixture when they will hardly touch any other. I estimated that over 95% were exterminated in my experiment. Mr. Clark Drown of Lee, Nev., has for several years used a preparation like the above, but containing a larger amount of strychnine, and always with excellent results. He raises more grain than the majority of the ranchers in the valley.

Poisoned Cornmeal.—Dissolve a small tablespoonful of strychnia sulphate in half a pint of hot water (it is not necessary to pulverize the strychnine in this case). When dissolved mix with two quarts of hot water to which has been added a cup of sugar or two cups of molasses and a dozen drops of oil or anise. While still hot pour over one gallon of cornmeal and stir thoroughly. The cornmeal will swell and is partially cooked. It may be distributed or kept over night. It should be put out in the early morning of a bright day. Place a teaspoonful to each hole. The above amount is sufficient to poison 1000 to 1200 holes. With this formula, in the early summer the percentage of extermination was between 90% and 95%.

Poisoned Raisins.—Two methods of preparation were used. In the first a slit was made in each raisin and a small crystal of strychnine or the sulphate introduced with the point of a knife. This is very effective, but the slowness of preparing it is an objection. Another method is the following: To a gallon of raisins add a quart of hot water, a few pieces of bacon rind, a cup of sugar, a dozen drops of oil of anise, and let simmer on the back of the stove for an hour. Dissolve a small tablespoonful of strychnia sulphate in a pint of hot water and add this to the raisins, mixing the whole thoroughly. Let stand over night and distribute two raisins to the hole in the early morning. It is important not to use too much water and the raisins should not be cooked until they are mushy. Preparations similar to the above have been used quite extensively in Starr and Lamoille valleys and for the most part with considerable success. In most cases, however, more strychnine was used than the above formula calls for and it was mixed with the raisins dry and in a powdered form. If the poison is dissolved separately, as above suggested, a smaller amount will suffice. With this preparation the percentage of extermination was between 85% and 90%. Currants and prunes are prepared in the same way, but on the whole the raisins seemed the most satisfactory.

Poisoned "Dutch Cheese."—Put a pan of thickly soured milk on the back of the stove until the curd is well separated from the whey. Then pour it into a flour sack and hang up outside for twenty-four hours or until all the fluid has drained off. A pan of milk will make about a pint of the cheese. Dissolve a half teaspoonful of strychnia sulphate in a cup of hot water, add a few drops of oil of anise and pour over a quart of the cheese, stirring it well. Then sprinkle over the mixture a third of a cup of sugar. If there is too much moisture add enough cornmeal to take up the excess. This mixture destroyed about 90% of the animals. One thing in favor of its use on a large scale is its cheapness.

Poisoned Wheat.—Dissolve a small tablespoonful of strychnia sulphate in a pint of hot water. When dissolved mix with two quarts of boiling water to which has been added two cups of sugar and a dozen drops of oil of anise. Pour over a gallon of clean wheat, cover and let steam on back of stove for an hour with frequent and vigorous stirring. Then spread wheat in sun to dry. Put out a teaspoonful to the hole This is very satisfactory in early spring, and I also found it very successful during the summer. Another formula for preparing poisoned wheat is that recommended by Bulletin No. 116 of the Kansas station, which is as follows:

Strychnine Poison.—Formula No. 1. Dissolve one and one-half ounces of strychnia sulphate in a quart of hot water. Add a quart of syrup—molasses, sorghum or thick sugar and water—and a teaspoonful of oil of anise. Thoroughly heat and mix the liquid. While hot pour it over a bushel of clean wheat and mix completly. Then stir in two or more pounds of fine cornmeal. The quantity of cornmeal will depend upon the amount of extra moisture present. There should be enough to wet every grain of wheat and no more. Care should be taken that there is no leakage from the vessel in which the wheat is mixed. Let the poisoned grain stand over night and distribute it in the early morning of a bright day. Use a tablespoonful of the wheat to each hole occupied by prairie dogs, putting it near the mouth of the burrow in two or three little bunches. Do not put out the poison in very cold or stormy weather. It will keep for a considerable time and is much more effective after a cold period, as the animals are then hungry and eat the grain readily. A bushel of wheat should poison 1000 to 1200 holes. An excellent substitute for the oil of anise in the above formula can be made by soaking two ounces of green coffee berries in the whites of three eggs. Let this stand for about twelve hours and use the liquid instead of anise oil.

I also had good results with this, but steaming the wheat in my own and others' experience seemed an improvement. A teaspoonful to the hole is sufficient in the case of the squirrel.

Agricultural Review.

Alameda.

ALMOND CROP PROMISING.—Livermore Herald, June 24: Almond growers in this valley will do well this year. There will be an unusually heavy yield and the prices quoted at present are fair. Cashier Mathiesen of the Bank of Livermore states that the yield in their extensive orchards will be heavier than for any season in ten years. The Mel orchard is also heavily loaded. The McCoy orchard will have its usual good crop. This orchard is more sheltered than any other in the valley and has generally been spared by the frost which has cut down the yield in all other orchards in recent years.

Butte.

HAY MAY BE DESTROYED.—Oroville Register: C. Welsh says he has just finished baling 100 tons of hay on the adobe lands near Nelson. He complains of the black gnats and says that this season they were very troublesome. Speaking of the abundance of hay in that section this year, he says that on part of the Shippee ranch he counted forty-three stacks of hay. On the ground cut and raked was fully as much more hay, while in the shape of standing grass was fully five times as much. He thought there would be thousands of tons of hay burned rather than cut the same this season. On a part of Dr. Watts' land he saw one field of 400 acres that was all cheat. Good, clean grain had been sown. This cheat, he understood, would be cut for mule feed.

Fresno.

APRICOTS RIPENING FAST.—Fowler Ensign, June 24: Apricots have been ripening so rapidly the past week that in many orchards the crews have been taxed to their utmost to keep up. At the Gartenlaub orchard, of which R. A. Nye is superintendent, a total of 175 hands are employed to care for the fruit now ripening on 100 acres of apricot trees.

TOMATOES LIGHT YIELD.—Sanger Herald, June 22: It is to be regretted that the tomato vines in the vegetable gardens of the Kings river bottom are blighted so badly at this writing that all hopes of a crop have disappeared for this season, which is an unusual occurrence for this section. Some are now replanting in hopes of obtaining a small crop, nevertheless it is likely that tomatoes will be scarce and high in the local market next fall. Mr. Leathers has discovered a remedy for the tomato blight which has saved his vines and they are now loaded down with green tomatoes.

Humboldt.

CREAMERY PRICES.—Arcata Union: The Arcata Creamery and Laurenson & Peterson paid this month for butter fat 20½c. Creameries in the Eel River valley paid as follows:

Abramson 22c; Capitol 21¾c; Cream City 21½c; Eel River 22c; Central 16 days 21c; 15 days 23c; Ferndale 22c; Grizzl yBluff 22c; Pioneer 21½c; Riverside 22c; Seaside 22c; Sunset 23c; Coldbrook 22½c.

HEAVY WOOL CLIP.—Arcata Union, June 21: Thos. Bair arrived from the hills last Friday where he has been for several weeks superintending the shearing on his different sheep ranches. The clip this year is exceptionally fine and heavy, and Mr. Bair now has in the neighborhood of 100,000 pounds of wool on hand, including the clips of some of the other ranches in that section. However, at the prevailing high prices he is in no hurry to sell, although he has had a number of good offers. Some of the growers in southern Humboldt received for their wool as high as 30c per pound, and there is no reason why northern Humboldt wool should not bring as high a price, or even better. Mr. Bair sold for as high as 34c years ago.

Kings.

COMBINED ON APRICOTS.—Hanford Sentinel: We learned June 15th that a number of the larger fruit growers of this vicinity have recently gotten together and agreed upon a price for dried apricots. The paper was liberally signed by nearly all who were approached upon the subject, even the Chinamen signing. The price fixed is 7 cents a pound, and the fruit growers think that ought to be a reasonable figure, considering that the Los Angeles people come here and pay a price equal to nearly 8 cents for the fruit green.

WILL HARVEST A BIG CROP OF GRAIN.—Hanford Journal, June 23: J. W. Barbour states that he and his partner, H. Clawson, will harvest between 50,000 and 100,000 sacks of grain on their lake lands this year and on the lands they have rented. While the rust, he says, has materially reduced the crop of wheat from what it would have made, the barley sown has yielded heavily and the grain crop is a paying one. All danger from flood water on the lake now seems to be over, though a few pessimists are still predicting high water, despite all evidence to the contrary.

Los Angeles

ALFALFA TEN FEET IN HEIGHT.—Pomona Progress, June 22: James Hind on Saturday brought to the office a sample of what is probably the tallest alfalfa that ever grew in this valley. It measured exactly 10 feet from the stalk where it was cut to the topmost leaf. Mr. Hind found it growing up through the limbs of a large orange tree on the O'Connell ranch on West Holt avenue. The remarkable thing about it is that it has grown within the past year and without any irrigation.

Mendocino.

WOOL GROWERS DID NOT SELL.—Ukiah Dispatch-Democrat, June 23: Tuesday last as wool sale day can go down in local history as the day when no wool was sold. Lucas' warehouse was full of wool, several buyers were on the ground, and growers galore were present all anxious to get down to business. But up to last evening not one pound of wool had changed hands. Several days ago several lots of wool were sold at 30 cents and the Mendocino county growers expected that to be the ruling price Tuesday. When they found that the best offer was but 27 cents they were somewhat astonished, and so far are holding out for an additional 2 or 3 cents. The buyers appear to be working the old game, heretofore successful, of coming up from the city fully agreed as to the price they proposed to pay and as to the division of the wool after it is purchased. Last season several of the growers declined to sell on wool sale day and they were rewarded by receiving several cents additional to the price ruling on that day.

HIGHEST WOOL.—Ukiah Press: The top notch for wool prices so far received is reported for Clark Bros. of Cahto. Their wool was sold delivered at Sherwood for 30½ cents. The wool was a year's clip, which gave them a little advantage as to price, as it is much longer and is, therefore, in demand for mixing with other wool for weaving. The Clarks have one of the finest ranches in the county and are known as scientific wool growers. Besides having well bred flocks, the sheep are carefully watched and at the sign of any disease it is immediately wiped out.

Modoc.

SHEEPMEN OBJECT TO PAYING LICENSE TAX.—Alturas special to Sacramento Bee: Several sheepmen have refused to obey the county ordinance requiring them to pay a license for the privilege of grazing their sheep within the county. In consequence, Tax Collector J. Todd Bonner has sworn to several complaints before District Attorney E. C. Bonner, which will cause their arrest, and the matter will be tried out in the courts. Several bands of transient sheep are near the county line and they will be brought in if the law requiring a license fee shall be declared illegal. Tax Collector Bonner stands firm and has notified all that they must pay the fee before entering the county.

Riverside.

MORE THAN AN AVERAGE CROP.—Mr. H. K. Small has had a great deal of experience in grain raising and is thoroughly posted on the subject. He reports the grain crop around Moreno as very fine, especially some several thousand acres of land belonging to Francisc Pico. In the Menifee country he found much wild oats which compelled the farmers to cut a large portion of the crop for hay. In Diamond valley, where he is familiar with conditions, Mr. Small says he never saw a better crop. Taken upon the whole, he thinks the general average compares favorably with that of two years ago, with the difference that more than two-thirds of the acreage was in wheat, while this year more than two-thirds of the acreage is in barley.

Sacramento.

DAMAGE TO VINEYARDS.—A Sacramento dispatch says: Reports have reached the office of the State Horticultural Commissioner in the State Capitol that the flea beetle is doing considerable damage to the vineyards in this vicinity. The insects have not only eaten the leaves off the vines and attacked the stems, but also bunches of grapes.

San Diego.

LEMON GROWERS ONCE IN CLOVER.—Union: The lemon growers with plenty of fruit and with plenty of men to pack it are in clover these days. The orders are coming in fast from the East, and some of the packers and shippers are finding difficulty in filling all they receive. Prices are also better than they have been at any time during the season, and bringing the growers pretty good returns for their fruit. A few weeks ago some of the fruit shipped East brought only enough to pay the freight bills, but it is different now. From $1.50 to $2 a box is being paid for the fruit here, and this price brings fairly good returns to the growers.

San Joaquin.

NEW WHEAT.—Stockton Independent, June 24: The first few samples of new wheat have been received and some of it is of excellent quality, while other lots are badly pinched. It was generally supposed that there has been sufficient moisture this year to cause the grain to mature, but in some localities the grain did not fill out right. The wheat grew to the proper height, and from the roadway looked to be of very fine quality, but when it came to harvesting it, not over two sacks to the acre could be secured. The proper figure to offer for new wheat is giving the local dealers some concern at present. They say that good club will bring about $1.35, and Australian from $1.42½@1.45, though not a sale has been reported up to date. The farmers are in no hurry to dispose of their grain, as they believe that they will get better prices later.

BALERS WORKING ON HAY.—Haying has reached a point where the dealers can determine the general quality of the crop and get some idea of the quantity. A large acreage has been cut and balers have commenced work, but not much of the new crop has been received, as the farmers are too busy to begin hauling in the feed, which is not yet ready to be stored. The ranchers are waiting for the dealers to establish a market, but the buyers appear to be in no hurry to name the prices for new hay. A few lots have been purchased, but in every instance the figures are said to have been quite low. Many of the ranchers will not accept the offers made.

BURNED 30,000 BUSHELS OF GRAIN.—Stockton special to Sacramento Bee, June 23: A disastrous grain fire, causing the destruction of 30,000 bushels of wheat and barley and a combined harvester, occurred 6½ miles northeast of Tracy. The fire caught in some dry grass, where the harvester was making a turn. It spread to the grain and a few minutes later caught up with the harvester, the heat exploding six casks of crude oil, and so enveloping the harvester in flames that the crew had to flee for their lives. A wind was blowing and all efforts to stay the progress of the flames proved futile.

Santa Cruz.

BARLEY ON ALKALI LAND.—Watsonville Pajaronian: Two thousand acres of fine barley are growing on the alkali land belonging to the Spreckels Sugar Co., about 6 miles north of town. This is the land upon which an effort was made to raise sugar beets some years ago. Since then a vast amount of alkali has been washed and drained out of the land. The barley will average twenty sacks to the acre.

NEWTOWNS AND BELLEFLEURS.—The Newtown pippin crop of this valley is the most promising in the history of fruit growing in this vicinity. The trees are bending under their load of fruit and rigid thinning is in progress in all parts of the valley. Thinning Bellefleur apples is unusual, but such work is in progress in Pajaro valley. The fruit is of large size, and unless something unforeseen happens to change the situation, Pajaro valley should harvest a banner Bellefleur crop this year.

Solano.

WILL RECLAIM ISLAND AND GROW ASPARAGUS.—Special to Sacramento Bee: The owners of Joice island have organized a company with a capital stock of $100,000, to be known as the Joice Island Asparagus Company. The stock is divided into 1000 shares of a par value of $100 each. The company intends to reclaim the land of the island and devote the same to the cultivation of asparagus and alfalfa.

Sonoma.

BUY POOL PRUNES.—Healdsburg Enterprise, June 24: Sheriffs Bros., the prune packers of this city, were the successful bidders for the prunes of the Healdsburg Prune Growers' Union. The bid was on a 2½-cent basis and 25-cent premium for 30-40's. The estimated quantity controlled by the union is 400 tons.

TWO-STORY TURNIP.—Santa Rosa Press-Democrat: D. J. Bertoli, market gardener on the Sebastopol road, brought to the office Thursday two oval turnips, each larger than a goose egg, one growing on top of the other, and the pair supplied with but a single tap root and one bunch of leaves.

Stanislaus.

GRAIN PRICES IN MODESTO.—The market price of barley and of oats has declined steadily and rapidly since the opening of the new crop season. Feed barley is down to 80 cents and first-class brewing would not bring over 85 cents in this market. The price of oats has dropped to the neighborhood of $1.05. On the other hand, wheat is quite high, the quotations ranging from $1.42½ to $1.45, Modesto delivery. The Grange Co. calls attention to the fact that for five or six years barley and oats have not failed to command good prices after Christmas, and it is their opinion that the farmers will hold these grains for better prices.

THE FRUIT CROP.—Oakdale Leader, June 23: The cutting and drying of the apricot crop in this locality is now well advanced. While this crop will not be so large as that of former seasons, employment is being given to a large number of persons at a fair wage. The yield of the berry crop is well up to the average, but it is believed by orchardists that the peach crop in this locality will fall short at least one-half.

Sutter.

WILL HARVEST BURR CLOVER.—Yuba City Farmer: The demand for burr clover for green manuring in the orchards of the State has led to quite a demand for the seed of this well-known plant and several parties who have low land with a good stand of clover this season are preparing to harvest it. Cline Bull has several thousand acres of fine clover on his place along Bear river south of Marysville, and, according to his estimates and the price, there is $1,000,000 worth of the stuff there.

Tulare.

ORANGES AT LINDSAY.—Visalia News: J. B. Eager of Los Angeles, who owns a fine orange grove in the Lindsay district, has received phenomenal returns from it this season. Mr. Eager has both the Navel orange and the Valencia late variety. It is the latter which brought him the largest yield of money yet received in this part of the State—about $800 per acre.

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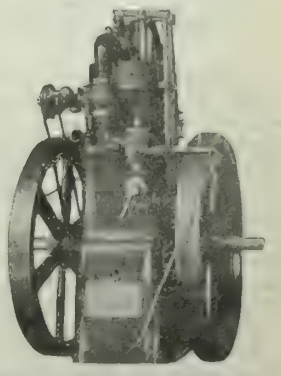
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The Home Circle.

The Old Home.

An old lane, an old gate, an old house by a tree,
A wild wood, a wild brook — they will not let me be;
In boyhood I knew them, and still they call to me.

Down deep in my heart's core I hear them, and my eyes
Through tear mists behold them beneath the old-time skies,
'Mid bee-bloom and rose-bloom and orchard lands arise.

I hear them; and heartsick with longing is my soul,
To walk there, to dream there, beneath the sky's blue bowl;
Around me, within me, the weary world made whole.

To talk with the wild brook of all the long ago;
To whisper the wood-wind of things we used to know
When we were old companions, before my heart knew woe.

To walk with the morning and watch its rose unfold;
To drowse with the noontide lulled on its heart of gold:
To lie with the night time and dream the dreams of old.

To tell to the old trees, and to each listening leaf,
The longing, the yearning, as in my boyhood brief,
The old hope, the old love, would ease my heart of grief.

The old lane, the old gate, the old house by the tree,
The wild wood, the wild brook—they will not let me be;
In boyhood I knew them, and still they call to me. — Madison Cawein.

Do Babies Pay?

Each night when I go home from work,
Tired with toil of day,
A little tot is waiting me
To drive the cares away.
"Here comes papa!" aloud she cries—
Her chubby hands raised high—
"O doody, doody, papa's home!"
I hear as I draw nigh.
And then she toddles down the walk
And meets me at the gate.
And I forget I'm tired out
When she begins to prate;
"O, papa, I'm so glad you tome—
I fink you're awful nice—
Say, papa, how much did I tost,
And am I worf de price?"

She tells me what a "splendid time"
She's had "wif dolls and toys"
A perfect little chatterbox,
Chock full of life and joys.
And every evening, she and I,
When supper time is o'er,
Can hardly wait until we've had
A romp upon the floor.
And when her mamma interrupts
With baby's little gown,
She cries, "O, mamma, lookey here!
I've dot my papa down!"

Then as we tuck her in her bed
She says, "Tome, tiss me twice—
And, papa, how much did I tost,
And am I worf de price?"

—Denver News.

The Scent of the Lilac.

A great green lawn, smooth and velvety. Flowers and shrubbery everywhere. The murmuring music of the fountain mingled with the songs of birds. The scent of the lilacs hung heavy in the air. And beneath the green arch of the sheltering trees sat a woman. She was in perfect harmony with the beauty of her surroundings; the face was pure and fair, and her eyes like the clear depths of a lake in which heaven's blue was mirrored.

Jewels gleamed in the golden hair, that in the dim light of the waning June day looked like a coronet.

Over the lawn came a child, with blue eyes and golden hair, the very miniature of the beautiful lady.

"Mamma, hasn't Estelle made me look pretty?"

"Yes, darling."

"When will papa and the company come?"

"Soon, my own."

"Oh, dear! I wish they would hurry! Estelle said I would have a lovely time. Oh, mamma, it's so lonesome." The blue eyes filled with tears.

"Don't cry, my child. Shall mamma tell you a story?"

"A nice story? Yes."

"Well, once upon a time there lived a little girl with blue eyes and golden hair like yours. But she was a poor little girl, and didn't have such pretty dresses. All of hers were made of calico, and she went in her bare feet—"

"Oh, mamma, I don't want to hear about a poor little girl."

"Oh, my darling, but the little girl was rich."

"But her feet were always bare."

"Yes, but she was rich. She had three of life's precious jewels—youth, innocence and love. There was a little boy, with big brown eyes, and he loved the little girl."

"Were his eyes as brown as Mr. Thurston's, mamma?"

It was only a child's thoughtless question, but the lady was startled.

"Yes, they were very like."

"Did the little girl love the little boy?"

"Oh, ever so much. They used to play out under the lilac trees. And in early June, when the flowers bloomed, the air would smell so sweet! Just like these lilacs here. But the little girl grew up, and one day a prince came and he loved the little girl. He told her if she would go away to his palace with him she would be happy, for she would be rich. She would have jewels and laces and fine dresses. She would have gold in abundance. She would hear the most beautiful music. And she went"

"Did the prince give her the lovely things, mamma?"

"Ah, baby, they were not nice. The purest gold was in the heart of the wild rose in the lane. The fairest jewels were in the old-fashioned garden and the sweetest music was the murmuring of the dewdrops that gleamed on the flowers by the brook where the boy and girl used to play."

"Was the princess happy, mamma?"

"No, baby, no! The heart was broken. She could always dress in beautiful gowns, but she could not forget the ache in the heart, and—"

"Oh, mamma, here they come!"

Across the lawn came two gentlemen, one a hard-faced, cold-eyed man, with iron-gray whiskers, the other tall and dark and handsome.

The tall gentleman took a seat and beckoned the child to him.

"Have you been having a nice time, Marguerite?"

"Mamma has been telling me a story. She almost cried about it, but I didn't think it was sad. No one died in it."

"What was it about?"

"All about a girl with bare feet and blue eyes and golden hair like mine," shaking her fair hair. "I thought she was poor, but mamma said she was rich."

"Why?"

"Because she had flowers and love and a farm—Did you ever live on a farm?"

"Yes, but the little girl?"

"Oh, there was a boy with brown eyes like yours. mamma said. They used to play under the trees when the flowers bloomed and the air was sweet with their perfume. He loved the little girl and he had a great big heart."

"What did the little girl do?"

"She married a prince. He said he would give her gold and jewels and music and—"

"Did she get them?"

"Yes, but mamma said the gold wasn't real gold. It was just misery."

"Wasn't she happy?"

"No," said Marguerite, looking up with eyes strangely like the eyes of that other Marguerite whose eyes had looked into his from beneath the checked sunbonnet years ago. "Her heart was always aching for the boy, and heartache must be awful bad, 'cause she cried."

"Come, Marguerite," cried her mamma. "You will tire Mr. Thurston with your clatter."

"Marguerite has been telling me a story," answered the man. Then, detaining the child: "Listen, little one, I will tell you the rest of that story."

"Do you know it?"

"Yes. Tell your mamma that the rest of that story is—" He looked at the beautiful woman.

"Is what?" impatiently.

"This. That the scent of the lilacs has vanished on the summer's air, and that the boy's great heart is dead."—Boston Post.

Pansy Culture.

William Toole of Baraboo, Wis., recently read a paper on pansy culture which, although it does no serve as a guide to California practice, still has some interesting suggestions. He said in part: Pansies are not deeply rooted plants and cannot reach far for nourishment, therefore must be given a good soil, which is reasonably retentive of moisture. Where a choice can be had, a rich loam is best, but well-fertilized, clayey soil will give good flowers; and, if sandy, the ground can be helped with well-rotted manure, and occasional watering in a dry time.

For spring and early summer flowers, the seed may be sown in frames from middle of July to late in August, or even later farther south. Still better, the seeds may be sown in a greenhouse from early in January to middle of February, and even later, for succession to fill late orders. These plants which have been started early indoors should be transplanted once in the greenhouse, and again as soon as possible out of doors, where they can be hardened off before being planted where they are to blossom.

The plants to be wintered over should be protected with a slight covering of straw or forest leaves, supported by a little brush or with a frame covered with boards. Surface drainage must be provided. Whether indoors or out, the seedbed should be well prepared of finely pulverized soil and pressed down evenly before and after sowing.

Seeds should be sown in rows about 2 inches apart and quite thinly in the rows, not covering more than ¼ inch deep. If surely out of sight, the seeds are deep enough. Covering the seedbed with finely sifted woods-earth before sowing is desirable, and after sowing, a shading of some kind of cotton cloth to prevent drying.

Rotation is desirable, so our pansies follow some farm crop. The present year's flowers and seeds were grown where winter wheat was last year, and so next year the ground is in partial preparation where this season was a crop of potatoes. We always aim to have our ground in good tilth and ready to receive plants in June, even if the weather is dry.

When the plants are all ready to be set out, the field, which has been prepared by the cultivating mentioned and final smoothing with plank and harrow, is laid off in long beds by making furrows 4 feet apart with a hand cultivator. These beds are raked smooth—any trash being deposited in the furrows—which leaves the ground almost level and ready for being marked out, with a pair of rows about 18 inches apart to each bed, leaving 30-inch spaces for paths.

The plants are dug with a spade and carefully separated to save the roots as much as possible. They are then laid out flat and evenly and the roots dampened with a fine spray, then sprinkled on both sides with soil, thus keeping them moist, without being muddy or sticky. Holes are made with common flat garden trowels, scraping away the dusty surface if necessary, and the plants are very seldom watered after planting, and not shaded, although planting is sometimes suspended during the hottest part of the day.

Frequent cultivation with hand and wheel hoe is kept up until early in September, by which time the plants shade the ground somewhat. The first blossoms in July are picked off for a couple of weeks, to prevent seeding until the plants have become established. Seed picking commences generally about the middle of August and continues to late in October.

Those who do not wish to save seeds would better not permit any to ripen, but if desirous of saving seeds, gather only from the best, and notice that some plants are more fruitful than others; so without care it is possible to soon run to a few kinds—those which do not seed freely being overwhelmed by the others.

Pansies seed more freely in spring and fall than through the heat of summer; they seem to need the aid of insects to spread their pollen, and this is done by bumble bees more than any other insect, the honey bees visiting them only very early in the spring and late in the fall when there are no other outdoor flowers. A rich soil, frequent cultivation, a good strain of seed and good growing weather are the chief requisites for best results in growing pansies.

Petroleum for Complexion.

"If you want to see complexions, come to the oil wells," remarked the experienced operator in crude petroleum, smiling.

"Not women's complexions—no; they are not enough in touch with the real atmosphere that creates the peaches-and-cream cheeks and brow and chin and neck and ear. These complexions belong to the hairy, bristled men who work day after day under the spouting oil of the active well, or around the pumps that draw the black or green or amber fluid, as the case may be, from the depths.

"I don't know whether the skin specialist has any explanation of the phenomenon, but it is true, nevertheless, that a man who works under the grimy conditions that are inevitable around the petroleum well takes on a skin that the society woman might envy. Where the work is the grimiest and greasiest the complexions of the men are the fairest. I have seen men smooth shaven, who at evening receptions could make a fortune posing as living proofs of So-and so's complexion ointments, if the 'fake' could be maintained and the opportunity made possible.

"To some extent it is the grease itself that does the smoothing for the skin; where the color comes from is a guess with me—I could hardly lay it to the dyes that are in the basic material in some of these oils. But I know this much about crude petroleum—a steady application of it to the skin will make a complexion for any one who will take the course in earnest. If I were a woman seeking a complexion, as many women are, I would invest in a barrel of crude petroleum and bathe in it regularly.—Chicago Tribune.

Differences in Two Sides of the Body.

"Speaking of oddities," said another man, "there is 'more truth than poetry' in the rather rough saying, sometimes indulged in a bandying spirit, that 'your feet are not mates.' The fact is we are not as perfectly made as the sculptor, the painter and the poet would have us believe.

"For instance, the two sides of a person's face are never alike. The eyes are out of line in two cases out of five, and one eye is stronger than the other in seven persons out of ten. The right eye is also, as a rule, higher than the left. Only one person in fifteen has perfect eyes, the largest percentage of defects prevailing among fair-haired people. The smallest interval of sound can be distinguished better with one ear than with both.

"The nails of two fingers never grow with the same rapidity, that of the middle finger growing the fastest, while that of the thumb grows slowest. In fifty-four cases out of 100 the left leg is shorter than the right. So, you see, we are not the perfect creatures we are sometimes represented to be, nor is it quite so horrible as one might imagine to be reminded that one's feet are not mates. The feet are not mates, as a matter of fact, that is, they are not both exactly alike and of the same size. —N. O. Times-Democrat.

Tired feet should be well bathed in warm water, to which a little sea salt has been added. Dry thoroughly, and rub with a little lemon juice. It is wonderful how this treatment soothes them.

Domestic Hints.

Manhattan Scallops.—Shred some cold boiled white fish until you have a cupful; mix with it the same amount of stale bread-crumbs; add two eggs, a little pepper and salt, a dash of cayenne and a half cupful of stewed tomatoes. Turn into a baking dish, cover the top with fine cracker crumbs, drop bits of butter over it and bake for half an hour.

Delicious Caramels.—One and one-half pounds of white sugar, one cake, or half a pound of chocolate, a cupful of cream, a quarter pound of butter, a teaspoonful of flavoring. The mixture will boil up and dent on the surface when nearly done. A good test is to take a little out and rub with the back of a spoon, to see if it will crumble, when it should be taken off. Mark off in squares before it is entirely cold.

Peach Compote.—Use either fresh, canned or dried peaches, and stew until very soft; sweeten well and allow them to simmer in the water in which they are cooked; then remove from the fire, and when cold, strain and turn into moulds of rice. Make the moulds by lining ordinary teacups with boiled rice and leaving a deep depression in the center, this depression to be filled with the peach mixture, which may require a little gelatine if it does not "boil down" to the right consistency.

German Soufflés.—Boil a cabbage and chop into bits, season well with salt, pepper and a little nutmeg. Put a layer of breadcrumbs into a dish, and over it a layer of the cabbage; pour over the whole a thick, white sauce made by mixing a cupful of milk with a little flour, a piece of butter and allow it to boil until it thickens. Then add a thick layer of grated cheese, a layer of cabbage, and so on, pouring over the last layer, which should be of the crumbs, a goodly portion of the sauce. Bake twenty minutes in a quick oven.

Salmi of Chicken.—Put a tablespoonful of clarified beef dripping into a saucepan, and when it bubbles up over the fire add three or four thin slices of bacon and let the whole fry until nicely browned, mixing with it a tablespoonful of flour and a wineglassful of wine. Turn in, a little at a time, a cupful of hot water. Season with pepper, salt, a dash each of allspice, cloves and cayenne and a spoonful of lemon juice. Cut the chickens, which you have parboiled, into large pieces and cook them in the sauce for an hour and a half. When done nicely, arrange on a platter, pour the sauce over them and garnish with rounds of lemon and French fried potatoes.

Hints to Housekeepers.

Silver, if left lying near guttapercha, gets tarnished very quickly. If put in a pantry where gas is used, it should always be kept well wrapped up in chamois leather.

When asparagus is to be served cold as a salad, boil and drain as usual, and after draining let cold water run gently over the stalks to keep them firm and fresh looking.

A brilliant polish may be given to brass door fixtures, ornaments, etc., by washing them in alum and lye. Make a solution by boiling an ounce of alum in a pint of lye, and wash the articles in it.

When long hair becomes so matted that it is difficult to comb the tangled locks, they should be saturated with alcohol. This done, they will become amenable to the brush and comb as if by magic.

A writer in a current magazine gives some useful suggestions for porch and roof garden furniture. Among other things, she recommends that cushions be covered on one side with oilcloth. At night the oilcloth side should be turned uppermost, so if it should rain they will suffer no harm. Moss is used for stuffing the pillows, since dampness is fatal to feathers or down.

When traveling it is well to be provided with a bottle of aromatic spirits of ammonia. In case of faintness ten to twenty drops taken in a wineglass of water will often give relief. If one is to be alone it is well to provide the medicine beforehand. Fill a three-ounce bottle with boiled water and add a teaspoonful of the spirits, shake well and cork tightly. It can be taken in two doses half an hour apart.



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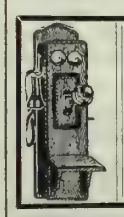
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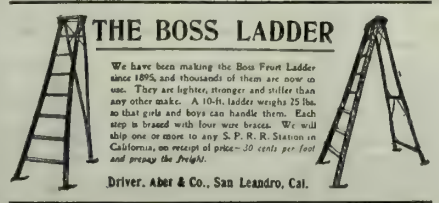
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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, June 28, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 88⅝@ 90	84⅛@ 84⅞
Thursday	90¾@ 88⅞	84⅞@ 83⅞
Friday	90⅝@ 91⅝	84⅞@ 85⅞
Saturday	89¾@ 91¼	84⅝@ 85⅝
Monday	90⅜@ 89⅜	85¾@ 84⅞
Tuesday	89⅛@ 90⅞	84⅞@ 86⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	54⅞@54¼	53¼@52¼
Thursday	54 @54⅝	52⅝@53¼
Friday	54⅝@53⅞	53⅛@52⅛
Saturday	53 @53½	52 @52¼
Monday	54⅜@53½	53⅝@52¼
Tuesday	54⅜@56½	53½@55⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Thursday	$1 37⅜@1 37¼	$ —@—
Friday	1 37½@1 38¾	—@—
Saturday	1 38 @1 39	—@—
Monday	1 39½@1 39	—@—
Tuesday	1 39⅝@1 39	—@—
Wednesday	1 38¾@1 39½	—@—

Wheat.

Offerings in the spot market are light. Materially stiffer prices than are named by buyers would be necessary to draw forth wheat to this center in great quantity from the producing sections of this State. As harvesting progresses, the fact becomes more pronounced that the yield is light and a large proportion is pinched or otherwise off in quality. Prospects are that this year's yield of California wheat, like that of 1904, will not prove sufficient for home requirements, and that the exports of this cereal from San Francisco in the next twelvemonth will be decidedly light, largely made up of importations from Oregon and Washington. Much of the wheat now offering by sample in the open market shows low grade, and recent sales of the same have been made fully up to the figures generally quoted for first-class grain. Ship owners are asking 22s. 6d. per ton freight on wheat cargoes to Europe, usual option as to ports, but exporters are not chartering. A French ship arrived this week under engagement at above figure for wheat, with the option of barley at 23s. 9d., or the vessel may take a general merchandise cargo. There is a liberal supply of disengaged tonnage in harbor and a large fleet headed this way.

California Milling	$1 55	@1 65
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 wheat	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

During past week the range on options was:
December, 1905, delivery, $1.37¼@1 39¾.
Wednesday, at the forenoon session of Exchange, December, 1905, wheat sold at $1.38¾@1.39½.

Ocean freights and prices for wheat, as compared with a year ago, are as follows:

	1903-04.	1904-05.
Liv. quotations	6s7d@6s8d	-s-d@-s-d
Freight rates	17½@-s	22½@-s
Local market	$1 27½@1 32½	$1 50@1 55

Flour.

There is a fair movement, both outward and on local account. Current values on brands well and favorably known are being well maintained, there being no undue selling pressure. There is some old flour on the market, not desirable in quality, and this stock is being urged to sale at low prices.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Trading in the spot market has not been very active the current week, buyers generally talking lower prices than growers were willing to accept. Spot stocks are not heavy, although barley is offering freely to arrive at an early day, provided satisfactory figures can be realized. To cover immediate and urgent needs an advance of $1 per ton was realized the past week on barley purchased a few days prior by a local dealer. This year's crop of California barley is estimated as high as 700,000 tons, but it is doubtful if it aggregates so heavy. Even if it does, there is little of any other grain to ship, and more than enough ocean tonnage, now seeking grain charters, to carry all the barley the State can possibly spare. Freight rates to Europe on barley are 23s 9d asked to Cork for orders, 22s 6d direct, with prospects of lower freights.

Feed, No. 1 to choice spot	$ 92½@	95
Feed, fair to good, to arrive	87½@	90
Brewing, No 1 to choice old	——	@——
Chevalier, No 1 to choice	——	@——
Chevalier, common to fair	——	@——

Oats.

Offerings are principally new Red oats, and for this description the market is showing unsettled condition. For near future delivery, buyers are naming 5@10c. per cental less than realized on spot stock to cover immediate needs. Prices are about the same as a year ago, and last year at this date were the lowest of the season.

White oats, fancy feed	$ ——	@——
White, good to choice	——	@——
White, poor to fair	——	@——
Milling	——	@——
Black oats	1 15	@1 30
Red, fair to choice new	1 15	@1 25

Corn

Most of the business now doing in this cereal is on export account, large quantities going to Central America, the exportations being wholly Eastern product. Shipments from this port since July 1st, 1904, aggregate 10,000 tons, as against 1000 tons for previous year. Values are ruling steady for both domestic and imported.

Large White, good to choice Cal	$1 42½@1	47½
Large Yellow	1 40 @1	45
Small Yellow	1 47½@1	52½
Egyptian White	1 32½@1	37½
Egyptian Brown	1 27½@1	32½
Eastern, sacked	1 35 @1	45

Rye.

Market is lightly stocked and for desirable qualities cannot be termed favorable to buyers. A sale of new was reported at $1.52½, but this figure is above present bids.

Good to choice	$1 40	@1 45

Buckwheat.

None now offering and values for this cereal are for the time being wholly nominal.

Good to choice	$2 25	@2 50

Beans.

Most kinds are in light stock, so far as desirable qualities are concerned, and for prime to choice the market is in the main firm at prevailing values. Reds are in too slim supply to admit of wholesale trading. The recent rather stiff prices asked for Limas checking the demand, holders are offering to make concessions for the purpose of bringing about more activity.

Pea, good to choice, 100 lbs	$3 25	@3 50
Small White, good to choice	3 30	@3 60
Large White	2 50	@2 90
Pinks	3 50	@4 00
Bayos, good to choice	3 65	@4 00
Red Kidneys	4 50	@5 00
Reds	6 00	@6 50
Limas, good to choice	5 50	@5 75
Black-eye Beans	3 00	@3 15

Dried Peas.

Eastern are in moderate supply, mostly in the hands of millers. Present trading in domestic is mainly in cheap stock which is being taken for feed.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	3 00	@3 25
Niles	1 50	@2 00

Hops.

The local market is lacking in activity and values are unsettled. Local dealers quote 20@22c. for 1904 hops, and 16@18c. for this year's hops to arrive, but there is little or no business doing at any figures. To purchase freely, higher prices than above noted would have to be paid, while if much selling pressure was exerted lower figures might have to be accepted. Prices in the North showed a further decline last week, but it is thought the downward trend has been checked; the lowest sale reported was at 18½c., the hops sold at that figure being of ordinary quality. Crop prospects have materially improved in Oregon, and the State is now counted on for 110,000 bales. Contracting is very difficult to carry on, in view of the movement under way to put the entire 1905 crop of that State in the hands of a corporation. A New York report says more favorable crop prospects have caused considerable anxiety on the part of some holders of 1904 growth to unload, and the market is in a demoralized condition, with one sale of prime brewing hops reported at 21c., and if actual buyers should appear it is thought some lower grades could be obtained at 19½@20c. Oregon and Washington report same general conditions regarding growing crop, which is said to be looking fine. All advices from New York State report the crop to be in good shape, and the same can be said regarding the Continental and English crops. On the New York market there has been very little business, but hops could be obtained a trifle cheaper than of late.

Good to choice 1904 crop, nominal	20	@	23

Wool.

There is little wool now in this center or in the State, either in first or second hands, and quotations for the time being are largely nominal. Not until Fall clip begins to put in an appearance will there be opportunity for a revival of activity. A brisk demand at good figures for desirable Fall wools is expected.

SPRING.

Humboldt and Mendocino	30	@—
Northern, free	28	@29
Northern, defective	23	@26
Middle County, free	27	@—
Middle County, defective	23	@25
San Joaquin and Southern, free	26	@—
San Joaquin and Southern, defective	20	@24
Oregon, good to choice	27	@30
Nevada	22	@29

Hay and Straw.

The general condition of the hay market remains much as previously noted. Old hay is still in liberal supply and is receiving the bulk of attention at quotably unchanged values. New hay is showing increased receipt, much of it being of poor quality, and for this sort the market is extremely weak. Bids on poor new are from $5.50@7.00 per ton, and on medium grades from $7.50@11.50, while for strictly choice new $12.50 has been paid. New Alfalfa of poor to fair quality sold at $6.00@7.50 per ton. Second cutting of Alfalfa of prime quality was held at $10 per ton. Following quotations are for new and old:

NEW HAY.

Wheat, good to choice	$ 8 50	@	12 50
Wheat and Oat	6 50	@	10 50
Tame Oat	6 00	@	9 50
Wild Oat	5 00	@	7 50
Alfalfa	6 00	@	10 00

OLD HAY.

Wheat, good to choice	$12 00	@	14 00
Wheat and Oat	9 00	@	12 00
Tame Oat, fair to choice	7 50	@	11 50
Wild Oat	6 00	@	9 00
Barley	7 00	@	9 50
Clover	6 00	@	9 00
Stock hay	5 00	@	6 50
Compressed	12 00	@	14 00
Straw, ₱ bale	25	@	50

Millstuffs.

Market for Bran and Middlings was quiet, with an easy tone, but stocks were not heavy and were mostly in few hands. Rolled Barley inclined in favor of buyers. Values for Milled Corn ruled steady.

Alfalfa Meal, ₱ ton	$18 00	@	20 00
Bran, ₱ ton	21 00	@	22 00
Middlings	24 50	@	27 50
Shorts, Oregon	21 50	@	23 00
Barley, Rolled	22 00	@	23 00
Cornmeal	30 00	@	30 50
Cracked Corn	30 00	@	31 00
Oilcake Meal	33 50	@	35 00

Seeds.

There are no heavy offerings of any of the kinds quoted herewith, neither is the demand active, this being ordinarily a quiet time in the seed trade. Yellow Mustard is being firmly held, and of the Trieste variety there is practically none offering, causing quotations for the same to be at present nominal.

Flax	$1 75	@	2 25
Mustard, Yellow	3 25	@	3 75
Mustard, Trieste	4 50	@	5 00
			Per lb.
Alfalfa		—@—	
Canary		6¼@	6½
Rape		2 @	2½
Hemp		3½@	—
Timothy		5 @	5½

Honey.

Market is quiet and presents in the main an easy tone, especially for other than choice to select water white. In a limited way on local account the latter sort is salable to fair advantage. Common amber grades are not readily placed, even at low figures, either for shipment or on local account.

Extracted, White Liquid	5½@—		
Extracted, Light Amber	4 @	4½	
Extracted, Amber	3 @	3½	
Extracted, Dark Amber	2½@—		
White Comb, 1-frames	11 @—		
Amber Comb	8 @	10	

Beeswax.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Not much in store here, with a fair demand, mainly for export, and values ruling steady at quotably unchanged figures.

Live Stock and Meats.

Market is well stocked with Beef, and with demand only moderate, presents an easy tone. Veal is not in heavy receipt and most desirable sizes are selling to fair advantage. Mutton is offering in more than sufficient quantity for current limited requirements and market lacks firmness. Lamb is in good supply and only moderate demand. Receipts of Hogs are just about sufficient to satisfy the demand for fresh pork, and for desirable stock the market is tolerably firm.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5 @	5½	
Beef, 2nd quality	4½@	5	
Beef, 3rd quality	3½@	4½	
Mutton—ewes, 6@7c; wethers	7 @—		
Hogs, hard grain, 130 to 200 lbs	5¾@	5¾	
Hogs, large, hard, over 200 pounds	5¾@	5½	
Hogs, small, fat	5½@	5¾	
Veal, large, ₱ lb	5 @	7	
Veal, small, ₱ lb	7 @	8	
Lamb, yearlings, ₱ lb	8 @—		
Lamb, spring, ₱ lb	8 @	9	

Hides, Skins and Tallow.

There is no lack of demand for sound Hides and Pelts, offerings meeting with prompt sale at full current rates. Tallow is being shipped outward freely; the steamer Newport, sailing Saturday, took 55,417 pounds for Central America.

Bags and Bagging.

Asking prices for Grain Bags have been advanced. There is no likelihood of there being any shortage, but stocks are largely in few hands, and dealers are taking advantage of the situation, knowing that the demand is most active at harvest time. The PACIFIC RURAL PRESS cautioned farmers months ago of the probability of prices being advanced at this time.

Bean Bags	$ 5¼@—		
Fruit Sacks, cotton	6¼@7½		
Fruit Sacks, jute, as to quality	6 @7½		
Grain Bags, Calcutta, 22x36, spot	7½@7¼		
Grain Bags, Calcutta, buyer June-July	—@—		
Wool Sacks, 4-lb	32 @—		
Wool Sacks, 3¼ lb	30 @—		

Poultry.

Common old and small young chickens were in free receipt and market for offerings of above descriptions lacked firmness. Large and fat Young Roosters without sign of spurs were in good request and brought fairly good prices. Extra large and fat Hens were not neglected. Inquiry for Turkeys was not brisk, although fine young met with a firm market, being in light receipt. Market for Ducks and Geese was slow and unfavorable to sellers. Few Pigeons were needed to satisfy the demand; young were most sought after.

Turkeys, choice Young, ₱ lb	$ 24	@	26
Turkeys, live gobblers, ₱ lb	19	@	21
Turkeys, live hens ₱ lb	18	@	20
Hens, California, ₱ dozen	4 00	@	4 50
Hens, large	5 00	@	5 50
Roosters, old	4 00	@	4 50
Roosters, young (full-grown)	6 00	@	7 00
Fryers	3 50	@	4 50
Broilers, large	2 50	@	3 00
Broilers, small to medium	1 75	@	2 25
Ducks, old, ₱ dozen	4 00	@	4 50
Ducks, young, ₱ dozen	3 50	@	4 50
Geese, ₱ pair	1 50	@	1 75
Goslings, ₱ pair	1 50	@	1 75
Pigeons, old, ₱ dozen	1 25	@	1 50
Pigeons, young	1 50	@	1 75

Butter.

More creamery butter is arriving than required for immediate use and market is weak. Considerable of the surplus is coming forward in cubes and going into cold storage. Receipts of dairy butter are showing decrease. The lower grades of butter are in lightest supply and are selling temporarily to relatively better advantage than choice stock.

Creamery, extras, ₱ lb	19 @—		
Creamery, firsts	18½@—		
Creamery, seconds	18 @—		
Dairy, select	18 @18½		
Dairy, firsts	17½@18		
Dairy, seconds	17 @—		
Mixed Store	15 @17		

Cheese.

Market is fairly supplied with domestic flats, and only for strictly choice mild-flavored new can it be said to show firmness. Some cheese is arriving entirely too fresh, being soft and watery. Young Americas continue in light receipt. Eastern markets are showing more firmness.

California, fancy flat, new	10 @—		
California, good to choice	9½@—		
California, fair to good	9 @	9½	
California, "Young Americas"	10 @12		
Eastern, new	12½@13½		

Eggs.

Offerings were ahead of the demand, and for the general run of eggs now arriving, both domestic and Eastern, the market inclined in favor of the buyer. None are now wanted for storage, the quality not being of high average, as is invariably the case at this time of year. A few favorite brands showing superiority as to size and freshness are commanding an advance on quotations.

California, select, large, white and fresh	20	@	21
California, select, irregular color & size	18	@	19
California, good to choice store	16	@	18
Eastern firsts	17½@		18
Eastern seconds	15	@	16

Potatoes.

Stocks of potatoes of choice to select quality were not heavy, and for this sort there was a fairly active demand at prices much the same as were current the previous week. Supplies of common qualities were liberal. Very ordinary were more difficult to place at lowest quotations than were strictly choice at top figures.

Cal. Early Rose, ₱ cental	75	@	90
Cal. Burbanks, ₱ cental	75	@	1 25
Chile Garnet, ₱ cental	75	@	1 00
White Potatoes, ₱ cental	60	@	1 00

Vegetables.

Onion market was moderately firm for best Yellow, but weak and slow for Red; some Yellow Danvers are being forwarded to Australia. Not much Asparagus now arriving, and especially is choice to fancy in light receipt. Tomatoes were on market from Mississippi and were held at $1.40 per crate. Green peas of select quality were in decreased receipt. Peppers brought good prices.

Asparagus, No. 1 to choice, ₱ lb	5 @	6½	
Asparagus, No. 2, ₱ lb	3½@	4	
Beans, Lima, ₱ lb	— @	—	
Beans, String, ₱ lb	2 @	4	
Beans, Wax, ₱ lb	2 @	4	
Cabbage, choice garden, ₱ 100 lbs	50 @	—	
Corn, Green, ₱ crate	1 25	@	1 50
Egg Plant, ₱ lb	5 @	8	
Garlic, ₱ lb	3 @	5	
Mushrooms, ₱ lb	— @	—	
Onions, New Yellow Danvers, ₱ ctl	1 00	@	1 25
Onions, New Red, ₱ ctl	80	@	1 00
Peas, Green, ₱ sack	1 00	@	1 50

Peppers, Bell, ℔ lb	—	@	—
Peppers, Green, ℔ lb	10	@	15
Rhubarb, ℔ box	50	@	75
Summer Squash, per large box	30	@	60
Tomatoes, ℔ box or crate	75	@	1 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Apricots in free boxes were in liberal receipt, and for other than most select the market was weak. Large Apricots, wholly free from blemish, were not in heavy supply, and commanded as a rule stiffer figures than were warranted as regular quotations. Apricots in bulk did not arrive freely, the bids of $10@15 per ton by canners not proving attractive to growers. Many are drying rather than accept these figures. Canners refuse to take white or speckled Apricots, despite the low prices they name. A few Bartlett Pears arrived and $2 per regular box was asked for No. 1, while culls were offered down to $1 per box. Stiff prices are being paid in the interior for Bartletts by shippers, canners and packers, up to $75 per ton being reported, and a large portion of the crop already contracted for. A few Gravenstein Apples arrived and in a limited way choice brought $1.50 per 40-pound box. Peaches were in good supply, but offerings included few which were desirable for shipment, and for this sort comparatively good prices were realized. Plums were plentiful, and for the general run the market was more favorable to buyers than previous week. Figs were in increased supply and lower. Seedless Grapes went at concessions, being mostly too sour to be sought after. Tendency on Cantaloupes and Watermelons was to lower figures, with more offering than could be readily placed, the weather most of the week not being particularly favorable. Berries were in large receipt and prices for most kinds averaged lower, canners securing large quantities at inside prices.

Apples, choice to select, ℔ 50-lb bx	1 25	@	1 50
Apples, good to choice, ℔ 50-lb. box	1 00	@	1 25
Apples, fair to good, ℔ 40-lb box	50	@	1 00
Apricots, in bulk, ℔ ton	10 00	@	20 00
Apricots, ℔ box	30	@	65
Blackberries, ℔ chest	3 00	@	4 00
Cantaloupes, pony crate	1 75	@	2 25
Cantaloupes, ℔ standard crate	2 75	@	3 25
Crabapples, ℔ large box	75	@	1 25
Currants, ℔ chest	5 00	@	7 00
Figs, ℔ box	25	@	75
Figs, ℔ crate	50	@	1 00
Gooseberries, English, ℔ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ℔ crate	1 00	@	1 25
Loganberries, ℔ chest	2 50	@	3 50
Peaches, ℔ large box	75	@	1 25
Peaches, ℔ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	1 00	@	2 00
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 25
Plums, large, ℔ crate	40	@	65
Plums, ordinary, ℔ box	30	@	50
Plums, Simoni, ℔ crate	65	@	75
Prunes, Tragedy, ℔ crate	40	@	65
Raspberries, ℔ chest	3 50	@	6 00
Strawberries, Longworth, ℔ chest	3 00	@	6 00
Strawberries, large var., ℔ chest	2 50	@	5 00
Watermelons, ℔ lb	2	@	2½
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The spot market is lightly stocked with most kinds. Prunes are more in evidence than any other description and supplies of this variety are being rapidly cleaned up. Further heavy purchases have been lately made on German account and at full current figures, the market presenting a firm tone. New crop Prunes are mainly held on the 3c. basis for Santa Claras. New Apricots are being shipped Eastward from interior producing sections and values are ruling steady. The Pear market has a strong tone, and contracts are being made at stiff prices; one packer is said to have secured the entire crop of Lake county. Peaches are expected to bring fully as good values as last season. Apples are in light spot stock and are meeting with a firm market. The steamer City of Puebla, sailing Saturday, carried for British Columbia and Northwest Territory 87,895 lbs. dried fruit, exclusive of Raisins, and including 44,875 lbs. Prunes, 36,125 lbs. Apricots, 3,125 lbs. Pears, 2,875 lbs. Figs, 625 lbs. Plums, 250 lbs. Nectarines.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6	@	7
Apples, extra choice to fancy, 50-lb boxes	7½	@	8½
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	5½	@	6½
Apricots, Royal, fancy	7	@	—
Figs, 10-lb box, 1-lb cartons	55	@	60
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	—	@	4½
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

Spot stocks are light and include few of high grade. There is a fair movement for this time of year. Small shipments were made this week to various points by sea and rail. The steamer City of Puebla took 5,400 lbs. for British Columbia. Values are without quotable change.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3	@	—c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4½c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			5½c
Choice, 16-oz. Seeded			4½c
Fancy, 12-oz. Seeded			4¾c
Choice, 12-oz. Seeded			3¾c

Citrus Fruits.

Market is nearly bare of Navel Oranges and they are hardly quotable. Late Valencias are in fair supply and are being firmly held at the advanced quotations. Lemon market is showing improved condition, stocks being lighter and the demand better; especially is the market for choice to select qualities inclining in favor of the seller. Prices for Limes are unchanged, but market is firm at prevailing rates.

Oranges, Navels, choice to fancy, ℔ bx	2 75	@	3 00
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	—	@	—
Oranges, Valencias, ℔ box	2 25	@	3 50
Oranges, Mandarins, small	1 50	@	1 75
Lemons, California, select, ℔ box	2 75	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	1 50	@	2 50
Limes, Mexican, ℔ box	4 00	@	4 50

Nuts.

There is only a light jobbing trade in spot stocks, which are of quite moderate volume, and no changes to record in quotations. Orders are being booked for new crop Almonds, prices to be fixed Sept. 1st. The Walnut crop promises to be good in a few sections, but taking the State as a whole, the yield of prime to choice will be comparatively light.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

There is little doing in the way of transfers from first hands. For some dry wines of 1904, offered on the market by a grower this week, 20c per gallon was asked for red and 22½c for white, but these figures are above the views of wholesale buyers, the market not being quotable over 14@17c per gallon, San Francisco, for fair to choice quality. There is some common offering down to 12c. Sweet wines of last vintage are obtainable at 22½c per gallon in bulk at Fresno, but there is choice stock which is held at a marked advance on this figure. The steamer City of Sydney, sailing the past week, carried 108,649 gallons wine, including 95,637 gallons for New York. Receipts of wine at San Francisco for the week were 183,650 gallons, and for previous week were 317,350 gallons.

Produce Receipts.

Receipts and exports of leading cereals and other California products for the past week and for the season to date, as compared with the corresponding time the previous year, are as follows:

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sks	81,791	4,553,822	5,458,949
Wheat, ctls	14,186	2,789,170	2,483,637
Barley, ctls	42,282	3,529,138	5,474,504
Oats, ctls	18,851	841,960	865,837
Corn, ctls	14,148	328,186	182,293
Rye, ctls	895	55,985	60,794
Beans, sks	4,589	652,573	728 6 4
Potatoes, sks	22,273	1,300,612	1,339,613
Onions, sks	3,796	154,815	167,248
Hay, tons	2,670	176,796	173,719
Wool, bales	1,083	80,551	72,038
Hops, bales	9	39,802	31,407

EXPORTS BY SEA.

FOR THE WEEK.		Since July 1, 1904.	Same time last year.
Flour, ¼ sk	43,596	2,983,908	3,455,328
Wheat, ctls	592	808,160	1,064,527
Barley, ctls	11,319	1,913,968	4,213,911
Oats, ctls	672	81,484	25,066
Corn, ctls	12,612	189,034	20,011
Beans, sks	1,304	54,829	41,480
Hay, bales	2,813	241,017	231,827
Wool, lbs		884,219	3,047,075
Hops, lbs	1,320	403,080	593,907
Honey, cases	6	3,083	5,554
Potatoes, pkgs	2,744	117,617	113,437

THE new works of the Jubilee Incubator Co., Oakland, will be at Sunnyvale, Santa Clara county. The company owns three acres, to be utilized as a factory site, and expects to occupy its new quarters Aug. 1st. The poultry supply department has been added. They manufacture poultry foods and rations, all bearing the Jubilee brand. The company has issued an announcement which will be sent postpaid on request.

FRUIT MARKETING.

A High Word on Prune Prices.

TO THE EDITOR:—Since the columns of your paper are open to the rich, the poor, the packer and the grower alike, I beg the privilege, as formerly being a grower, packer and shipper of prunes, to make a statement that will help alike the packers and growers who have not had the opportunity to gather the information they should have concerning the present condition of the prune crops of the world.

Not knowing that I am not growing or packing prunes this year, commission men of New York have telegraphed me fancy prices for carloads of 1905 crop and advised me to buy at once and fill their orders. Others advised me what the packers would pay if forced to by the shortage of 1905 prune crop, hence I am in a position to advise from the inside. Furthermore, I had the pleasure on the 25th of this month of a 26-mile drive, all the time in the very center of the Santa Clara prune belt—8 miles west and south of San Jose, around Campbells and near Saratoga. With the exception of two or three orchards that had on as much as 30% crop, all the others that I observed, and I saw thousands of acres, would not average 10% of a crop. The majority probably will not be picked. This, with the light crop in the southern district, where I formerly operated, and a very short crop in Oregon, and probably shorter, owing to being water-spoilt before it is sacked, and the assured one-half crop, as the following figures will show, should guarantee the grower of what few prunes are in California, which I believe will not be a 25% crop, a 3 or 3½-cent sack basis.

It is reported, and the figures are official until harvesting shall prove otherwise: Oregon with one-third of a crop; Bosnia and Servia, which produce 75% of all the prunes raised in Europe, with one-half crop. France produces 25% of all the prunes raised in Europe, with a full crop last year and probably a full crop this year.

It is further estimated by experienced exporters to Europe that if Germany should demand from the United States 25% of the prunes she uses, which is the amount she has been accustomed to import from us, not one pound would be left for American consumption.

The same parties estimate Germany will have to, and is willing to, take our prunes on a 3-cent basis, and that our California grower can easily expect to get 2¾-cent sack basis.

From an outsider's standpoint I predict a 3-cent basis, and growers will be wise if they can look into the future and hold their prunes until the 3½-cent basis is reached. All kinds of fruit will be worth money, else pears would not bring $60 per ton. Buyers would not contract hundreds of acres of apricots to be dried at 6 to 6¾ cents per pound dried.

This is a banner year for packers, because they can easily sell at a high figure all that they buy, and growers can sell all they will raise at a fancy price.

San Francisco. DR. G. W. LEEK.

Nurserymen's Meeting.

The Pacific Coast Association of Nurserymen will meet at Portland, Or., July 5th and 6th. Quite a number of Eastern nurserymen are expected to be in attendance, and those from this coast are looking forward to this as a trip of recreation and pleasure, anticipating the opportunity of cultivating acquaintance and to confer together about the long and the short of this season's tree crop. Any one engaged in the nursery, seed, floral or supply lines for nurserymen are eligible to membership. J. B. Pilkington of Portland is president and C. A. Tonneson of Tacoma is secretary of the Association.

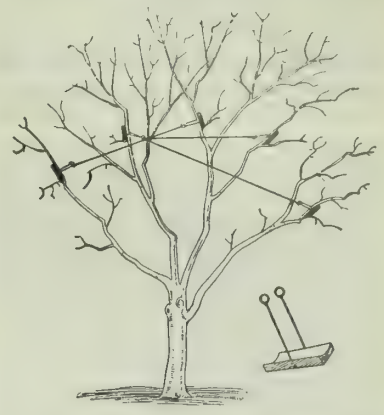
Wolcott, Vt., July 15, 1901.

Dr. S. A. Tuttle, Dear Sir.—I have doctored horses for the last 25 years, and I think your Elixir the best liniment I have ever used, and I would recommend it to any one.

C. M. GUYER.

USE

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PATENTS

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330 Market St., San Francisco, Cal.
AND
918 F St., Washington, D. C.

THE VINEYARD.

Rehabilitation of French Vineyards.

From United States Consul GEORGE H. JACKSON, La Rochelle, France.

To the French vineyardist wine represents the greatest material good he knows or ever has known. The vineyard is the result of the labor and incessant care of his ancestors. The grandfather and the father toiled in sweat and suffering to improve it, and he who inherits it is to bequeath it as a precious legacy to his children, who already are beginning to have a knowledge of the business. Wine for him is not a curse, but a blessing. He understands its use, and deplores its abuse. He knows of no detail in the life of the vine which he has not followed. Its diseases and the remedies which cure them are familiar. The effects of the weather in springtime are anticipated for the vintage. From daylight to dark, through the long days, he labors in the white glare until the vintage song announces that the earth, watered by the sweat of his brow, has again yielded its fruits.

In the "good old times," fifty years ago, the brandy merchant shipped entire cargoes to the United States. In those days his vines covered the hillsides and valleys from Angouleme to the sea. In 1872 began the invasion of the phylloxera, and in 1877 desolation reigned from one end to the other of the Cognac region. The lifeless vine stumps protruded from the earth, reminders of fortunes lost and hopes abandoned. It appears that some enterprising grower had brought from the United States a few vines in order to try them in Cognac soil. It was in the immediate vicinity of Cognac that the devastation began. The summer of 1875, being very dry, was particularly favorable for the development of the plague. The vines in the low-lying country were less affected, and in rare instances where the roots were under water in winter little injury was done. Vast sums of money were expended in various experiments, which were without practical utility until attempts were made to graft the French vines on American roots. Once having learned that such vines resisted the phylloxera successfully, the experiments were pursued zealously and logically.

Finding that no American vine known to the French grower would live in the shallow, chalky soil of the champagne region, Mr. P. Viala was sent to the United States to find such a vine. After long and studious research he found in Texas soil of the same chemical composition as that of the grande champagne, in which thrived the Balandieri. This discovery was of stupendous importance to the brandy industry, as theretofore not only had it been impossible to find vines which would grow in Cognac soils, but the champagne districts produced the finest brandies. Without them, for blending with the more ordinary growths, the liquor produced from the fruit of the other American vines lacked finesse.

This was but one of the discoveries among many made in the United States which benefited this region. The other American vines and hybrids of greatest utility were: Berlandieri, Riparia-Berlandieri, Rupestris-Berlandieri, Riparia-Monticola, and Rupestris-Monticola.

In order that the situation might be studied more intelligently and the experiments carried out with greater exactitude, a station of viticulture was established at Cognac, for which special buildings were constructed in 1893. From the first appearance of the phylloxera until means were found to replant the ruined vineyards, the entire question was studied by the best experts in France. Many other diseases, among them black rot and mildew, had to be fought meanwhile, as the new plants growing under new conditions seemed particularly susceptible to external influences. Chlorosis was also one of the most persistent maladies.

It may be said, then, that the reconstituted vineyards of Cognac are planted with American vines upon which have been grafted French vines. This has been done at an expense of $60,000,000. The area under vines at present is much less than it was before the phylloxera came, but the yield for a given area is very much greater. With the replanting of the vineyards new methods were adopted. The vines were set out in straight rows, carefully trained to wires or posts, and great care is taken with the trimming. Formerly the vines were planted more or less irregularly and very close together. The advantages of the new system are in the great facility with which the ground can be worked and the increased yield of grapes. This latter is due directly to the American root. According to figures given me by a vineyardist competent to judge, the old vineyards for a given area yielded from sixteen to twenty-two barrels, while the same area planted with American vines yields from thirty-eight to forty-six barrels. According to the present increase in the number of vines and acres planted, it will not be many years before the price of alcohol from wine will be as low as that of alcohol made from beets.

La Rochelle, France, May 3, 1905.

Cannot Do Without It.

Belleville, Ill., 614 Monroe St., Nov. 11, 1904.
Dr. B. J. Kendall Co., Enosburg Falls, Vt.
Gentlemen:—Please send me a copy of your "Treatise on the Horse and His Diseases." I have your Kendall's Spavin Cure in the house for family use all the time and cannot do without it.
Yours respectfully, MRS. GOEPFERT.

DIVIDEND NOTICE

San Francisco Savings Union
532 California St. Cor. Webb.

For the half year ending with the 30th of June, 1905, a dividend has been declared at the rate per annum of three and six-tenths (3 6-10) per cent on term deposits, and three and fifteen one-hundredths (3 15-100) per cent on ordinary deposits, free of taxes, payable on and after Saturday, July 1, 1905.
LOVELL WHITE, Cashier.

DIVIDEND NOTICE

The German Savings and Loan Society,
526 CALIFORNIA ST.

For the half year ending June 30, 1905, a dividend has been declared at the rate of three and one-half (3½) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1905.
GEORGE TOURNY, Secretary.

DIVIDEND NOTICE

California Safe Deposit and Trust Company,
Cor. California and Montgomery Sts.

For the six months ending June 30, 1905, dividends have been declared on the deposits in the savings department of this company, as follows: On term deposits at the rate of 3 6-10 per cent per annum, and on ordinary deposits at the rate of 3¼ per cent per annum, free of taxes, and payable on and after Saturday, July 1, 1905.
J. DALZELL BROWN, Manager.

Dividend Notice.

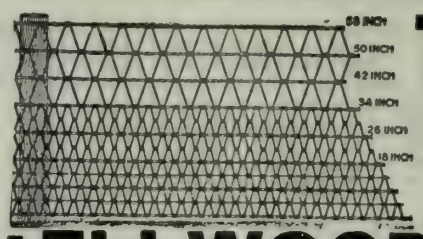
SECURITY SAVINGS BANK,
316 MONTGOMERY ST.

For the half year ending June 30, 1905, dividends upon all deposits at the rate of three and one-quarter (3¼) per cent per annum, free of taxes, will be payable on and after July 1, 1905.
FRED W. RAY, Secretary.

Dividend Notice

SAVINGS AND LOAN SOCIETY,
101 MONTGOMERY ST. COR. OF SUTTER.

Has declared a dividend for the term ending June 30, 1905, at the rate of three and one-half (3½) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1905.
EDWIN BONNELL, Asst. Cashier.

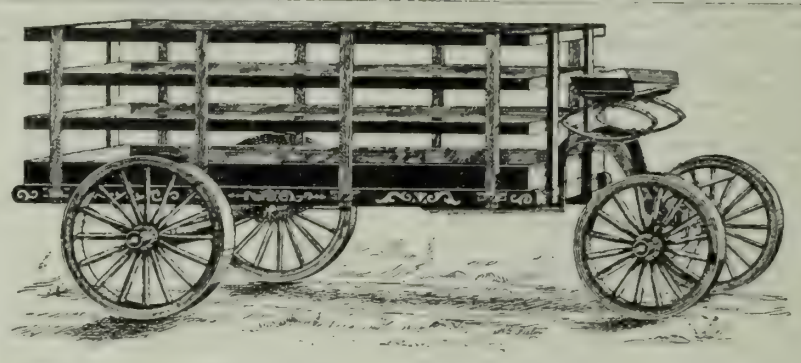


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That is just what every rod of our fence says to every animal that approaches it.

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THIS truck is the result of years of endeavor to produce a wagon that has great carrying capacity, ample strength without superfluous weight, low enough to the ground to minimize the labor of loading.

CAN turn short among trees, and can be used on the roads as well as on the farm.

THE "JERSEY" is a pronounced success, not only for the transportation of fruit, but as a general purpose dray in villages and small cities. Capacity 2000 to 3000 pounds.

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MANUFACTURERS OF
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From 3-in. to 10-ft. in diameter for
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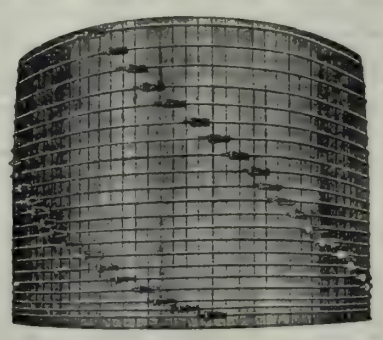


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than riveted iron or steel pipe. Requires no expert to lay and can be easily taken up and relaid, as it is absolutely indestructible. All pipe sold under an absolute guarantee. We contract for complete irrigation systems. Illustrated catalogue sent on application.

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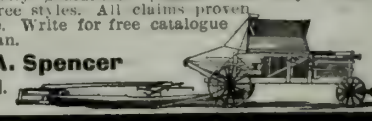


Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channels or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

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JUST AS WE SAY OR WE'LL GIVE IT AWAY

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REGISTERED BERKSHIRES, sired by Rio Bonito Prince, the champion boar at the State Fair for the last three years. Charles Wesley Reed, Mills Building, San Francisco.

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BERKSHIRES—Prize Winners—bred from prize winners. Boars all ages. T. Waite, Perkins, Cal.

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FIFTY HEAD OF GOOD AVERAGE MILK COWS, MIXED STOCK, MOSTLY HOLSTEIN.

Also Stock Cattle for sale. Address
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White Leghorns, Black Minorcas,
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EACH VARIETY THE BEST OF ITS KIND.

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Do you want one that will improve your herd—one with strong official backing on both sides? The sire is half the herd. It is important that you use a good one. We have a choice lot of them. Let us send you one. Remember, our herd contains a larger number of cows with official records than any other herd in the world. **Pierce Land & Stock Co.,** Room 884, James Flood Bldg., San Francisco, Cal. Ranch, Rough and Ready Island, near Stockton.

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Dorinda Darling,
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The herd is rich in the blood of others in that test.

Also, have a herd of Gernseys selected with great care.

Prize winning Berkshires.

Prepared to furnish foundation herds of cattle and hogs. Prices reasonable. No catalogue.

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50 UNBROKE MULES,

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We make them. They are dovetailed. Made of sundried soft white pine; clear stock (no knots). Never swell, shrink nor check. The corners are locked and are strongest made.

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Manufactured at Petaluma, Cal., the chicken center of the world.

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We hatch and prepare little chicks for shipment to all points within sixty hours travel of Petaluma. July, August and September are the best months to hatch chicks; they will commence to lay in the winter months. Place your orders at once for this season's hatch. We also supply White Leghorn eggs for hatching. Prices on application.

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Emery's Poultry Foods are sold by all dealers and commission men because they are the BEST.

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Red Polled Cattle.

Color Deep Red. Both Sexes for Sale.

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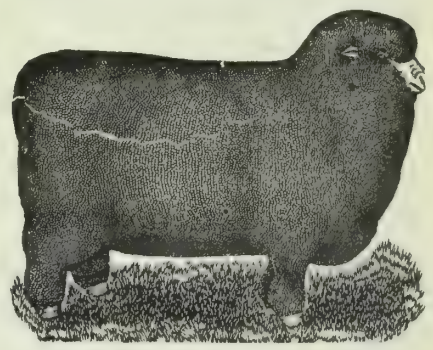
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Importer and Breeder of Shropshire Sheep.

They were all imported from England, or bred direct from imported stock.



We have also bred American Merinos—Hornless Sheep—for 30 years. They are a large sheep, without wrinkles. Rams will produce 20 to 25 pounds of long, white wool yearly. Sheep of both sexes for sale.



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WITH
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DISCOVERED BY PASTEUR IN 1881

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EXECUTIVE COMMITTEE.

Thos. Jacob.....Visalia
J. L. Beecher.....Stockton
G. W. Whitaker.....Bennett Valley

List of Granges and Officers.

ALHAMBRA, 230.—M., H. C. Raap; L., James Kelly; Sec., Mrs. L. T. Raap. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Martinez.

AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 180.—M., L. C Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail. 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D. Magnon.

Tulare Grange Meeting.

Tulare Grange held an interesting special session on Saturday, the 24th. The special committee appointed to interview the Board of Supervisors in relation to granting franchises to use the streams and water power of Tulare county, for the development of electric power, reported.

The committee had attended a meeting of the Board of Supervisors at which the granting of a franchise to develop electricity on Tule river was under consideration. The committe on behalf of Tulare Grange protested against the granting of any franchise to any company, to use the waters of the streams of Tulare county for generating electric power unless that power is to be used exclusively in this county. The supervisors had an ordinance drawn up by the district attorney of the county, with the provision in it that the power could be used only in Tulare county. To this limitation the company applying for the franchise, by their paid attorneys, earnestly protested, and the Grange committee as earnestly advocated its retention in the franchise, or in any franchise granted to any company for the purpose intended. The committee reasoned that all the advantages possessed by our county should be retained and used for the upbuilding of the county; that Tulare county has, in her streams, great advantages and opportunities for the development of electric power, and in her varied industries will need all that power; that the company asking for the Tule river franchise has its predominating interests 250 miles from Tulare, and is liable at any time, or under some pretext, to use the power it gets in this county, where its interests are slight, for the benefit of the locality where its interests center; that the objection of the company seeking the franchise to the proviso that the power and benefits to be dervied from it should be for the benefit of the county granting it, is, on the face of it, evidence they intend to use it elsewhere. Under these circumstances for the supervisors to grant the franchise, as asked for by the company, would be worse than a blunder. It would be a betrayal of the best interest of Tulare county. The Grange, knowing the supervisors have the best interests of the county at heart, does not believe the smooth talk of the agents and paid attorneys of the company seeking the franchise, and will influence them to grant a franchise which does not, on all points, safeguard the county's best interests.

Tulare county is now making good progress in the development of her resources; she needs all the advantages she can control. It will be, at most, but a few months until Tulare citizens will, for Tulare's sole benefit, ask for the franchise now sought for by a company whose interests are not ours.

The subject will be considered by the Board of Supervisors on the 7th inst., at which time it is very much to be desired that every municipality in the county, the County Board of Trade and every local Board of Trade should have a representative present.

Subjects for Grange discussion were selected and ordered printed, after which the Grange adjourned. J. T.

Tulare Grange.

TO THE EDITOR:—A magnificent reception was given to our worthy brother and sister, John Tuohy and wife, who a few days previously arrived home after several months sojourn in foreign lands. The hall was neatly decorated for the occasion; the gathering of members was great; a bountiful feast was greatly enjoyed. From 2 to 4 P. M. the meeting was open to the public when Brother and Sister Tuohy gave an interesting account of their trip. E. C. S.

Dinuba Grange.

TO THE EDITOR:—This baby Grange held a most interesting meeting; business of importance was transacted. Brothers T. Jacob and E. C. Shoemaker were present from Tulare Grange. Brother Shoemaker instructed a class in the several degrees. Brother and Sister Dore were present. All seemed to enjoy the presence of the visitors. The charter list will be held open until the close of the first meeting in July. The Grange will meet at 10 A. M. and all will bring baskets well filled. E. C. S.

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THE DAIRY.

Notes on the Butter Package Marking Law.

The law enacted by the last session of the State Legislature, requiring that the weight of butter contained in "rolls," "squares" or other packages containing more than one-half pound and less than six pounds, be marked "legibly and durably" on the package, has been in force since May 20. In enforcing its provisions the State Dairy Bureau has met with several features involved in the matter that it deems advisable to place before producers of butter and warrants the issuing of this circular.

It finds that while there was formerly considerable contention among both producers and dealers to the effect that it is not an easy matter, if not impossible, to secure and maintain a desired weight of a "square" or "roll" of butter, which the law makes practically necessary at all times, and that allowances should be made for mechanical variations in molding or cutting the "squares" or "rolls" and for shrinkage that takes place during the period from the time the butter leaves the producer's hands until it reaches the consumer, that there is little ground for this contention.

MECHANICAL VARIATIONS.—The Dairy Bureau wishes to call attention to the fact that the observations of its inspectors warrant the statement that there seems to be little excuse for mechanical variations in weight, as they are the result of carelessness and crude workmanship. The Bureau's inspectors have found in numerous instances in the San Francisco market, where care in the matter of weights was exercised on the part of shippers, that out of as many as twenty boxes in a shipment the weight has not varied over 1½ pound among the boxes weighing over 120 pounds, and in some instances the variations do not exceed one pound to the box, and often a dozen boxes weighed alike to a pound. If the total weight of sixty to eighty "squares" does not vary to exceed one or two pounds, it can be seen that the individual squares must be extremely accurate in weight. What one shipper can do, others can do, if they exercise the same care.

DIMENSIONS OF "SQUARES."—Another feature that has been noticed is that there is a closer relation between the dimensions or volume of butter in "squares" and the weight than is usually supposed, or, at least, this has been the case under weather conditions up to the present time. It is very commonly accepted that the condition of the butter, especially as effected by the temperature of the weather, has a marked effect on a given volume of butter. While this may be true, the Bureau has found that for a given weight for a "square" of butter, the volume, or cubic measure, is almost invariably the same. In cases where it finds, for instance, a 2-pound "square" weighing that amount with extreme accuracy, the dimensions are invariably 3x3x6½ inches, and vice versa when it finds a "square" shorter than 6½ inches, with the usual 3x3 base, the weight is lacking of two pounds. In case of 1½-pound "squares" 3x3x5$\frac{13}{16}$ inches gives the exact weight with remarkable uniformity.

While there may be individual differences among producers, and while temperature may play a part, which the producers must take into consideration, the observations of the inspectors of the Bureau lead to the conclusion that if butter producers will adjust their molding apparatus so as to give "squares" of the proper dimensions, when once these dimensions are ascertained, they will have little trouble with weights.

AN EASY MATTER WITH SMALL CUTTERS.—In case of the many producers who use the smaller cutting outfits with a capacity usually of thirty-six "squares" the matter of accuracy is extremely simple. These may be assembled ready to receive the butter and are then weighed. The butter maker can then, by weighing, fill them with exactly the quantity of butter he wishes in his "squares." If he has a 36-square cutter, and wants 2-pound squares, he should see that he gets 72 pounds in the cutter box before cutting, and if he is putting out 1½-pound squares, he wants fifty-four pounds in the cutter, etc., so that accurate weights become simply a matter of weighing the butter accurately in the cutter box before cutting. In case of the large machine cutters this is not possible, as they can not be readily weighed. In cases where these machines are used the butter maker must be guided by the proper measurements of his squares.

A common mistake that butter makers make in using the large molds or cutters that results in much inaccuracy is in dressing or leveling off the top of the butter in the mold. For this purpose a wooden "straight-edge" is used, by means of which the top is scraped off level with the top of the sideboards of the cutter. If this implement is weak, it is likely to bend so as to give a curved surface to the top of the butter in the mold, and as a result some of the squares may be as much as one-eighth of an inch shorter than others cut out of the same mold. A safer method is to fill the mold above the top of the sides and then cut the extra butter down to a level with the sides by means of a wire bow.

THE MATTER OF SHRINKAGE.—The Dairy Bureau can state that thus far it has found little trouble from shrinkage. If butter is received "full weight" by the wholesale dealer, the shrinkage, even when the butter is held in trade for a week or more, is not sufficient to be noticeable under the usual care it receives.

In general it can be stated at this time that all that seems to be involved in meeting the requirements of the law is for the producer to give attention to securing accurate weights.

WM. H. SAYLOR, Secretary.
San Francisco, June 15.

Good for Ringbone, Curb and Lame Back.

Waubay, So. Dakota, Feb. 15, 1904.
The Lawrence-Williams Co., Cleveland, O.:
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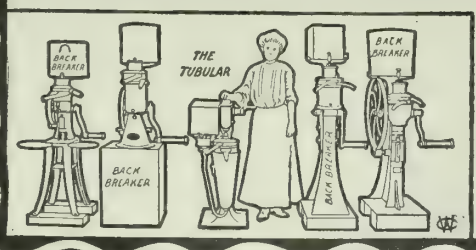


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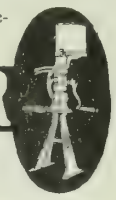


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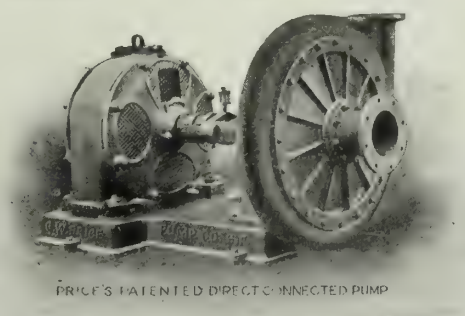
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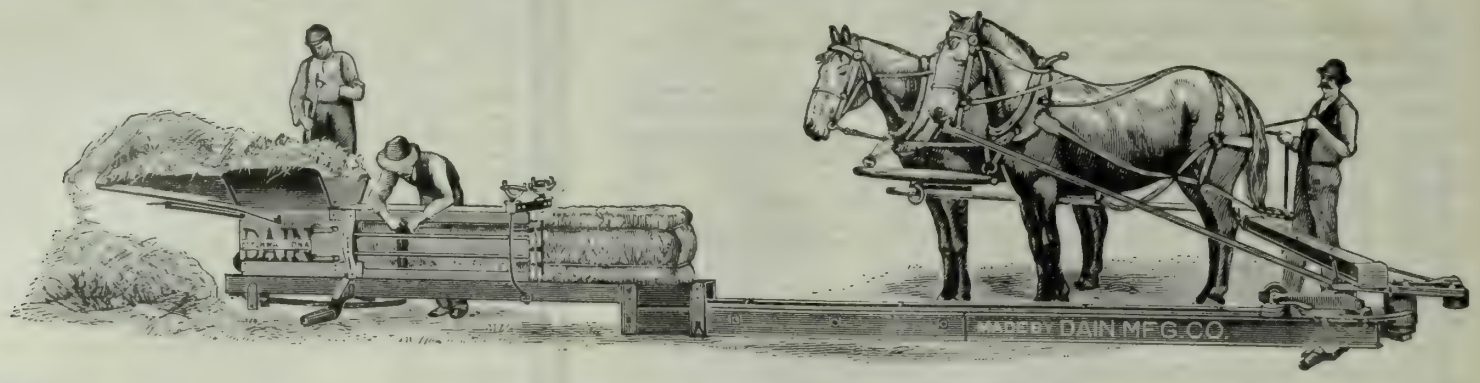


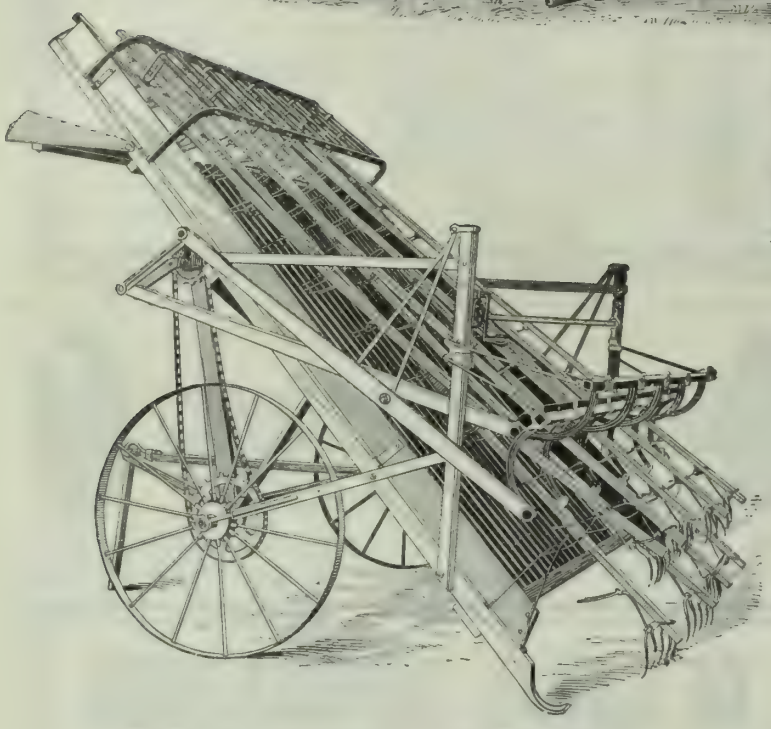
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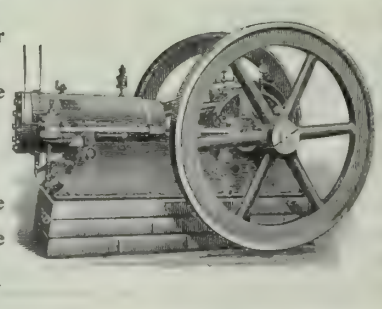
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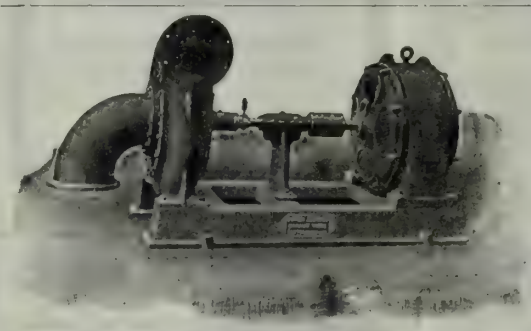
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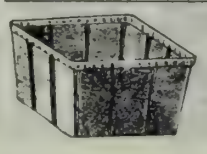
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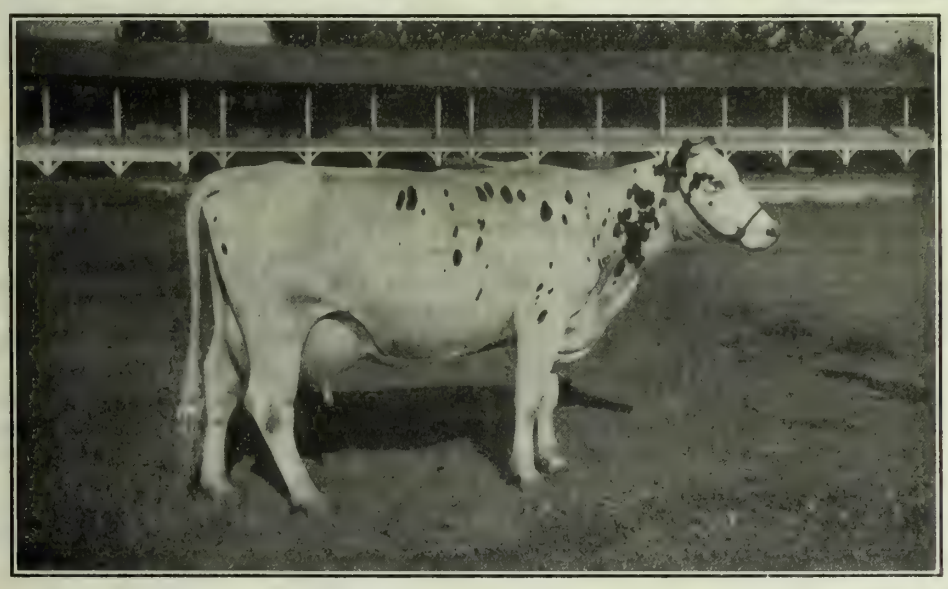
Vol. LXX. No. 2. SAN FRANCISCO, SATURDAY, JULY 8, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

The Riverside Holsteins.

We promised last week to proceed, as opportunity offered, with facts about the reclaimed lands along the San Joaquin and Sacramento rivers. Hardly a more telling contribution along that line can be made than the sight of the beautiful cattle of the Riverside Premier herd of the Pierce Land & Stock Co. which this page conveys. These are residents upon the rich pasturage lands which good reclamation secures, and one reason they are so fine is suggested by the luxuriant vegetation which the largest picture shows—for the relation of California climate and feed growth to the success of the breeder's art is very close. The owners of the herd to which these animals belong fully recognize this fact, for, in their elegant catalogue just issued, they render this patriotic tribute to their chosen situation: "The home of the herd is at Riverside, on Rough and Ready Island, situated upon the winding waters of the San Joaquin, about 5 miles from Stockton, Cal. This country, reclaimed from the river and splendidly dyked, has been well called the 'California Netherlands,' and is, perhaps, the most fertile section of the State. Here grasses grow luxuriantly the year round, and the splendid soil, combined with the equable climate, furnish ideal conditions for the raising of the best dairy animals. The owners have erected splendid buildings, the great feature being ideal sanitary conditions, making Riverside a thoroughly modern, sanitary dairy."



The Unbeaten Bull, Jetze (Imported), Winner of Five Medals.



De Kol of Valley Mead.

These claims are true, as we know from personal observation and the fact that the Pierce Brothers could turn from commercial pursuits to advanced agriculture and win by the application of the latest discoveries and the liberal policies favored by professional dairy investigators is one of the most emphatic proofs of the practical value of the agricultural science which our leading institutions are demonstrating and contending for. It also proves that agriculture is a business which thrives by the same policies which enlightened and progressive business men employ in their commercial undertakings. There is little need to speak about the cattle which the pictures show—they speak for themselves to skilled observers. Their records are, however, important. First is the imported bull Jetze, of whom Prof. Carlyle pronounced it impossible to offer criticism when he was judging at the California State Fair last year. Next is the cow De Kol of Valley Mead, with a record of 85.6 pounds of milk in a day and 96.4 pounds of butter in thirty days, and in March of the present year made 4.3 pounds of butter in a day, taking the Register Cup for making the most butter in one day by official test.

The group of cows in the large picture shows the Riverside Holsteins at home with their rich pasturage and limitless flat land which favors cattle of such size and capacity, and reminds one of their ancestral home in Holland, but has the glories of a winterless climate added.

The upbuilding of the Riverside herd is phenomenal in results, and it is interesting to note that the herd contains over ninety cows and heifers which have qualified in their official tests for the Advanced Registry, this being a larger number than that of any other herd in the world, and these tests have never been equaled by any other herd.



Pasture Scene on Riverside Ranch, Rough and Ready Island, Near Stockton, Cal.

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SAN FRANCISCO, JULY 8, 1905.

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FORESTRY.—California Sugar Pine; Uncle Sam Will Sell Wood, 31.

The Week.

The national holiday brought the heat for which so much desire was expressed, and probably marked the turn of the year into more normal houses. This year's June had no colder since records began in California, and July opens with heat which, in some places, has also made a record. The complaints of many fungi on plants are now probably over for this year, and ripening of fruits will proceed rapidly. Fruit shipping overland keeps up its lead this year, and the outlook for a great season's total is still good. The hot spell comes in fortunately in one way, and that is it will give Mr. Powell of the U. S. Department of Agriculture a good chance to demonstrate what his preliminary cooling experiment at Newcastle will amount to. He hopes to reduce the percentage of loss in fruit shipments and to retard development in transit in order that the fruit may be permitted to become nearer ripe before shipment. The temperature of the fruit will be reduced to 40° F. before being loaded in the cars for shipment. This will be done experimentally in two refrigerator cars side-tracked for the purpose by means of ice and salt. The fruit will then be placed in cars previously cooled to this temperature and shipped direct to New York, carefully observed on arrival and reported upon in comparison with other fruit shipped hot from the same place on the same day. At the present time California peaches intended for Eastern markets are necessarily picked rather green. If the process of ripening can be arrested by perfect refrigeration Eastern consumers will be able to secure California peaches that have been allowed to attain quality on the tree.

The markets are dulled by the heat and the holidays, of which many people have taken several and charged them to the Fourth of July account. Wheat has met very little trade, and our market reporter assures us that the chickens are hungrier than the shippers. Barley has done better, advancing in value and selling briskly—the visible supply being small. Feed barley is still above export and futures are unchanged. Oats have taken an opposite course, owing to larger offerings, except that black oats being scarce are unchanged. Egyptian corn is used up until the new crop comes in. Rye is still held up as supplies are short. Beans are in the same condition. Meats are neglected this week, even hogs being a little weaker. Millstuffs are quiet. Hay is improving, owing to lessening of supplies of old and receipts of new being moderate. The best butter is in demand and lower grades softer—both in fact and value—and this breach is likely to extend if weather conditions continue. Cheese is rather weak, and eggs are dull, owing to large receipts and cessation of storage operations. Poultry has had a holiday demand, but prices have not changed as a rule. Potatoes have dropped under larger receipts and complaints of poor stock, but onions have done fairly even with full supplies. Los Angeles tomatoes have sold even with Mississippi stock, though of better quality. Valencias now hold the orange trade and are in fair supply and value. Lemons are more active through the hot weather as usual, and limes are firm. Some deciduous fruits are hurt by the holiday interruption. On the other hand, berries have been in better demand. Melons also have done well. Dried fruits are unchanged and little is doing this week. The prune situation is strong and sellers firm. Nuts are waiting. Honey is doing little. Hops are hardly as confident this week, though figures are the same. Wool is still from country sales, having gone to 29½c as an outside figure for northern coast wool.

Many will be saddened to learn of the death of General Will S. Green of Colusa, the indefatigable promotor of the Sacramento valley, in which he has lived and worked since the beginning of American things in California. We say worked, because with General Green to believe in a thing was to work for it, and though well along in years he could distance a whole valley full of youngsters in any enterprise which commanded his confidence and sympathy. His death was perhaps hastened by this very fact, for he did the whole welcoming trip which a number of Californians undertook as escort for the Congressional party of irrigation visitors, from Yuma to Reno and beyond, going through all the requirements of travel with a delight and enthusiasm second to none, and adding much to the success and significance of the trip. It was, probably, the most satisfactory ten days of his life, and, in fact, a fitting close of it, for he was able to look over into the promised land of an irrigated Sacramento valley for which he has labored so long and effectively.

We give up much of our Query space this week with as good grace as possible in order that our pear growers may have immediate advantage of a very timely and up-to-date sketch of the pear blight situation by Prof. R. E. Smith, who has this matter in hand this summer, both in the field and laboratory, and under whose supervision a vast amount of orchard treatment is being carried on. The account which we print this week should be carefully studied and kept within reach afterwards by all pear growers, and, as this effort is one which becomes more promising as all engage in it, we advise all our readers to call attention of their neighbors, who might not otherwise see it, to the pointed suggestions which we print upon the opposite page of this issue.

Mr. E. K. Carnes, inspector of the State Commission of Horticulture, makes a very favorable report of his observation of the codlin moth destroyer at Novato. He says: "In the old De Long apple orchard, I was pleased to find the parasite flying about in large number. Found them on my hands, caught them in my net, and had the pleasure of having the foreman tell me that this is the first season in many years that the orchard was nearly so free from worms. They claim that there is over 50% improvement over past years. The fruit looked well, and there are very few wormy apples." We hope it will remain so, and we hope also that the parasite has done it, but one must remember that this has been a very cold spring, and the codlin moth has hardly got fully warmed up to its work this year, especially so near the coast as Novato. It will do to watch farther.

One of the humors of the listing of automobiles under the last Legislature's law is reported by the Sacramento Union. A San Luis Obispo man sent on his license fee with this note: "I have been running this traction engine for five years, and I never supposed I had to have a tag and badge until I visited San Luis Obispo last week. It would be a good idea to send a man down here to visit all the big ranches, as there are lots of engines without any tags." And the Union scribe fitly adds that the license collector "is in daily anticipation of applications from chauffeurs of harvesting machines and steam rollers." He will be in luck if he is not called upon to fasten a tag to the tail of a mule.

QUERIES AND REPLIES.

Wants to Know About California Horticulture.

To the Editor:—I expect to visit California next winter with a view of locating, and that I may select a location with as little expense in time and money as possible, I would like to have a list of bulletins and pamphlets gotten out by your Experiment Station concerning the culture of fruits, nuts and vegetation, and the sections of country best adapted to each.—Intending Settler, Tennessee.

Our California Experiment Station does not publish general descriptions of the country, nor general accounts of fruit culture, but devotes its attention to the investigation of rather obscure problems which cannot be determined by the experience of growers. General descriptive matter concerning the fruit regions of California can be had by application to the California Promotion Committee, 25 New Montgomery street, San Francisco, and the Chamber of Commerce, Los Angeles, Cal. These two organizations are constantly publishing information along the lines you mention. The fullest and most carefully prepared descriptions of California fruits and vegetables, how grown, and description of the districts in which each fruit is grown, are to be found in our books on "California Fruits and How to Grow Them," and "California Vegetables." Descriptions of California fruit growing and other agricultural industries are given from week to week in the columns of the Pacific Rural Press.

Oranges Dropping.

To the Editor:—I am sending you under separate cover a small box of oranges which are falling very badly. Please make an examination of the sample and, if possible, give me the cause of their falling, and, if there is any remedy to prevent it, you will confer a great favor on the orange growers of this section by informing us of the same.—Grower, Glenn county.

There does not seem to be any indications of disease which would account for the falling of the small oranges. There is always a certain amount of dropping of this character, apparently due to physiological conditions in the plant, and occasionally a much larger dropping than this, which must be attributed to unfavorable growing conditions at and following the blooming period. There are many obscure things of this sort which at present can not be more definitely accounted for. Not only oranges, but deciduous fruits, are sometimes affected in the same way, and presumably the causes are similar. Any weather condition which interferes with the proper functioning of the blossom and the proper development of the fruit at setting time will occasion the dropping which you notice.

Lemon Roots, Mildew, Erinose, Orange Buds.

To the Editor:—Is a Lisbon lemon all right on its own roots? I have propagated a few by layering. If they are not good, should like to know before wasting any more time on them. What is the seasonal range of mildew on Muscat vines? Does irrigation cause or make it worse? What is the trouble with leaves enclosed? Can I do anything to make buds on orange plants start? The buds have been in six weeks and look well, but many of them do not start. Does your book, "California Fruits," deal with vines and their diseases?—Subscriber, Visalia.

So far as we know, the Lisbon lemon is as good on its own roots as other lemons are; but in our commercial lemon growing the use of the lemon root has been practically abandoned, because the orange root is hardier, more moderate in growth and more desirable. If you want a lemon root, your method is all right, except that it is slow and expensive, and you can get a better-shaped root from a seed. The mildew season depends upon the locality. In some places it lasts all summer and has to be continually fought with sulphur; in other places it hardly appears at all. It is striking you harder than usual this year because of the favorable weather, and it ought to quit soon. The vine leaves you send have erinose; the cause is a mite burrowing into the leaf tissue. Sulphur is the best present remedy. Kerosene emulsion is the dose for the stump next spring before the growth starts. To start a dormant bud, girdle the stock above it, or break down part of it or cut away part of it—cutting down closer after the growth starts out well. "California Fruits" treats of grape vines as of other fruits—quite in detail.

Summer Handling of Pear Blight.

By PROF. RALPH E. SMITH, of the University of California Experiment Station.

One of the most important subjects at present to the California deciduous fruit industry is that of pear blight. The great prevalence of the disease in our best Bartlett pear sections and its only too well-known disastrous virulence, considered along with the present extremely high value of pears and the prospect of good prices in future seasons, makes a situation of the greatest importance to growers, canners, shippers and all who handle the pear crop. No fruit promises better for the California grower, if it can be successfully produced, than the Bartlett pear; none is so seriously threatened by a destructive pest.

The situation is by no means, as some freely proclaim, a hopeless one. California has had other pests of a nature seemingly as serious as this, whose suppression is now but an incident in orchard practice. The Bartlett pear is not yet doomed to extermination, nor need growers feel that all is lost when the blight appears in their orchards—serious as its effects are known to be. The writer agrees with some of our most level-headed pear growers that, for one who will give his trees proper attention, there never was a more promising time for planting pears than at present. That energetic trio—pear blight, pear scab and codlin moth—may yet prove a source of profit rather than of loss to the progressive grower, by driving out of competition the uncared-for orchard and its indifferent owner.

WINTER CUTTING MOST EFFECTIVE.—The few incomplete demonstrations, which were made when Prof. M. B. Waite was here last spring, convinced most of the growers, who followed up the results of the work, that our chief hope for pear blight control at present lies in the complete removal of all affected branches in the winter time. Although some may assert that this has already been done and failed in districts where pear blight has been most prevalent, it is a positive fact that in almost every orchard in the State, which has had pear blight, affected limbs could be found in abundance during the winter. Summer cutting has been general and vigorously (though not always properly) carried on, but in the winter time blight has ceased to attract attention and much "hold-over" left in the trees, each case to produce a multitude of new infections next spring. Pear growers are now recognizing this fact and next winter will see much more intelligent work in pear blight than has ever been done in the State before. With the University Experiment Station, the United States Department of Agriculture, the State Commissioner of Horticulture and various County Boards of Horticulture all co-operating in carrying on the work, an extensive demonstration can be made of pear blight control under best known methods.

PRESENT CONSIDERATIONS.—Meantime the summer handling of pear orchards affected by the disease is of greatest importance to many growers. In most cases there is a small to fair crop of very valuable pears now upon the trees and more or less blight is present. The crop is too valuable to lose by unnecessary blight cutting, but the trees are far too valuable for future years to endanger by leaving the disease unchecked for the sake of a few pears of this year's small crop. There are also some other features, which have come out in our work thus far, which every pear grower should understand.

The general nature of the disease is now commonly known. It is caused by a definite germ or bacterium which flourishes in the bark of the tree, causing its death. Early in spring the limbs which contain live blight exude a sweet, sticky sap, which is attractive to flies, bees, wasps, etc., and contains the blight germs. These insects feed on the sap, get it on their feet, legs and bodies, and then unconsciously spread the blight to the opening blossoms by visiting and crawling about in them. The germs multiply in the blossom and spread rapidly down into the twigs and branches. Drops of gummy juice then appear on the newly affected parts and the blight is spread again from them in the same manner as before. Thus one case of winter holdover may account for a thousand blighted twigs by the middle of May.

The blight started in this typical manner in all our affected regions this year. In almost every case the old blighted limb could be located, either in the same tree or in one close by, where the first blighted blossoms appeared. Besides this fact, which goes to prove the supreme importance of winter cutting, two very important features were noted.

HOLD-OVER IN APPLE TREES.—In a number of cases pear orchards thought to be free from blight were badly infected from near-by apple trees, mostly old, neglected trees, to which no attention had been given. A large amount of blight had wintered over in these trees, unsuspected by the owners, and spread to the pears when they bloomed. In most cases these were apples of one variety, the Alexander, which is particularly susceptible to blight. This is not the only variety, however, which may carry over blight. Cut down every apple tree near the pear orchard, or go over them very thoroughly in winter for blighted limbs.

In the case of a few old trees they should be cut down without fail if blight is in the orchard or vicinity. Growers overlooking this source of infection may expect blight as long as such trees remain.

EARLY-BLOOMING PEARS.—The Bartlett is one of our latest-blooming pears. A common source of infection has been the presence of a few early-blooming trees of other varieties, which attract all the insects and all the blight in the vicinity and spread it to the Bartletts when they bloom. The worst of these are Winter Seckel and Madeline. Cut down every early-blooming tree near the Bartletts the first year that blight appears.

This assumes that the Bartlett orchard is more valuable than the other trees. One Madeline or Winter Seckel near a Bartlett orchard where there is blight has in a number of cases caused great loss. By all means cut them down.

FRUIT SPURS ON LARGE LIMBS.—Many large main limbs are becoming infected through blossoms growing on short spurs upon them. While by many the best fruit is thought to be produced in such places, there is no question that from the blight standpoint all fruit spurs should be kept off from the main limbs to prevent the disease spreading directly into them. Keep the main limbs clean of all short growth as high up as a man can reach.

This is a most practical suggestion, as every man of experience with blight well knows.

SPROUT INFECTION. — In badly blighted orchards there has been a large amount of infection in fresh green suckers and twigs having no connection with the blossoms. This has not occurred except in trees blighted badly at first in the blossoms and shows mostly in May and June, after the main bloom has gone by. We have been studying this feature quite extensively and find that such infections are caused by various biting or sucking insects, which travel from blighted twigs to the tender green shoots. There is no evidence that the disease spreads at all through the air. The worst feature of this kind of infection is the blighting of suckers coming up from the bottom of the tree and the disease then spreading down into the bark of the trunk and main roots. Many fine trees have been completely ruined in this way during the present summer. Often the suckers are cut off without noticing the blight, and the owner afterward wonders how the disease got down into the lower part of the trunk. Suckers on the main limbs also blight and cause serious damage. Keep all suckers away from the butt of the tree, leaving the whole tree perfectly clean up to the first small laterals.

These laterals should be started out as low down as possible in this style of pruning, according to Mr. Waite's suggestions. This will be gone into more fully next fall.

LATE BLOOM.—The late pear blosoms which straggle along through the summer, and particularly the abundant fall bloom, which occurs some years, are a prolific source of blight infection. Keep all late bloom picked off after the crop sets. This may sound impractical, but has been done without any particular difficulty in a number of large orchards. One man can look after thousands of trees and may save very great loss.

CULTURE.—It is generally recognized that the best cultivated and irrigated orchards—in other words, those in which the growth is most rapid—are worst affected by blight, because the bark tissues are tender and succulent and the germs spread more rapidly. We, therefore, recommend as a measure of blight control: From now on, in blighted orchards, cease all cultivation and irrigation to the greatest possible extent.

This sounds radical, but is a practical, well-advised suggestion. Judgment must, of course, be used in the matter in order not to seriously injure the trees. The orchard may be plowed and cultivated once in the spring and then left uncultivated; it may be simply disked without plowing, or hogs or chickens may be turned in and the weeds and grass kept down without any cultivation whatever. According to the nature of the soil the growth of the trees should be checked as much as possible without injuring them.

SUMMER BLIGHT CUTTING.—That the blighted limbs should be cut out during the summer, in order to check the disease when it is serious, is the conclusion of almost all who have followed up the matter closely. Yet it is quite true that in much of the summer blight cutting done in the State more harm than good is accomplished, and the disease is actually spread more than its progress is checked The fact that the blight spreads down the limbs fast enough to seriously injure or ruin a tree in one summer can be seen in almost any case where nothing is done during the summer, and is itself sufficient argument for summer cutting. The principal causes of failure or poor results of this work have been two—poor methods and poor help.

The proper method of summer cutting consists simply in going through the orchard and cutting off all the blighted twigs and branches at a point below where the disease has extended. The tools should be frequently wiped with an antiseptic solution to guard

(Continued on page 22.)

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 3, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director

Sacramento Valley.

Clear weather prevailed during the week and the temperature was below normal until near the close. Grain harvesting and thrashing are progressing rapidly. Wheat, oats and barley are yielding much less than estimated and the quality of the grain is inferior. Hay baling continues; the crop is larger than usual and the quality excellent. Hops are improving and the present warm weather will cause more rapid growth; prospects are good for a full crop in the Wheatland district. Grasshoppers have nearly all disappeared, but are causing some damage in the northern part of the valley. Grapes are advancing rapidly and give promise of very large crops. Deciduous fruits are yielding better than expected in some sections; picking, shipping and drying are in progress. Citrus fruits and olives are looking well.

Coast and Bay Sections.

Warm and clear weather prevailed in the interior most of the week, with cooler weather and frequent fogs in the coast districts. Grain harvesting and thrashing progressed rapidly. Wheat is a fair crop in nearly all sections; barley is also yielding a good crop, but oats are light. The hay crop is harvested and baling is in progress; the crop is large and the quality superior. Hops are making good growth and will yield a full crop in some sections. Sugar beets are yielding more than the average in Sonoma county and are doing well in other places. Feed is still plentiful and stock are in good condition. Prunes are reported light in most places, but will be of good size and quality. Apples in the vicinity of Hollister give indications of a large yield. Pears, peaches, apricots and plums are ripening and yielding well. Grapes are in excellent condition. Walnuts at Cloverdale will be very light.

San Joaquin Valley.

The weather continued clear and warm during the past week and conditions were very favorable for grain harvest and ripening and drying fruit. Grain harvest is progressing rapidly and the crop will be light. In some sections oats and barley will be good crops, while in others they will not be more than half an average crop. Several large fields of grain in the northern portion of the valley were destroyed by fire. The apricot crop is about all gathered and was good in all sections. Peaches, prunes and nectarines are maturing rapidly. The melon crop is good and will be ready for market in a few days. Grapes are making good progress and most varieties will make large crops. The third crop of alfalfa is being harvested in some sections and the crop is good. Feed is plentiful and stock are in excellent condition.

Southern California.

Clear, warm days and cloudy or foggy nights prevailed during the week, with warmer weather at the close. Grain harvesting and threshing are progressing. Wheat is light in some sections and much better than average in others. Barley is yielding an excellent crop, but oats are light in most places. The third crop of hay has been harvested and baling is in progress; the yield and quality are very good. Sugar beets are yielding an excellent crop and beans give promise of a large yield. Irrigation water will be plentiful through the season. Shipments of lemons and late oranges are being made from Riverside. Melons are in market in limited quantities. Deciduous fruits and grapes are in good condition, but walnuts are backward.

EUREKA SUMMARY.—Grain in some places is considerably damaged by aphis, but the crop is generally above average. Hay harvest is progressing; the crop is unusually heavy. High winds caused apples to drop; the yield will be a little below average.

LOS ANGELES SUMMARY.—Hay stacking and baling are in progress on a crop ranging from light to extra good. Oats good to heavy; some rust. Oranges dropping somewhat. Walnuts backward, but promising.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 5, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.00	.02	.01	60	50
Red Bluff	.00	.00	.00	T	106	60
Sacramento	.00	.00	.00	T	104	54
San Francisco	.00	.00	T	T	95	50
Fresno	.00	.00	.00	T	106	58
Independence	.00	.00	.00	.01	100	62
San Luis Obispo	.00	.00	.00	T	100	44
Los Angeles	.00	.00	.00	T	86	54
San Diego	.00	.00	.00	T	74	60
Yuma	.00	00	.00	.04	110	72

THE DAIRY.

California Dairy Industry.

From the report of the California State Dairy Bureau, just published, California is by no means in the rear rank of States as a butter producer. Her growth in this line is well shown in the following table, which gives the butter production in pounds for each of the past eight years, as compiled by this bureau:

Year.	Creamery Butter.	Dairy Butter.	Total.
1897	10,866,646	17,811,793	28,678,439
1898	10,410,497	13,280,549	23,691,028
1899	12,725,814	12,143,270	24,868 084
1900	16,486,695	12,296,164	28,783.859
1901	19,017,512	10,683,690	29,701.202
1902	21,593,021	9,935,741	31,528,762
1903	24,591,271	10,195.018	34,786,289
1904	26,433,060	9,203,909	35 636,969

The remarkable but steady growth of the State's butter production, as shown by the figures above, is one of the conspicuous features of California's industrial life. It goes to show that her citizens are awakening to the fact, which they have heretofore been slow to recognize, that almost every county in the State has areas adapted to dairy farming not excelled by any part of the world, while in the counties located in the Sacramento and San Joaquin valleys only the application of irrigation water is required to make almost the entire area one alfalfa meadow for eight or ten months of the year. Not only are Californians learning to appreciate the possibilities of the dairy business, but during the past few years these possibilities have attracted many settlers from other States, and what were formerly large grain growing areas are now numerous small dairy farms.

The increase in butter production is confined to counties located in either the San Joaquin or the Sacramento valley. In fact, these counties have had to make up for a heavy decline in butter production in the counties along the coast south of San Francisco bay, since this part of the State suffered from a severe drought during the winter and opening of the present year. Had it not been for this drought the gain of this last year over the previous year would have been much larger. In Fresno, Kings, Merced, Sacramento, San Joaquin, Stanislaus, Sutter and Tulare counties the production exceeded that of last year by from 15% to 30%, and a similar rate of increase was made last year over the preceding year. This means that these counties, in at least some of which the butter consumed prior to ten years ago was purchased from outside markets, doubles in butter production about every five years.

A feature which is retarding a still more rapid development of dairying is the difficulty of securing competent labor to work on dairies. This drawback, however, has had one desirable effect, in that it checks a tendency on the part of our citizens to conduct dairy enterprises on an extensive scale with large numbers of cows; while on the other hand, by maintaining prices which might not be possible if such extensive dairy enterprises were readily practicable, there has been much to encourage the dairyman operating on a small scale and doing the work himself assisted by his family. It is this that has brought about a very desirable tendency, in many parts of the State where dairying is becoming conspicuous, of converting large holdings of land into numerous small farms, whose owners are invariably very prosperous.

Eastern Butter.—In the two years covered by this report a large amount of butter has been shipped into California from the East. Only figures for the year ending June 30, 1904, have been obtainable, and these may possibly not include all that arrived, as they account only for full carload shipments. They show 3,340,000 pounds, or almost 10% of what our State produces. Most of this went into cold storage for use during the season of light production. That this extra amount of butter has not been required here is well shown by the low prices that ruled last winter on cold storage butter, and which are again predicted for this coming winter. The importation of this butter from the East is brought about through the fact that the demand for butter during the surplus season for the purpose of storing has been so strong that the California markets have been maintained at a much higher figure than was the case in the East during the surplus season. The Eastern surplus season coming later than in California, and the price going much below that in California, induced our dealers to buy this Eastern butter, which was added to local storage stock, with the result that an excess of storage butter has been on hand, causing heavy losses to the holders. It is more than likely that this experience will in the future prevent the local markets from going too far above those in the East during the surplus season and therefore make it impossible to bring butter from the East at a profit.

Cheese. — The production of cheese in this State for the past eight years is shown in the following table:

Year.	Pounds.
1897	6,399,625
1898	5,148,372
1899	5,294,938
1900	4,989,960
1901	5,681,366
1902	6,503,441
1903	7,218,639
1904	6,133,898

It is seen from the above figures that there has not been that increase in the production of cheese in the State which is so noticeable in the case of butter. The decline of the last year from that of the preceding one was largely attributable to the long period of drought in some parts of the State in which large amounts of cheese are made. Another factor that is responsible for the lack of progress in the cheese business has been the prices that ruled in the markets. California cheese producers make a class of cheese acceptable only to consumers within the State. After this demand is once satisfied there is no other market that will take any large amount, and in consequence a surplus of local production is very likely to happen. If our cheese industry is ever to assume any proportions, it is apparent that our producers must make a quality of cheese that will meet the demands of the market beyond the State line. There is an excellent field for the exportation of cheese, that could be developed through shipping a superior article.

Butter and Cheese Prices.—The table below shows the average monthly price of the highest grade of cheese, and of extra fancy, creamery butter, in the San Francisco market for each month during the past two years, and the average for the twelve months. The figures are presented because they convey a class of information that is often desired by dealers and others identified with the dairy industry. The figures represent cents and fractions of a cent per pound.

Month.	1903.		1904.	
	Butter.	Cheese.	Butter.	Cheese.
October	28 6	12.7	28.3	13.2
November	31.8	19.2	31 6	12 6
December	31 3	15.5	29.7	13.0
January	30 6	14.8	28 3	12.1
February	34 3	14.3	28.1	10.8
March	26 5	13.1	28.1	9.4
April	22 6	12 4	19 3	9.0
May	22 5	11.1	18.7	8.7
June	24.2	11.8	19.1	8 8
July	25.3	12.5	21 5	9.3
August	26.1	12 8	24.1	9 5
September	29.8	12.9	27.4	9.8
Average for 12 months	27.8	13.5	25.3	10.5

Condensed Milk. — During the past two years three new milk condensing factories have been established in the State. One of these was destroyed by fire immediately after beginning operations. Two that were given in the list in our last report have discontinued business. The output of condensed milk and evaporated cream for each of the last six years is given in the table below, which gives the number of cases of forty-eight cans each:

Year.	Cases.
1899	52,558
1900	66,302
1901	100,140
1902	146,860
1903	126,874
1904	186,905

Casein Manufacture.—Since the last report made by the bureau a new branch of the dairy business has been established in the State. We refer to the production of commercial casein. In the making of butter only the fat in the milk is utilized. In the skim milk and buttermilk is left all the casein, amounting approximately to 4% on the average. This casein, on account of its plastic, insoluble nature and the modifications its physical properties take on in combination with various chemicals, adapts it to a number of uses in the manufacturing arts, chief among which is its use as a sizing in making the higher grades of paper. The demand for casein, both in the Eastern States and for exportation to Europe, has reached California, with the result that a number of creameries in Humboldt county make the preparing of casein a feature. The residue, or whey, of skim milk after the casein is removed still contains the sugar and albuminoids (which in some Eastern factories are removed and converted into commercial products), and is valuable for hog feeding. The amount of casein produced during the year ending October 1, 1903, amounted to 34,440 pounds, and for the year ending October 1, 1904, to 138,280 pounds.

Butter Production Per Cow.—A matter of much inquiry among those identified with the dairy interests, and especially by teachers in agricultural schools, students of dairy affairs, and State and Federal officials, is as to what is the average production of butter per cow in the State. The impression seems to prevail that the average is low compared with the other dairy States. The Dairy Bureau has been eager to secure a large amount of specific data on this question that it might present, but has found it next to impossible to get this information from the dairymen, owing to the fact that few seem to know what the total production of their herds is. The same is true of our efforts to secure some definite information about the breeding of the dairy cows of the State, there being apparently few of our dairymen who know anything about the breeding of their herds, or what constitutes a thoroughbred or a grade animal.

Recently the bureau undertook to secure some data on the average production per cow through the creameries. A number of creameries throughout the State were asked by means of blanks to state the pounds of butter fat delivered in the course of a year by their patrons, and then to secure the number of cows the patron had who contributed to the butter fat delivered to the creamery; but in this it failed, owing to the fact that the creamerymen reported that no regular number of cows were kept by their patrons, and that they were constantly adding to and selling from their herds.

Only a general statement can be risked as to the average production per cow. First, it may be stated that the variation is extremely wide. The bureau has many instances on record where the average yearly production per cow in herds owned by dairymen who make cow keeping a specialty is less than 110 pounds a year. It also has records where the average per cow exceeds 250 or even 300 pounds. Secondly, it might be stated that the average varies largely according to the particular district of the State as governed by the average intelligence of the dairymen and the feed conditions. Thus we find in Humboldt county, where they have an intelligent, painstaking class of dairymen and good feed conditions and long seasons, about 23,000 cows (after allowing for those that contribute the milk and cream used by the population), producing almost 4,000,000 pounds of butter, or an approximate average of 175 pounds per cow. This average is maintained fairly well, if not exceeded, throughout the Sacramento and San Joaquin valleys and south of the Tehachapi mountains, where feed is abundant for a long period of the year. When we come to the hill regions along the coast we find a different condition. The variation among individual herds is very marked. In the noted dairy counties of Marin and Sonoma we find herds with a reported average of less than 120 pounds and others exceeding 250, the difference being accounted for in the breeding and selection of the cows and their care and feeding. In case of the records of twenty-four dairymen in one district, the average per cow is shown to be 131 pounds, the lowest herd averaging 92 pounds per cow, and the highest, a graded Jersey herd, 263 pounds. In the southern coast counties the average production is still lower, herds that exceed an average per cow of 150 pounds of butter being the exception, and from that amount the average ranges down to less than 100 pounds per cow.

The facts we have tried to present above are given to show the great waste resulting from the keeping of poor cows and improper care, and the great need on the part of the State to educate her dairymen in more progressive methods. It is a waste of effort to attempt to conduct a dairy business with cows which have an annual butter capacity of less than 150 pounds. By selection and breeding many dairymen are bringing the average of their herds up to over 200 pounds. To raise the present average through education is the greatest need of the dairy industry in California.

THE FIELD.

Corral Dust—When to Cut Wheat.

To the Editor:—A short time ago there appeared an inquiry from Chico asking whether it was best to keep cows in the stable or in the corral. I consider your answer to the inquirer a correct one, in that there is little waste by the manure being exposed during the dry season of the year.

Now, corral dust, as it is generally called, when accumulated where cows are kept through the summer, is one of the best absorbents that I know of. Bulk for bulk, it will take up a great deal more liquid than even chaffy, short straw will do, and as it is already a good manure in itself it becomes much richer after taking up all the cow's urine that it will absorb. Then, how have it do this? It has been my practice for a great many years to pile up all the light dust I could during the latter part of summer. First, I would have a foot or two in thickness put into all the calf pens and any sheds that were used for cattle of any kind This, by the addition of a little straw, or any waste material that came to hand, would sometimes last half the winter by taking the wet part off the top as became necessary. Then, as I always milk my cows in the stalls, the gutters behind are constantly supplied with the necessary quantity of dust to absorb all liquid, which is in reality more valuable as a manure than the solid excreta. Another thing that it is very useful for is, that when the plank walk behind the cows gets wet and slippery it is a good thing to scatter some of this same corral dust on the wet places to prevent the cows from slipping as they come in or out of their stalls. If shed room is not available for keeping the dust in, it will do very well piled up against the end of the building or a high board fence in as little room as it can be put. When the rain comes a crust of some 3 inches in thickness will be formed, with perhaps a growth of grass, after which the rains will not penetrate any further in. Dust so treated makes the richest farm yard manure that I ever used. Some people think it a lot of trouble, but the man who has taken the trouble to make such manure will

think more of it than if it had cost him nothing. It is the right kind of stuff for keeping up the fertility of the farm.

When Should Wheat Be Cut?—There was another topic discussed in your paper some time ago which I meant to have written a line on, but perhaps I was too busy at the time, or perchance I was not in the writing mood. The question was, At what stage of ripeness should wheat be cut? one, if I remember rightly, contending that it should not be left till ripe enough to be cut with a combined harvester. When I was a boy I knew of one of the good old English farmers who practiced cutting his wheat and oats when the straw was quite "green in the neck," as the saying is. At the same time I knew of millers who were always anxious to get the wheat grown by that same progressive farmer, for that is what he was in all his undertakings. The millers said that his wheat turned out a greater percentage of first-class flour than any other wheat they could buy. I have only grown wheat for sale once in California. That was in Sonoma county. I cut it with a binder when the straw was green in the neck. When the thresher came he said it was the best wheat he had threshed, and when I sent a sack to the mill as a sample the owner of the mill sent me word that it was very good wheat and that he would give me the top price for it.

New Place; Old Principles.—I believe that this is the first letter I have written to you since I came to this county. I hope it may not be the last. I have come to a 320-acre farm of good strong land, said to be about as productive as any in this neighborhood, but I see enough already to convince me that I must do as I have ever done—save and apply the manure to the land. It is a common saying that straws show which way the wind blows; it is the same with many other things. In walking through some second crop alfalfa a few days ago my attention was attracted to a small dark green spot where the alfalfa was fully twice as tall and much thicker on the ground than any that was near it. I went a little out of my way to find out the cause of such extra growth. There was a dead and decayed hare in the middle of the patch. Robt. Ashburner.

Woodland, Yolo county, Cal.

We are very glad to hear from our old friend and contributor again and to know that he has reached so good a place as Yolo county.

THE SWINE YARD.

Swine Feeding Test With Sorghum-seed Meal, Kafir-corn Meal, Soy-bean Meal and Cornmeal.

Questions relative to the feeding value of sorghum seed and Kafir corn are frequently received by the Kansas Experiment Station, and as an aid in answering the inquiries, the following experiment was planned and carried out: Forty-eight pigs were divided into four lots of twelve pigs each. Each lot contained six Duroc Jersey pigs, five Poland China pigs and one Tamworth. Their average weight at the beginning of the experiment was 138½ pounds, and average age six months. The rations were as follows:

Lot No. 1 received ground sorghum seed four-fifths and soy-bean meal one-fifth.

Lot No. 2 received Kafir-corn meal four-fifths and soy-bean meal one-fifth.

Lot No. 3 received cornmeal four-fifths and soy-bean meal one-fifth.

Lot No. 4 received cornmeal alone.

It will be noticed that lots Nos. 1, 2 and 3 were fed rations in which the carbonaceous cereal grains were balanced by soy beans, which are very rich in protein. Lot No. 4 was fed a purely carbonaceous ration, as a check, to show the value and need of a balanced ration. Pigs of this age are making considerable growth as well as fattening, and it would be expected that the balanced ration would give better results. Reference to the table shows such to be the case.

NUMBER OF LOT.	Number of pigs	Average weight at beginning	Number of days fed.	Average weight at end	Total gain of lot	Average daily gain per head
1	12	139.16	28	167 91	345	1.02
2	12	140.00	28	178.33	460	1 37
3	12	136 66	28	172.91	435	1.29
4	12	138.33	28	168.33	360	1 07

From the above table appears the value of Kafir-corn meal as a feed for pigs, this lot making better daily gains and also producing 100 pounds of gain from a smaller amount of grain than any of the other lots. A comparison of lots Nos. 3 and 4 shows the value of the addition of soy beans to the ration, 100 pounds of gain being produced for 17% less grain than with cornmeal alone. The sorghum seed produced rather poor results in comparison with the Kafir-corn meal and cornmeal in lots Nos. 2 and 3. It took 33% more grain to produce 100 pounds of gain with this lot than with lot No. 2, and 26% more than with lot No. 3. However, 1.02 pounds daily for a period of twenty-eight days is a fair gain and in localities where there is a surplus of sorghum seed, for which there is no market, it can undoubtedly be fed to pigs at a profit.

Soy beans are not grown to any extent in California. The feeding of alfalfa with Kafir corn would balance the ration in about the same way.—Editor.

THE STOCK YARD.

Extra Vitality Claimed for Holstein Milk.

From an address by President A. A. Cortelyou, at the last meeting of the Holstein-Friesian Association of America.

The most important work of a public nature which, in my opinion, will operate to advance the interests of owners of Holstein cattle, is the promulgation of a better knowledge among consumers of milk of the dietetic value of the grade of milk produced by our cows. It is a well known fact that the offspring of those breeds of cattle whose milk is rich in butter fat are reared with the greatest difficulty. Such offspring appear to be deficient in vitality and especially subject to stomach and bowel troubles which are fatal in many cases; and it is now being more generally recognized by physicians and consumers that milk rich in butter fat is an improper food for young children and is deleterious in its effects and produces generally the same effects in human beings as in animals.

These results are now said by scientists to be due to several causes and primarily to the excess of fat in the milk, and, in the case of children particularly, are probably also due to the extraordinary character of the fat globules, which in these small breeds of cattle are extraordinarily large, and entirely unlike those in Holstein milk, which nearly corresponds with human milk in its solid contents.

It is also becoming widely recognized that the milk from the large and vigorous races of cattle, especially Holstein, possesses another quality, characterized by Prof. Carlyle as vitality, and that this quality is communicated to the consumer, whether man or beast. Thus we have large, strong, vigorous calves when reared upon Holstein milk, and puny, weak ones from those reared upon milk rich in fat; and human beings, fed upon milk possessing the characteristics of Holstein milk, are likewise healthy, strong and vigorous.

The investigations of the Storrs Connecticut Agricultural Experiment Station, as published in Bulletin No. 31, wholly confirm these assertions, and I commend this bulletin to you as worthy of most careful study.

Prof. Carlyle was right in affirming that "there is such a thing as vitality in milk and that it is of equal, if not greater, importance than its chemical composition, especially for the milk supply of cities, and there can be no question but that the vitality of milk is closely associated with the vitality of the animal producing it."

I will quote generally from the Storrs Bulletin: "In the country at large the product of one cow in five is sold to be consumed as whole milk. It will not be denied that milk varies in its food values and in its composition. The experiments were conducted for the purpose of showing the relative food value of solids from milk poor and rich in fat content when fed to young growing animals.

"For the first forty days the pair of pigs receiving skim milk gained 62 pounds; the pair receiving milk poor in fat 54.8 pounds, and the pair receiving milk rich in fat 42.2 pounds. For the next ten days the gain was for each pair 22 pounds, 20½ pounds and 3½ pounds respectively. From fifty to sixty days the results were 20 pounds gain, 21 pounds gain and 6 pounds loss respectively. After forty days of feeding the pair receiving the milk rich in fat were affected with loss of appetite and diarrhœa and finally did not consume enough to sustain life."

And I wish here to interpolate that there can be little, if any, doubt that the same effects are produced on young children by the feeding of milk of certain breeds of cows, that is clamored for by a class of health officers in our cities and urged upon the parents, especially those who are able to afford a high-priced product. Not unfrequently the milk of such cows is also dangerous from other causes.

To proceed with the quotation. "The pair receiving milk poor in fat content, as well as those receiving skim milk, maintained good appetites until the close of the trial.

"The failure of a pound of milk solids in rich milk to make equal or better gains than a pound of solids in the poor milk was not due apparently to lack of nitrogenous material, but rather to the excess of fat or to the character of the fat.

"Larger fat globules were found in the richer milk, and this fact, in connection with the digestive disturbances, would seem to indicate the reason for the larger gains from a pound of solids with the poorer milk.

"Fat globules in human milk are smaller than the fat globules in cows' milk. If it is safe to reason by analogy from the brute to the human, then the whole milk containing a low per cent of fat would seem to be better suited for infant feeding than whole milk high in per cent of fat."

It seems to me that this closing paragraph is one to be taken to heart by every person.

More About Coyotes.

Continuing the story which began last week it may be remarked that in approaching ranch buildings either by day or by night the coyote comes from the leeward side and with great caution. Once satisfied that no danger lurks in the shadows, it becomes exceedingly bold. George A. Coleman, formerly a member of the Biological Survey, wrote from London, Nemaha county, Neb.:

"Depredations by wolves here upon hen roosts and pig pens are of frequent occurrence. I have observed them several times. They come with a dash into the yard, take a chicken by the neck, and are gone before any one can stop them. In the same way they visit the pig pens and take the young pigs away from the mother. In one instance they made away with eight six-weeks-old pigs in one night. At another time two of them attacked a pig which would have weighed seventy-five pounds, and had they not been stopped by dogs would probably have killed it."

Few of the mammals of the farm are exempt from coyote raids. Even house cats, roaming far from home in search of rodents or birds, become victims.

The coyote has been known to kill the young of most farm animals—colts, calves, pigs, lambs and goats. Colts are seldom killed, because the dam can usually protect them. Calves are taken only when the mother cow is feeding at a distance or has gone for water. The coyotes lie watching in the grass until this opportunity comes. Sometimes older animals are killed. Ranchmen in Oklahoma told the writer that in winter yearling cattle in good condition are sometimes killed by coyotes. To accomplish this two or more of them must hunt together and get the victim separated from the herd.

Capt. P. M. Thorne, writing to the Biological Survey from Fort Lyon, Colo., January 4, 1887, says: "Old cattlemen who have lived here nearly all their lives agree in saying that the coyotes kill cattle, even full-grown ones. They say that they have seen them at their work, which is done in packs; they surround an animal and keep up a constant nipping at its legs until it falls from weakness and loss of blood."

In July, 1893, at Farmington, Utah, Vernon Bailey saw two coyotes chasing calves and yearlings about a pasture, evidently trying to separate one from the lot. He notes that in June, 1889, at St. Thomas, Nev., coyotes killed a hog that weighed about 100 pounds.

The Coyote's Relation to the Sheep Industry.—The coyote is especially notorious as an enemy of the sheep industry. In many parts of the West sheep raising has greatly languished because of the depredations of wild animals upon the flocks. While some of the injury is caused by the larger wolves, mountain lions, bears and lynxes, the coyotes are by far the most formidable enemy. They are not only more abundant than the other animals mentioned, but they are present throughout the year, and their depredations are a steady drain upon the resources of the flock owner, comparable in extent to the losses caused by worthless dogs in many parts of the country.

HORTICULTURE.

Irrigating Strawberries in the Northwest.

Mr. C. A. Warner, of Prosser, Wash., whose somewhat advanced views on strawberries we have previously published (See Pacific Rural Press Oct. 29, 1904), describes his fall and winter treatment in a place somewhat colder than California but similar in some other respects:

About a week after the last strawberry picking I take a scythe and mow the tops off. A short blade is best. Stand on the opposite side of the row to be mown, run the point of the scythe in the ground below the edge, then by a direct swing I cut off all runners and half the tops, keeping the point of the scythe down in order to get the lower ones. After cutting down one side of the row, turn and cut the other side, making a clean cut of the tops and runners. Leave a day until dry, then burn the entire field over if possible, which can be done with a slight breeze so the fire passes quickly, otherwise take a horse rake, gather and haul the tops off. Now let the field so remain for three or four weeks, except hauling on manure, put on plenty, no fear of over-doing when the rate is less than forty loads per acre. It is the proper and about the only time of the year when this fertilizer can be applied. Keep the water off. After a month start the cultivator. I find the 5-shovel the best, or if rows have become too matted, a six-inch plow with a rolling cutter. Run the plow on both sides of the rows, throwing furrows back towards

the center and narrowing up the rows as closely as desired. Not over a foot wide is best. Cultivate frequently and deeply, thoroughly mixing the compost with the ground. After a thorough mixing and pulverizing, and cleaning of grass, the field can be irrigated. Make the lateral ditches deep, for the less weeds will grow next season and the deeper the plants will take root, and be in condition to resist drought when maturing fruit. Irrigate every four or five days until the weeds begin to appear, then use a fine tooth cultivator. Cultivate as frequently as required to keep weeds down and the moisture from escaping, running the cultivator a little more shallow each time, and along in October let it be very shallow. Do not crowd the plants too closely, disturbing the roots, but keep off all runners, letting the field go into winter quarters free from weeds and runners. In January or February, when the ground is frozen, there may be a little covering of manure put on between the rows, using but little, and be sure it is free from weed seeds. A light straw covering might serve to keep the plants back a little if advancing too fast, but do not put manure on the plants.—C. A. Warner, Prosser, Wash.

THE APIARY.

California Bee Keeping—Past and Future.

By C. W. Dayton of Los Angeles County, in the American Bee Journal.

Our long season of anxiety is ended. The bees began to make their own living the first of April. We began to feed them on the first day of last July, making it a nine months' dearth of honey. Still, all along through July and August they continued to get a small amount of honey from sumac and wild buckwheat. Some of the most industrious colonies got enough, perhaps, to keep them alive, but the general class of colonies went right down to starvation condition. At the start there were about 210 colonies. Now there are probably 160 left, about 50 having dwindled out from having too old queens or none at all. Some did not rear enough young bees last September, and the old bees continued to fly out of their hives all the fall and winter, of course causing the hives to become depopulated from old age of working bees.

During this time we fed about 3000 pounds of honey, nearly all in the open air. The next apiary north fed $35 worth of sugar to 220 colonies. There are 90 alive now. The next apiary south, of 250 colonies, fed 600 pounds of honey. There are 80 colonies alive now. The mortality among the colonies has been greater than usual for dry years. I do not know whether it is because the bee men are losing courage, or because it is a worse case than usual. One thing, last season the sage utterly failed to bloom—something I never heard of before. It has always yielded somewhat. But the sumac and buckwheat held out exceedingly well. Sumac continued for something like six weeks, while I have known it in good years to dry up and fail in ten days of hot weather. But last season held out cool and favorable. I have known buckthorn to yield honey early in the winter so as to fill the supers pretty well; but this time it almost failed to blossom and gave no honey at all, notwithstanding the abundance of moisture. Three years ago there came 2 inches of rain the second day of November, and in December the bees roared on the buckthorn bloom nearly equal to basswood. Neither did the eucalyptus yield anything in the valleys. In 1898, from eucalyptus, they completely filled their supers in January. Still there has been very mild weather all winter. Sometimes we have frosts and freezes often, and I have known a pretty heavy frost as late as May 5.

While this fine weather has failed to help us out with a yield of bee feed from some source, it has permitted the colonies which have been fed liberally to make the greater strides in the way of brood rearing. Since the middle of December we fed, every pleasant day, all they could carry to their hives. This caused them to rear brood during January and February to their utmost, so that the first of April finds the hives full of bees and all the combs full of brood. Usually the sage is ahead of the bees, but at the present time the bees are waiting for sage, which is just beginning to blossom, and every corolla tube contains a small drop of nectar.

If the price of $10 a colony were offered, it would be no temptation to us to sell bees. They have never failed to yield 200 pounds to the colony in such seasons as the present. We count 200 pounds of honey worth $16, and sometimes it brings $18 for the first quality, according to how it is marketed.

The fifty colonies which have died, I think, might have been saved had they had better attention—that is by feeding them in the hives, specially last August, to make them rear the required amount of young bees, and then to keep them supplied with stores in the early part of the winter. Colonies having old or poor queens do not seem to have energy to carry feed. Yet if they are kept until spring they would build up into good working colonies and could be requeened for the season with queen cells from some of the most forward colonies.

The fifty colonies, at 200 pounds each, would gather five tons of honey, which, at 8 cents per pound, would amount to $800. I do not think it would have cost more than $50 in labor to have saved that amount. But we tried one of the "short cuts" by open-air feeding. It required only to heat up a can of honey, mix with water and put it out in pans where the bees could take it.

In 1896 I had 225 colonies to take through a dry year just like this and not one was lost. But they were fed in the hives. In the spring I sold seventy-five colonies for $250. I gave the purchasers their choice out of the apiary and they took the strongest, of course. The apiary averaged 225 pounds to the colony that season. But we sold honey at 5 cents per pound then. Since then we have made a market, and there is no question but that we shall get 8 cents for all of the first grade and 7 cents for amber. This is not a high price, nor yet a low price. It is a price that we as producers and the consumers can afford. If extracted honey is held at 10 or 12 cents a pound it becomes a luxury—to look at, for company or some special occasion. Then it comes in competition with candies and other fancy, nonsensical trash which is only calculated to tempt the sight and palate. Then if it is sold at 3 to 5 cents per pound, there is not much remaining above the cost of production. It has often been stated that it costs about 4 cents per pound to produce extracted honey. By an unusually good harvest, by buying the colonies at a low price of some one who does not know what they ought to be worth, or by the employment of cheap help, or by taking all the bees gather and allowing them to starve, the cost price of honey may sometimes be cut down a cent or two per pound lower than that; but to the one who is keeping bees from year to year such methods do not pay. A person will have to wait and watch for such opportunities. And then they may not appear, and he is compelled to maintain himself two or three years without an income, or until his means are all used up. The only sure way is to get into "the game" and stay in it. Those that stay in it are always in practice, or, as we may say, "in training." Those are the ones who are best prepared to endure the hard "tugs." The bee man who brought his bees through such seasons as the one just passed need not look for employment or await an opportunity

It is simply a matter of "keeping the shoulder at the wheel." The main force that enables one to stay at the "wheel" is love for the business. With the more "ups and downs" and "hard knocks" there come, and success at last, unwavering confidence is established or increased; and we should then set out to contrive methods to be conveyed over such times easily, or by the least amount of interruption when they occur in the future.

One fault of our management a year ago, just previous to the scarcity of honey, was allowing the colonies to breed up so as to contain a large force of bees which could be of no use. This was done at the expense of their abundant supply of winter stores which was left in the hives from the previous good season. If the queens could have been restricted to two or three brood-combs there would have been enough young bees reared for all needs, and, besides, would have saved the laying capacities of the queens. If the queens had been prevented from exhausting their egg-laying disposition in the spring, they might have kept up more brood rearing in September and October and produced many late-reared bees, which were so much needed to go through the past winter and spring. The queens would have possessed better vitality, also, which exerts a corresponding influence on the worker bees, resulting in the colonies being more tenacious of existence and the appropriation of feed. The useless bees reared a year ago would be of high value now, but our hives were not so constructed as to admit of such transposition, at least, "on short notice." It was known that there could be no honey for them to gather. Some persons suggested that bees know when and when not to rear their brood So we allowed them to follow their natural instincts. Another time we intend to inject some intelligence into their methods.

In the Eastern and Northern States when colonies are taken from the cellar the hives are often full of bees. The cold, backward weather during the last of April and in May and the first half of June often reduces the strong colonies to mere handfuls of bees through spring dwindling. Often in a couple of weeks after the bees are put out they will have three or four combs of brood, and with pleasant, warm weather, with maples and fruit and dandelions yielding pollen and honey, the bee keeper will be led to think that they will soon be swarming and the colonies increased and his business fairly boom.

But there comes a day with a bright, sunny morn; clouds by 11 or 12 o'clock; rain, sleet or possibly snow by 4 o'clock in the afternoon, and during the night perhaps the formation of half an inch of ice by the next morning. Our balmy, sunny May weather seems to catch a cold that it can not throw off. All the spring flowers receive a set-back which often "puts them out of business" for the remainder of the season. The weather continues more or less cloudy or chilly, and what becomes of the tender brood in the hives? In a week or ten days we examine and find, in place of the broad sheets of brood with eggs and all-sized larvæ strewn in strips several inches wide clear to the otuer margins, a few patches of sealed brood the size of a hand or smaller. The eggs and larvæ have disappeared from the outside, and there may be only now and then an egg placed in the occasional empty cells among the sealed brood. Indeed, the prospects look slim, or "blue."

If such colonies as were taken from the cellar were set down here in California in any of the winter months, I believe there would be six or seven combs full of brood in three or four weeks, and the weather would not prevent it from hatching. But our colonies in January are weak—not able to maintain more than two or three combs of brood. Thus through January, February and March they go through the process of "building up" to attain strength sufficient to swarm. The cause of their becoming weak is that they continue to fly about during September, October, November and December and get to be old bees or get lost. Then the weather is unpropitious enough to hold a weak colony in check, when, if the colony was strong in bees, it could make rapid advance from the start. Such colonies would be too early for sage or any other harvest; but the number could be increased, queens reared, etc.; in short, about double the gathering force of the apiary, or reduce one-half the number of colonies to be carried through a dry season.

Summer Handling of Pear Blight.

(Continued from page 19.)

against spreading infection, and the larger cuts should also be wet with the same solution. For this purpose corrosive sublimate or carbolic acid may be used. One can not expect to get all of the blight out at one cutting, since the infected twigs do not all wilt and blacken at once; but a thorough cutting, closely followed up, ought to keep the orchard practically clean after the first outbreak. That this is in many cases not accomplished and the blight seems to get worse and worse is due, as stated above, to the fact that the work is not properly done. More or less blight is overlooked and left in the trees, continuing to spread; the limbs are not cut below the blight, but through the diseased portion which goes on down the limb; for fear of cutting off pears, the work is not thoroughly done; but before the end of the season not only most of the fruit, but the tree as well, may be lost It does not pay to go through the orchard simply picking off the black twigs and trying constantly to save pears and cut no large limbs. On the other hand, it is not necessary to tear the tree all to pieces because of a little blight in the top. Each tree must be carefully examined by one who knows what he is about. He must find all the blight and cut below it, whether this means picking off a 6-inch twig or cutting off the whole tree at the ground. He should not needlessly sacrifice the crop, nor yet endanger the whole tree for the sake of a few pears. Judgment and common sense must be used, and no one who can not exercise it should be put at this important work. Cutting in summer must usually be done a foot or two below the visible blight. By cutting into the bark, the extent of the disease can be traced quite easily. If an unimportant limb has a number of blighted twigs, cut it all off. If a tree is badly blighted all through the top, cut it back seriously rather than take time to cut out each twig; but, above all, get all of the blight in every tree and every limb from top to bottom completely cut out, whether much or little. In summer cutting find every particle of blight on every tree and cut it off below the affected part, wherever that may be in the tree. Use but few men, but have them competent and reliable; better leave the blight alone than cut into it carelessly.

This covers all the methods that we know of for checking pear blight in summer. Winter cutting, as stated at the beginning, is by far the most effective practice, but no effort should be spared at any season to keep down the disease. During the coming fall and winter competent men will be placed by the University and the United States Department in all of our important pear growing centers to make a thorough demonstration of methods of blight control, and every grower will be given opportunity to have his orchard inspected and shown the best methods of treatment. Several of our young men are already in the field getting the work in hand and following up the development of the disease. Experiments in summer treatment are going on, endeavoring to save and bring back into condition orchards already nearly ruined. The whole pear blight situation will be thoroughly followed up during the next two years. The writer will be glad to hear from all growers who are interested in the matter and give them all possible assistance and information as the work proceeds. During next fall we desire especially to direct work in as many orchards as possible in important pear sections, where proper control and co-operation can be obtained.

The darkest day in a man's career is when he thinks there is an easier way of getting a dollar than by squarely earning it.—Horace Greely.

Agricultural Review.

Contra Costa.

ALMOND GROWERS.—Antioch Ledger, July 1: At the last meeting of the Almond Growers' Association it was decided to sell the crop this year by consignment instead of by contract, as has been done in former years. Heretofore the Association has "held the umbrella" over the outside by keeping prices up. The Johnson-Locke Co. of San Francisco will handle the crop for the Association. Hereafter the Association will hold its meetings at Oakley.

Fresno

COUNTY REPORTS.—Fresno Republican, July 1: The tomato crop is a failure and the raisin crop will be short, according to the report of Horticultural Commissioner F. C. Shell, filed with the supervisors. The body of the report reads as follows: "Our progress in the inspection of orchards is somewhat retarded at present by the handling and drying of the fruit crop, but what progress was made shows a satisfactory condition. The fruit received and offered for sale has been looked after, and, as a whole, the quality is beyond objection. Some increase in pernicious parasites has been noted and means for their eradication has been or will be taken. Some disappointment will be felt in the return expected from our fruit crop, as peaches will not yield the crop promised a short time since. The tomato crop promises a total failure, caused by the inroads of the tomato wilt—a disease seemingly beyond control. The outlook for raisins, under best of conditions, is for a small crop." Jesse J. Bowen, bee inspector, reported yesterday to the supervisors that the bees are not doing very well this year, and from present indications the honey output of this county will be light this year. The inspector worked twenty-two days, inspected sixty apiaries and found seventeen diseased.

FINE QUALITY FRUIT.—The fruit crop near Selma is being harvested, and growers report a good average yield. The quantity is not as large, but the quality better than last year. Apricot drying has been completed. This crop was about two weeks earlier than usual. Peaches are also early and cutting will soon commence. A large quantity of green fruit has been shipped from this point the present season.

Sacramento.

ENTERPRISING JAPANESE. — Sacramento Union, July 2: A movement is afoot among a number of the Japanese of Sacramento to secure a large tract of land and proceed to do farming. A Japanese real estate man is said to be at the head of the proposed deal, and it is known that they have an option on at least one 600-acre tract. The Japanese propose, it is said, to form a company or association of fifty or more men, each of them to put up something like $150, and to buy the land on the co-partnership plan. It is said that they have secured the option on the 600-acre tract with the understanding that $4000 shall be paid down, and that certain improvements shall be made the first year. The Japanese say they realize that the feeling against them in this State and on the Pacific coast generally is growing, and that to buy land will not only protect them, but it will save the high rentals they are obliged to pay for berry and bottom land.

FRUIT PROSPECTS.—Sacramento Union, July 1: At Fair Oaks early peaches are better than usual this year and the prices have been equal to the quality of the fruit. A large crop of apricots is ready for the market and the fine condition of the fruit gives it a ready sale. The pear crop is a partial failure. In most orchards the orange outlook is the best it has ever been Olives are surpassing all former records. The growth of wood in all kinds of trees has been so great that the increased size of the trees insures a larger crop, other things being equal. The apple crop is disappointing. A kind of blight has fastened upon the apples, which causes them to cease to grow and to ripen prematurely. Almonds are excellent everywhere in this locality.

San Diego.

OLIVE IRRIGATION.—San Diego News, June 29: The Allen ranch, near Dehesa, have commenced irrigation. They have irrigated the olive orchard and are now irrigating a portion of the vineyard. It is their intention to irrigate a portion of the vineyard and compare its yield with that which has not been irrigated, and will have a practical demonstration as to whether it pays to irrigate a vineyard.

San Joaquin.

COLD WEATHER HOLDS WATERMELONS BACK.—Lodi Sentinel, June 24: F. Christesen, who is associated with Ed. Powers in growing watermelons at Manteca, in the southern end of the county, was in Lodi this week and stated that the 150 acres planted to watermelons there were doing very well, with the exception that growth was retarded somewhat by the cool weather recently. Now, however, the melons are making rapid growth and will be ready to put on the market in two weeks. Grasshoppers have caused considerable damage to the watermelons in that section. To kill off that pest, Mr. Christesen used the bran and arsenic remedy, with telling effect.

APRICOT DRYING IN FULL SWING.—The apricot season this year is about ten days earlier than in 1904, and the fruit is much larger than common. The apricots are coming in very fast and the season is in full swing. The fruit is quite free of "shot-hole fungus," a pest which usually plays havoc with the crop. The peach crop is not so good as last year. Young Muir trees, however, are bearing well, but Lovalls will be a small crop. Other varieties are not bearing heavily.

Santa Barbara.

CROPS PROVE GOOD.—Weekly Santa Barbara Press, June 29: The commencement of the harvest season in the vicinity of Lompoc indicates that the crops will be fully up to the early expectations. There is a scarcity of labor and the threshing outfits are short-handed. Wages are consequently very good.

SUMMIT FRUIT LIGHT. — The fruit crop of the summit ranches is reported light by Patrick Kinevan, whose ranch is near San Marcos pass. Mr. Kinevan states that the peach crop will be very nearly a failure, while the apples and grapes will not be up to the standard in quantity, although the quantity will be in keeping with the record for summit fruit.

Santa Clara.

FRUIT NOTES.—Los Gatos News, June 30: The weather has brought the apricots along slowly and they are maturing plump and of excellent quality, much finer than they have been for the past two or three years. The apricots in this section are clean, perfectly free from rust and smut. The price of drying 'cots has declined to about $15 or $16 for good crops. Next week will see the driers at work with full force, though most of the fields display a few 'cots at the present time.

Solano.

SUIT AGAINST COUNTY.—Suisun special to the Sacramento Bee: J. M. Conner, G. C. Conner and J. M. Conner, Jr., have instituted suit against Solano county as a result of the fire which burned several hundred acres of grain for them near Vacaville on June 20, 1902. The board of supervisors ordered the burning of some adjoining pasture land to destroy the grasshoppers and the flames spread to the Conner place and consumed a large field of grain. The grain was insured in the Manchester Assurance Co. for $3300. After deducting the amount of the insurance, the board of supervisors ordered a warrant drawn in favor of the Conners for the remainder of their loss, amounting to $2551.50. Auditor Wooderson held up the warrant and the Conners were compelled to sue for it, judgment being rendered in their favor. The plaintiffs, in the complaint filed Monday, state that there was an express understanding with the supervisors that plaintiffs should sue the insurance company for the amount of the policy, and, should they fail to obtain judgment, they would be entitled to present their claim for the amount of the policy, together with all the expenses of the suit, to the board of supervisors. Suit accordingly was brought in the United States Circuit Court and judgment was given against plaintiffs. They carried the case to the United States Circuit Court of Appeals and the judgment of the lower court was sustained. A petition for a new hearing was dismissed as not entitled to consideration. Now the plaintiffs ask judgment against the county for $3300, with legal interest thereon from August 20, 1902, together with costs of the suit against the Manchester Assurance Co., $136.10, and the further sum of $217 paid their attorneys.

CROP CONDITIONS. — Dixon Tribune, June 30: Now that the harvest is well under way it is possible to estimate with some degree of certainty the crop conditions. With the exception of the late sown grain the yield is about half a crop. The barley crop is not so bad as wheat, the average yield being about nine or ten sacks to the acre, and it is generally light. The wheat crop is almost a total failure, not more than three or four sacks being threshed to the acre, and the result at that is not much in advance of chicken feed, an average sack weighing about 120 pounds.

FIRST FRUIT. — Vacaville Reporter, July 1: The first carload of fruit from Vacaville this season for the European market left Tuesday. It contained a well selected assortment, including seven varieties of plums. Twelve hundred and ten of the new crates were used in this shipment. The shippers were the Earl Fruit Co., H. M. Watson and T. Albarda.

Sonoma.

HOPS.—Santa Rosa Republican, June 30: The present weather is greatly beneficial to the hop vines which have come up this year and prospects are brightening for the coming crop. At the present time it is estimated that the 1905 crop will be about as large as that of last year—19,000 bales.

Sutter.

STABLE FIRE.—Sutter Independent, June 29: A very destructive fire occurred Friday night on the William Sanders' farm, 6 miles northwest of Yuba City. There were in the barn 22 head of horses and mules, all of which perished, except one blind animal. Besides these there were 22 sets of harness, 100 tons of hay and a lot of feed. The loss is estimated at $6000. The barn was valued at $2250, with an insurance of $1200. The hay and grain were valued at $900 and insured for $350. The harness was valued at $350 and the 21 head of work animals at $2500, with no nsurance. The buiilding was practically new and cost $2500.

HOPS.—Reports from the hop sections in this county are that it is the poorest crop raised for several years. It is expected that at the Rideout ranch the output will not exceed 250 bales or about one-third of the normal yield. About Nicolaus the crop is light. C. Grider is reported to be about the only man in that section who will harvest anything like a fair crop. The wet condition of the soil, causing the roots to rot, is said to be accountable for the low yield.

WHEAT AND BARLEY.—Harvesting in Sutter county has commenced and reports show that the yield of wheat will be very low. Barley will be below the average, yet is expected to be a fair crop considering the season. Wheat is turning out about five sacks to the acre on an average.

Stanislaus.

BEET CROP.—Stanislaus News, June 30: Recent investigations have demonstrated that the beet crop in this county will not be as much of a failure as was predicted a week ago. While blight has done some damage, the principal causes of the poor condition of the beet fields are improper cultivation, lack of irrigation and late planting. Many of the beet fields are now being irrigated, and they show a marked improvement already, so that hopes for a fair crop can be entertained. In the opinion of experts, the beets planted in January and February will produce good crops, those planted in March a small crop, while the April planting will be a failure. The majority of the beets in this county were planted rather late in the season and time was not taken to cultivate deep enough, and as a result the growth of the beet was stopped when it reached the hard pan. A committee, consisting of C. R. Tillson, C. T. Elliot, G. T. McCabe, I. N. Baldwin, C. D. Swan and James Thompson, last Saturday visited the 200-acre beet patch west of Modesto, which is owned by the association formed in the spring to promote the beet culture. They found the beets there to be in a very good condition, and that the plants had taken on renewed growth as the result of being irrigated last Monday and Tuesday. No blight was found in the field, and from present indications a good crop will be harvested. If all of the beet fields are well irrigated from now until harvest time the Stanislaus beet crop will be anything but a failure.

THREE TONS TO THE ACRE.—Modesto Herald: J. S. Wootten reports a record crop of alfalfa that is being cut on twenty acres owned by Mr. Salyer and situated about half way out on the Salida road. The alfalfa was planted last year and the present crop is the second for this season. Mr. Wootten states that the alfalfa measures breast high on him—and he is a tall man—and that it is one of the most uniform pieces he has ever seen. Mr. Salyer says the crop will average three tons to the acre, and Mr. Wootten is of the same opinion.

Tehama.

MYRIADS OF MELONS. — Red Bluff News: The largest watermelon patch in northern California, which is located a few hundred yards west of the railroad depot at Tehama, is already making a good showing and gives promise of a large yield during the coming season. Wm. Wanee of this place and Wm. Coulter of Tehama are partners in this extensive watermelon venture. They have thirty acres of this fine land planted to the different varieties, which in a month will begin to produce melons for the market in carload lots. The soil is in an excellent state of cultivation and already the plants are beginning to cover the ground. The patch contains over 14,000 hills, which at a low estimate will yield four melons to the hill. These can be sold in large quantities at at least $1.25 per dozen, thereby bringing in large returns to two men engaged in the venture.

FRUIT OUTLOOK.—Red Bluff special to Sacramento Bee: The first car of green fruit was shipped from Red Bluff June 30, and the James McFeeley Co. had the honor of being the consignor of a car of apricots. The crop of apricots is shorter than last year, but the fruit is larger and finer in every way than for several years. General fruit picking will begin almost immediately after the Fourth and many men, women and children will aid the small army of Japs and Chinese recruited for this purpose. Prunes are ripening fast and this county expects to exceed her former records in producing a larger and choicer crop. There is a shortage in this staple, and fruit growers are hopeful that prices will be larger. The yield of pears on the Cone ranch will surprise those who examined this orchard several weeks ago, and Manager Ramsay has contracted the entire crop at a top notch figure. The gathering of prunes will have to be rushed, as the pears are nearly ready for harvest.

CROP CONDITIONS.—Corning Observer, June 29: Cooler weather than usual for this season of the year has prevailed this week. Grain harvest is progressing rapidly and hay making continues. Barley will yield a better crop than was expected in some localities, but the wheat yield will be below earlier estimates, owing mainly to the ravages of the grasshoppers. The hay crop is large and of excellent quality, and alfalfa has not been injured materially by the hoppers. Fruit shipping continues. Apricots and early peaches are being shipped north at good prices.

Tulare.

VISALIA SUGAR BEET FACTORY.—Fresno Republican, June 29: Unless present plans fail Visalia's new sugar beet factory will be in process of construction within the next thirty days. Nathan Cole, one of the promoters, G. S. Dyer Jr., architect and construction engineer, and S. K. Shaw, beet contract manager, are to confer with Engineer Henderson, of the Santa Fe Co., relative to the side track spurs to be run from the company's line to the factory site, a mile southeast of the city.

ROCKY FORD MELONS.—Lindsay Gazette, June 23: T. J. White, the melon expert from Coachella, who has been in this district during the summer in the interest of the shippers, says the crop, which will amount to about forty cars from Lindsay and Exeter, will be ready to commence picking about July 1. Besides the ten acres belonging to Messrs. Linderschmidt & McClugan, John Taylor has fifteen acres which, Mr. White says, will yield from 200 to 250 crates per acre. He counted eighty-four melons on one vine at Linderschmidt's place.

Yuba.

BURR CLOVER.—Marysville special to Sacramento Bee: Cline Bull, a prominent agriculturist of this county, is highly elated over the success which has attended his first experience as a grower of burr clover, an article that promises to become more profitable than some other lines he has essayed. Burr clover has gained the reputation, on account of the large quantity of oxygen it carries, of being the best fertilizer obtainable. It is the bulbs attached to the root of the clover that carry the oxygen that is so valuable to plant life. Mr. Bull says his present crop has attained a height of 7 feet, which proves that the soil he placed it in was already rich. The proper place to plant it is among the trees of the orchard and then plow it under when it is grown. The seed is shipped in the burr and planted while in that shape. In the Santa Clara valley and in Mexico burr clover is extensively used.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle, SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle, Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

"They."

Who are "they" and what are "they"
  And who knows where "they" live?
You hear about them constantly,
  Of what "they" do and give.
It's "they" say this and "they" say that,
  And "they" are so and so;
You hear about them everywhere,
  No matter where you go.

"They" say the city water now
  Is pure and fit to drink;
"They" tell so many things, I trow,
  One knows not what to think.
Miss Sally Jones has a new gown;
  At least that's what "they" say—
And Nansen may, "they" tell us, be
  The ruler of Norway.

"They" told us Togo won the fight—
  Of this there is no doubt,
But what we'd like to know is this:
  How was it "they" found out?
"They" said the Japs, on land or sea,
  For Russia were too strong;
But how the dickens did "they" know?
  They said it right along.

It must be quite a family,
  This one that folks call "they;"
They're not in the directory—
  We looked just yesterday.
Will some one please just tell us who
  "They" are and what "they" do?
We're curious to know and we'll
  Be much obliged to you.

—Milwaukee Sentinel.

Rigid Methods.

Bring forth the old unloaded gun,
  Of which the jesters wrote,
So you may turn its muzzle on
  The man who rocks the boat;
And if that deadly weapon is
  Not anywhere in sight,
Just carry as a substitute
  A cake of dynamite.

And should the dynamite be damp,
  So damp 'twould not explode,
We know of something just as sure
  To get him out of the road.
Just lock him up, compelling him
  To sap his life away
By smoking deadly cigarettes—
  A hundred, say, a day!

—Chicago News.

Tale of a Mended Coat.

It was manifestly my destiny to marry a poor man—a destiny which had been assigned to me from childhood, and which I fulfilled at twenty-one. That I was certain to do this was a part of my education. My grandmother of revered memory had foretold it when I was a wee toddler, and "Beth ought to marry a poor man" was always on the lips of my school and college chums.

"Marrying goes by destiny," laughingly quoted Jean Barston, my bosom friend, when she introduced me to her wealthy cousin, just home from Manila, "therefore, Cousin Philip, you are quite safe, for Beth is cut out to be a poor man's wife."

To tell why this fate had been portioned out to me seems like putting a premium on extravagance. From babyhood I always displayed a thriftiness and certain housewifely traits which my admiring parents found vastly amusing. My dolls were, I am told, always neatly robed for bed at night and dressed neatly next morning. They never played tea out of pinafores tied under their waxen chins, while those belonging to my sister Madge never had their gowns changed until the old ones were so soiled that auntie, for decency's sake, renewed them, the wearers passing their wretched nights under the lilac bush, or on the kitchen dresser, or under the range, or wherever their careless mamma happened to leave them.

I must have been a sad little snob, for I never asked Madge to bring her family to take tea with mine. I did not want my daintily dressed babies to sit at the same table with such dirty little outcasts. Madge married a rich man (she always declared she would), but her children in no way resembled her dolls. They were always as beautifully dressed as money and a French bonnet could keep them. Still, I felt whenever I looked at Madge's face that money had not brought her happiness.

Being a portionless girl, there was a fitness in my marrying a poor man, and when Harold Rogers, a briefless young lawyer, asked me to marry him, I said "Yes" very solemnly and thankfully, for I knew him to be rich in goodness and gentleness, and took no thought of his lack of ducats. I had not wished or expected to become rich; still, I was not wholly prepared for the struggle of the next few years. We went to the northwest to grow up with the country, which was somehow slow in growing. The inhabitants were usually amiable, and law cases few Indeed, I always suspected that Harold had a fashion of inducing his clients to settle their cases without going into court; but I had married him for his goodness and not for gold, and so I held my peace.

The hard part of our poverty was for each to see and know the privations of the other. Clothes began to wear out. A woman can, however, always make a respectable appearance, no matter how shabby her gown, by furbishing it up with a ribbon or a bit of lace, and my habit of caring for trifles stood me in good stead now. But when Harold's overcoat grew too shabby to wear, in spite of my skillful tailoring, I must confess, my heart ached. The winters of Wisconsin are not exactly balmy, and each day, as Harold buttoned his coat tightly over his brave heart and declared he "never felt the cold," I knew that I felt it for him.

One day, as I was rummaging in an old trunk containing some relics of my husband's bachelor days, in the forlorn hope of finding something that might be turned to account, I discovered at the very bottom a neat paper parcel. On being opened, this disclosed an interlining of tar paper, and then, (oh joy!) a man's overcoat. It was about Harold's size and I never doubted that it was a discarded overcoat which he had neglected to give away in his palmier days. I determined to repair it as a surprise. It was a soft, brown Melton, and must once have been a very handsome coat; fortunately, the fashion of men's overcoats does not very greatly change even in a decade. The sleeves around the hands were worn and frayed, and the linings in positive tatters. I ripped out the latter and pressed one for a pattern by which to cut the new ones. On measuring it with his discarded coat, I found that I could afford to turn up a seam around the hand, which I did, dampening the cloth around the hands and pressing the part to be turned up with a hot iron, first laying a moist cloth over that of the sleeve, so that the iron would not flatten the nap or change the color.

I cut and made the sleeve linings, and put them in exactly as the old ones had been; next I ripped the lining loose down the front to get at the pockets, which needed repairing, and to sew the buttons on properly. In one of the breast pockets I came upon a legal-looking document, neatly tied with red tape, and addressed to my husband. I made a mental note of this, to be sure to give it to him, although I did not suppose it to be of the least consequence, knowing his great carefulness in regard to such matters.

Meantime I went on with my task with a light heart, fastening the torn corners of the pockets to strong stays on the wrong side, pressing them with a hot iron, and then turning the coat and following the old line of stitching. Two of the buttons were off and had taken bits of the cloth with them. Here I felled under the torn pieces of the cloth cut from the wide under-arm seam, blind-stitching them on the right side and sewing on a new set of buttons. The velvet collar was worn and greasy. Harold's collars were never greasy, and I began to have vague doubts about the ownership of the coat.

But I was growing interested in my task, and it would never do to retreat now; so with a small scissors I ripped off the offending velvet, and found in my hat box a piece of the exact blue-black shade needed. From this I cut a new collar, using the old one, after pressing, for a pattern. In mending men's clothes, neatness will sometimes supply the place of skill, but nothing will supply the place of neatness. Basting the velvet evenly on the wrong side of the coat at the neck with very close stitches, so that it would not shove under the foot of the machine, I stitched, pressed and turned the velvet smoothly over the collar, giving three rows of basting; then turned the edge of that of the collar and basted again, finally herring-bone stitched the velvet to it with silk of the same color, and fine, even stitches. I worked all the buttonholes over with heavy twist, and brushed my prize thoroughly, cleaning all spots with ammonia, alcohol and emulsion of castile soap.

I awaited Harold's return in the evening in a state bordering on mild frenzy, which I still remember with pleasurable emotions. I know nothing like it now, when he can drive to his tailor's and order a new coat whenever he feels inclined to do so. There is a pleasure in economy that the rich never know—unless they have once been poor.

After dinner Harold asked me to walk with him. This was our usual custom, but he never omitted, in his sweet, loverlike way, to ask it as a favor. For some time we had not gone out except in the evening, when I could wear my heavy shawl, which kept out the cold, but would not have passed muster in the daylight.

Harold went for his old coat, which he could wear at night, and quite innocently, in the dim light of the hall, put on instead the one at which I had worked all day. He fumbled for a certain pocket, and then came into the light of the parlor, looking at the coat in a bewildered way. Then, with a laugh, he called out: "I say, Beth, here's a good joke. George Marston must have gone home with my old coat last night and left this. I wonder he has not sent around for it."

I felt that the moment had come for my denouement, and unfolded my story, pointing out the improvements I had made in his discarded coat. To my dismay, he began to take it off, looking a little pale, and saying, "I don't think I shall like to wear this coat, although I shall always love it for the sake of the work these little fingers have put on it." Then, seeing my look of disappointment, he hastened to kiss my hands, adding, "Sit down and let me tell you its story."

"I have never spoken to you of my very wealthy but eccentric uncle, who died after our marriage. I was named after him and, as I was his only relative, with the exception of a nephew of his deceased wife, who was dissipated, it was pretty generally supposed that he had made me his heir. A short time before his death he asked me to comply with certain conditions that restrained my personal liberties, which I refused to do. It was, therefore, with no surprise that on the opening of the will I found myself not mentioned in it. It was dated six months before his death, and it was the belief of his confidential servant that he had made another, although it could not be found. A month before his death, my uncle had driven to his lawyer's, who was out of town; then had gone to another, whose name and address the coachman had not remembered. On his way home, he was siezed with a stroke of apoplexy, and never spoke again. A few hours before his death he seemed greatly distressed, and made them understand by signs that he wanted his overcoat brought to him. Whatever his purpose was, his nerveless fingers failed to effect it. With a final effort, he gasped my name, and upon being asked if the coat should be given to me, he signed, "Yes."

His valet, with whom I had always been a favorite, in the days when I was my uncle's also, was still devoted to me, and after telling me this at the funeral, dispatched the coat to my address. I never opened the parcel; and, Beth, dear, I loved the old man, and even in our dire distress I cannot wear his coat."

"I see it all now, Harold," I gasped. "I cost you your uncle's money."

"And what would it have been worth to me without you, sweetheart?" and Harold took me in his arms, kissing the color back to my cheeks.

Just then I remembered the document I had found in the pocket, and flying from the room, returned with it, saying, breathlessly, "Maybe—maybe—I have restored it to you. Look at this. I found it in the pocket of the coat."

It proved to be a will executed on the very day of his uncle's seizure, leaving everything to his "beloved nephew and namesake, Harold Rodgers." Strangely enough, the lawyer who drew the will had died before old Harold Rogers, and the clerks in his employ had gone elsewhere. Suffice it to say the will survived all the perils and practices of the probate court.

The moral of this story is not that a girl who has the domestic faculties largely developed is therefore certain to marry a poor man, but that every girl who expects to become a wife should know how to mend a coat.

How to Judge the Weather.

Now that it has been established that Fahrenheit was not the original inventor of the thermometer, Stevenson's linseed oil thermometer, which was graduated by placing in ice in order to find a degree suitable to be called zero, and again the temperature of the body was called 12, and the point at which water begins to boil, as 22, is conceded to be the first.

Now comes up the couplets by which the old-timer foretold by barometric intuition what the weather would be. There was just enough fact in the old signs and omens to cause them to be remembered best in rhyme.

Rainbow at night, sailor's delight;
Rainbow in the morning, sailor take warning;
Rainbow at noon, rain very soon.

A combination of rain and sunshine was also supposed to bring rain the next day.

Another verse which found favor was:

Evening red and morning gray,
Will set the traveler on his way.
Evening gray and morning red,
Will pour down rain upon his head.

This is but an adaptation of the adage that a red sunset is a sign of clear weather. And if the sun goes down in a cloud, rain will surely come the next day.

If it clears off in the night, look for rain the next day.

If smoke from the chimney settles instead of rising, there is a storm at hand.

When sound travels a long distance, there is also a storm near.

Never expect much storm in the old of the moon. The absence of dew and an unusually heavy dew are alike forerunners of rain.

Not much frost need be expected in the light of the moon.

An owl hooting in the hollow is a sign of cold storm; on the hill it foretells a thaw.

If the hornets build low, the winter will be hard.

When leaves fall early, the winter will be long.

When snow falls on a hard road, it will not last long.

The last spring snowstorm never comes until after the "sugar snow," which may be recognized by coming in unusually large flakes and only lasting a few minutes.

If the hog's pelt is found big at the front, the first part of the winter will be the most severe; if the reverse is true, we may look for hard weather in February and March.

Bright northern lights bring severe cold.

If the sun shines on the second day of February so as to permit the woodchuck to see its shadow, it will go back into its hole and remain six weeks.

If March comes in like a lamb, it will go out like a lion. In other words, one extreme at the beginning promises the reverse at the end of the month.

Sun-dogs indicate a bad storm.

Distant sounds heard distinctly forebode no good weather.

If the sun "draws up water," it will rain.

The pitcher sweating and the teakettle boiling dry also indicate rain.

Cobwebs thickly spread upon the grass are an indication of fair weather.

Animal life seems, according to the

Don't get Angry
with your razor. It has a temper of its own. It will work well if you use
WILLIAMS' SHAVING SOAP
Sold everywhere. Free trial sample for 2-cent stamp. Write for "The Shavers Guide and How to Dress Correctly."
The J. B Williams Co., Glastonbury, Conn.

popular notion, to have peculiar warnings regarding the weather changes. Some of these are explainable by natural causes. It is a fact, recognized by all intelligent stockmen, that cattle have an intimation of an approaching storm some hours before it is visible to the human eye. There is a certain restlessness which the cowboy has learned to interpret at once.

When you see a pig pasturing in the field build for itself a nest, you may look for a storm.

Chickens take extra pains in oiling their feathers just before a rain.

If peafowls send forth quail cries "more wet" from the meadow, the farmer works briskly to get his hay under shelter.

If the chickweed and scarlet pimpernel expand their tiny petals, rain need not be expected for a few hours.

Bees work with redoubled energy just before a rain.

If the flies are unusually persistent either in the house or around stock, there is rain in the air.

The cricket sings at the approach of cold weather.

Squirrels store a large supply of nuts and the husks of corn are unusually thick before a cold winter.

The buds of the deciduous trees have a firmer protecting coat if a severe winter is at hand.

If the poplar or quaking asp leaves turn up the under side, rain will soon follow.

If the fog rises in the morning, it is a sign of rain; if it settles a clear day may be expected.

Watch the smallest cloud you see. If it increases in size, it is going to rain; if it melts away and vanishes completely, fair weather will follow.

If the camphor bottle becomes roily it is going to storm. When it clears, settled weather may be expected. This idea has seemingly been utilized in the manufacture of our cheap barometers. The main trouble is they seldom foretell the change until about the time it arrives.

Last, but not least, the rheumatic can always tell in his bones when a storm is approaching, and to this prognostication the octogenarian of today is as firm an advocate as were his forefathers.

Domestic Hints.

OLD-TIME MOLASSES COOKIES.—Beat three eggs, add a cupful of sugar, one of molasses and another of butter, one of sour cream and half a cupful of boiling water in which is dissolved a teaspoonful of soda. Mix soft and roll thicker than ordinarily for cookies. Use whatever flour is necessary.

FRUIT BISCUIT.—Mix half a cupful of butter in four cupfuls of bread dough, also a half cupful of sugar, a third of a cupful of chopped citron, the same of figs and candied cherries; add four well-beaten eggs. Then knead thoroughly and set to rise. When light, made into biscuit form, brush with the white of an egg, dust with sugar and set again to rise. Then bake in a moderate oven.

CREAMED EGGS.—Pour into a saucepan half a pint of milk, three table spoonfuls of butter, a saltspoonful of salt, a little celery salt and a dash of pepper; thicken with a little flour made smooth in milk, and allow it to boil up once. Have prepared five or six eggs that have been hard boiled, crumble one of them into the mixture, arrange the others in thick slices in the center of a hot platter, turn the cream over them and garnish with three-cornered pieces of toast and an occasional sprig of parsley. Serve very hot.

HOLLANDAISE SAUCE. — Hollandaise sauce is the best sauce for an ordinary boiled fish, like halibut. The following rule will make sufficient sauce to serve with two or three pounds of fish: Mix together two tablespoonfuls of butter, half a bay leaf, half a dozen whole peppers, and a teaspoonful of onion juice. Then add a cupful of stock, or water, and juice of a lemon. Place the bowl containing the sauce in a pan of water and stir it until the butter melts. If the butter is very fresh add a saltspoonful of salt. Take from the fire and stir a very little of the mixture into the well beaten yolks of three eggs. Then gradually stir the eggs into the remainder of the sauce. Return it to the fire and stir the sauce steadily until it thickens. It will take about five minutes. Add a tablespoonful of butter and the sauce is ready to be served with the fish.

Hints to Housekeepers.

A tablespoonful of sal-soda, over which boiling water is poured, is recommended for taking stains off coffee pots. With this treatment no boiling is necessary.

A reliable test for mushrooms, says an experienced housekeeper, is to put a bit of silver, such as a well washed dime, into a dish in which they are cooked. If it discolors, the mushrooms are unfit for food.

The woman who keeps house should pay a daily visit to the cellar and see that it is aired, even if she has to neglect her parlor. Enough germs may lurk in the willing leaves of a cabbage or a handful of decaying potatoes, to cause inexplicable illness in her family.

A veteran housekeeper says that washing lamp chimneys is a waste of time. Just hold them over the steam from a boiling tea kettle, then rub them off with a dry newspaper folded up into a wad, and lastly with a soft cloth, and they will be all that can be desired. Washing makes chimneys brittle, anyway.

The very best fruit ice cream is made by whipping cream and partially freezing. Meanwhile mash the fruit with plenty of sugar and stir it into the cream, and complete the freezing process. When cream is whipped it goes further, besides making a lighter ice cream. The fruit does not require much freezing.

Treat the baby as a tropical plant, advises Good Housekeeping, and do not try to toughen him by taking him out every day. Thirty-five degrees is cold enough for a child under two years. Never take him out when the atmosphere is dark and rainy, and keep him in the sunshine and out of the wind as much as possible. Protect the eyes from the sun always with a dark umbrella.

Doctor Yourself
when you have
Cramps, Colic, Diarrhœa
or similar troubles
with
Painkiller
(PERRY DAVIS')
It never fails to give prompt relief. It's the best physician you could employ.

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F. E. ROMIE, Mgr., PARAISO SPRINGS.

DIVIDEND NOTICE
California Safe Deposit and Trust Company,
Cor. California and Montgomery Sts.
For the six months ending June 30, 1905, dividends have been declared on the deposits in the savings department of this company, as follows: On term deposits at the rate of 3 6-10 per cent per annum, and on ordinary deposits at the rate of 3¼ per cent per annum, free of taxes, and payable on and after Saturday, July 1, 1905.
J. DALZELL BROWN, Manager.

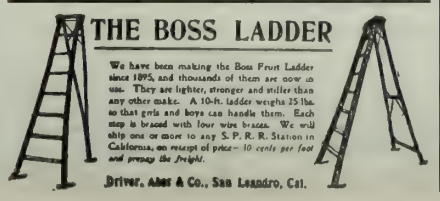
Dividend Notice.
SECURITY SAVINGS BANK,
316 MONTGOMERY ST.
For the half year ending June 30, 1905, dividends upon all deposits at the rate of three and one-quarter (3¼) per cent per annum, free of taxes, will be payable on and after July 1, 1905.
FRED W. RAY, Secretary.

Dividend Notice.
SAVINGS AND LOAN SOCIETY,
101 MONTGOMERY ST. COR. OF SUTTER.
Has declared a dividend for the term ending June 30, 1905. at the rate of three and one-half (3½) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1905.
EDWIN BONNELL, Asst. Cashier.

TENTS!
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Driver, Abel & Co., San Leandro, Cal.

GLENN RANCH,
Glenn County, - - California.
FOR SALE
IN SUBDIVISIONS.
This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.
This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.
The river is navigable at all seasons of the year, and freight and trading boats make regular rips
The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Eibe.
For further particulars and for maps, showing the subdiv'sions and prices per acre, address personally or by letter,
F. C. LUSK,
Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California

SPECIAL!
I offer for a short time only a splendid 46-acre tract of land in the Santa Cruz mountains, which for a Summer Resort is ideal, being so situated as to be free from fogs and wind and commanding a magnificent view of hills and valleys. Fenced and cross-fenced; beautiful groves of natural woods; delightful and healthful climate. About 2500 assorted fruit trees, and five acres in table grapes. Location 4½ miles from Los Gatos. Fine house 7 rooms; barn and outbuildings; purest mountain water in abundance. Price $6000.
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Assaying of Ores, $25; Bullion and Chlorination Assay, $25; Blowpipe Assay, $10. Full course of Assaying, $50. Established 1864. Send for Circular.

The Markets.

San Francisco Produce Report.

San Francisco, July 5, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 90½@91⅜	86 @ 87⅞
Thursday	90¾@92⅞	87 @ 89¼
Friday	91⅜@94	88¼@90¾
Saturday	92⅞@94¼	89⅜@90⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	55¼@56⅛	54⅜@56⅛
Thursday	54⅞@55⅝	53¾@54⅝
Friday	54⅞@55½	54 @54⅜
Saturday	55⅜@56⅛	54¼@54⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 38⅜@1 39⅛	$ ——@——
Thursday	1 39⅝@1 40⅝	——@——
Friday	1 41 @1 41⅝	——@——

Wheat.

Transactions in spot wheat continue light. There is nothing as yet doing for export, and the little wheat that is selling is going to the country for chicken feed purposes. Stocks of wheat in the country are generally low and the prices being realized for small lots for chicken feed are far above the export basis. The aggregate of this business is now quite large and is expected to increase for several weeks. When the new wheat comes in in sufficient quantity to check this movement prices may recede enough to permit of buying for export; but, in view of the crop reports now coming in, shippers are not hopeful of doing much this year. The possibility of an European war may advance foreign markets to a parity with the California market, but this possibility is considered remote. The action of President Diaz of Mexico in suspending the import duty on wheat shipped to Mexico prior to August 31st has had a hardening tendency on local prices. Late reports from the country are pessimistic and indicate that the new wheat will fall below previous estimates both in quantity and quality. The rate situation is unchanged. None of the disengaged tonnage in the harbor has been chartered for grain and the outlook for activity in this line is poor.

California Milling	$1 55	@1 65
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 wheat	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat $1.42½ was bid.

Flour.

Trading has not been very heavy this week. The export business shows a tendency to drop off, owing to the demoralization of the Oriental trade. The new Japanese duty on flour took effect on July 1st and speculators in Japan are heavily loaded. They bought for several months ahead and have apparently overloaded the market. Several failures in Hongkong and elsewhere are reported as a result. Locally the situation is about as heretofore, with prices well maintained. The stock of old flour is not heavy and the mills are generally waiting for new wheat.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market showed considerable activity in spot during the past week, more, in fact, than for some time past. The market has generally favored the sellers and, in spite of the holiday dullness, prices have been stiff owing to moderate receipts. Good feed barley has scored an advance, some sales having been made at 97½. The scarcity of spot barley is expected to hold the price at or above present figures until the new barley comes in. Barley to arrive is unchanged, no new estimates as to size of coming crop having been given out. The export situation is similar to that of wheat. For the time being, feed barley is quoted above brewing for export and this prevents all thought of exporting. The new crop will, however, be large enough to allow of some exporting and prices are expected to come down to an export basis.

Feed, No. 1 to choice spot	$ 95	@ 97½
Feed, fair to good, to arrive	87½@	92½
Brewing, No. 1 to choice old	——	@——
Chevalier, No. 1 to choice	1 10	@1 15
Chevalier, common to fair	1 00	@1 07½

Oats.

The market for new red oats is weaker this week under fairly large offerings. On the whole, however, the arrivals are less than was to be expected, though the usual large arrivals are expected from now on. Black oats are now out of the market, except a small quantity of old black which is firmly held at $1.45. There is but little doing in future oats, the tendency of buyers being to await further evidence as to the quality and size of the crop.

White oats, fancy feed	$	——	@——
White, good to choice		——	@——
White, poor to fair		——	@——
Milling		——	@——
Black oats	1 45		@——
Red, fair to choice new	1 10		@1 25

Corn

Locally the corn market has been lifeless during the past week, owing partly to shortage of stock. There are now no offerings of Egyptian white or brown corn and none are expected before the new crop comes in. Arrivals of Eastern corn, mainly for export, continue about as for some weeks past.

Large White, good to choice Cal	$1 42½	@1 47½
Large Yellow	1 40	@1 45
Small Yellow	1 47½	@1 52½
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	1 35	@1 45

Rye.

The market for spot rye continues to favor sellers, though the demand is now very light. Prices are still held as heretofore and no change is expected before the new crop comes in, though an occasional sale may be made either above or below quotations according to buying or selling pressure.

Good to choice	$1 40	@1 45

Buckwheat.

There is now no buckwheat in first hands and quotations are entirely nominal.

Good to choice	$2 25	@2 50

Beans.

There has been some buying of beans this week and stocks have been still further reduced. The indications are that stocks will be well cleaned up by the time new beans come in. The market is now entirely bare of pea beans and kidneys are no longer quotable. There seems to have been no speculative buying on any line. Limas still continue to move more slowly than a few weeks ago.

Pea, good to choice, 100 lbs	$	——	@——
Small White, good to choice	3 30		@3 60
Large White	2 50		@2 90
Pinks	3 50		@4 00
Bayos, good to choice	3 65		@4 00
Red Kidneys	——		@——
Reds	6 00		@6 50
Limas, good to choice	5 50		@5 75
Black-eye Beans	3 00		@3 15

Dried Peas.

The demand for feed peas continues to be the chief feature of the market. The better grades are being traded in very lightly. Small Garbanzos are no longer in the market. Eastern peas are quoted at from $2.25 to $2.50.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	——	@——
Niles	1 50	@2 00

Hops.

But little business has been done in this market during the past week. Prices show a tendency to weaken. Some sales of 1904 hops have been made at 20 and some even at 19c. The growing crop is being talked of at from 16c to 18c, with some sales at the former figure. In California the quantity on hand is very light, while in Oregon the holdover crop is heavy. There is continued talk of a growers' pool in Oregon and such a movement will undoubtedly be favored by the members of last year's pool who are still holding out. Those who have been obliged to sell last year's hops at less than they were originally offered are expected to keep out of the pool, however. The present warm weather is expected to do much for the crops, both as to size and quality. It will also bring new hops into the market earlier than was expected. Estimates of the California crop range from 70,000 to 75,000 bales. The Oregon crop will go between 115,000 and 120,000 bales and the Washington crop between 45,000 and 50,000 bales. Sacramento valley hops are expected to come in about August 10th, while other California hops may not reach the market before August 25th. Reports from the country are generally favorable. The ravages of lice in some of the Sonoma county yards have been checked by the warmer weather. The Eastern situation continues about as last week. The holidays have interfered with business on the New York market.

Good to choice 1904 crop, nominal	20	@	23

Wool.

The California clip is now practically all in, though a few small lots are still held by growers in Humboldt county. But little is doing in San Francisco and prices are hard to establish. At Ukiah sales were effected this week at 27c and one at 28c. A small lot sold at Healdsburg for 29½c. There has been no change in the outlook for fall wool either on the coast or in the East.

SPRING.

Humboldt and Mendocino	27	@30
Northern, free	25	@27
Northern, defective	22	@24
Middle County, free	25	@—
Middle County, defective	20	@22
San Joaquin and Southern, free	20	@22
San Joaquin and Southern, defective	15	@18
Oregon, valley	26	@28
Eastern Oregon	16	@22
Nevada	20	@24

Hay and Straw.

There have been some changes in the hay market notwithstanding the limited transactions due to the holidays. Stocks of old hay have been considerably reduced with but little variation in prices. Receipts of new hay have not been heavy, but they have shown some improvement in quality. Heavier receipts are expected from now on, as is usually the case after July 4th. During the past week choice new Wheat hay has been quoted as high as $14, while some new Alfalfa, classed as "poor to fair," has been sold as low as $6 and $7. Prime quality second-cutting Alfalfa continues to be held at $10.

NEW HAY.

Wheat, good to choice	$ 8 50	@	14 00
Wheat and Oat	7 00	@	12 00
Tame Oat	6 00	@	11 00
Wild Oat	5 00	@	8 00
Alfalfa, prime	10 00	@	——
Alfalfa, poor to fair	6 00	@	7 00

OLD HAY.

Wheat, good to choice	$10 00	@	14 00
Wheat and Oat	9 00	@	13 00
Tame Oat, fair to choice	7 50	@	11 50
Wild Oat	6 00	@	9 00
Barley	7 00	@	10 00
Clover	6 00	@	9 00
Stock hay	5 00	@	6 50
Compressed	10 00	@	13 00
Straw, ₩ bale	80	@	50

Millstuffs.

The market for the general run of millstuffs has been of an inactive holiday character. Most varieties are fairly steady in price, owing rather to the attitude of the sellers than to any particular buying inquiry. Rolled barley continues to sag.

Alfalfa Meal, ₩ ton	$18 00	@	20 00
Bran, ₩ ton	21 00	@	22 00
Middlings	24 50	@	27 50
Shorts, Oregon	21 50	@	23 00
Barley, Rolled	20 75	@	21 50
Cornmeal	30 00	@	30 50
Cracked Corn	30 00	@	31 00
Oilcake Meal	33 50	@	35 00

Seeds.

The previous inactivity in the seed trade has been emphasized this week by the holiday quietness. Stocks are light and most varieties are firmly held. Flaxseed is particularly firm. Alfalfa seed is again quoted, the asking price being 11c.

Flax	$2 25	@	2 75
Mustard, Yellow	3 25	@	3 75
Mustard, Trieste	4 50	@	5 00
			Per lb.
Alfalfa		11	@—
Canary		6¼	@ 6½
Rape		2½	@ 3
Hemp		3½	@—
Timothy		5	@ 5½

Honey.

There has been no wholesale movement in honey this week and no new features have developed.

Extracted, White Liquid	5½	@—
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@—
White Comb, 1-frames	11	@—
Amber Comb	8	@10

Beeswax.

The export demand for wax continues without change. There is practically no domestic demand. Prices are steady.

Good to choice, light ₩ lb	27	@29
Dark	25	@26

Live Stock and Meats.

Owing to the general suspension of business during several days of the week, there was practically no large trading, and the situation, so far as it can be gauged, is as at last reported. The demand is poor, especially for beef and mutton. The hog market is believed to be in good shape, though probably not quite so strong as a week ago.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₩ lb	5	@ 5½
Beef, 2nd quality	4½	@ 5
Beef, 3rd quality	3½	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 180 to 200 lbs	5¾	@ 5¾
Hogs, large, hard, over 200 pounds	5¾	@ 5¾
Hogs, small, fat	5¼	@ 5¾
Veal, large, ₩ lb	6	@ 7
Veal, small, ₩ lb	7	@ 8
Lamb, yearlings, ₩ lb	8	@—
Lamb, spring, ₩ lb	8	@ 9

Hides, Skins and Tallow.

After easing off for a week or more owing to a combination of circumstances, hides may now be quoted about ½c. lower than heretofore. Owing partly to the semi-annual stock-taking and partly to the uncertainty of the Japanese demand for leather, tanners have not been buying hides. Dealers report that they would now sell their present holdings at ½c. less than a week ago. Tallow continues weak at previous prices.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	11½@—	11 @—
Medium Steers, 48 to 56 lbs	10½@—	10 @—
Light Steers, under 48 lbs	10½@—	10 @—
Heavy Cow Hides, over 50 lbs	10½@—	10 @—
Light Cow Hides, under 50 lbs	10½@—	10 @—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	11 @12	11 @—
Wet Salted Calf	12 @13	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₩ skin	1 50@2 00	
Pelts, medium, ₩ skin	90@1 25	
Pelts, short wool, ₩ skin	60@ 90	
Pelts, shearling, ₩ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

Although transactions have been light during the past week, the market is firm and the situation continues to favor sellers. Dealers seem convinced of their ability to control the situation, and do not anticipate any falling off in the demand as a result of the recent advance.

Bean Bags	$	5¼@—
Fruit Sacks, cotton		6½@7½
Fruit Sacks, jute, as to quality		6 @7½
Grain Bags, Calcutta, 22x36, spot		7½@7¾
Grain Bags, Calcutta, buyer June-July		—@—
Wool Sacks, 4-lb	32	@—
Wool Sacks, 3½ lb	30	@—

Poultry.

Owing to the holiday season there has been an improvement in the demand for good chickens, though there has been no advance in quotations. Receipts have been light in most lines. Good large young roosters continue in good demand. Friers are commencing to come in rather freely and unless of extra size are selling for the same as broilers. The market for ducks is very dull, the only sale being a forced one. Turkeys are in good demand under light receipts.

Turkeys, choice Young, ₩ lb	$ 24	@	26
Turkeys, live gobblers, ₩ lb	18	@	20
Turkeys, live hens ₩ lb	18	@	20
Hens, California, ₩ dozen	4 00	@	4 50
Hens, large	5 00	@	5 50
Roosters, old	4 00	@	4 50
Roosters, young (full-grown)	6 00	@	7 00
Fryers	3 50	@	4 50
Broilers, large	2 50	@	3 00
Broilers, small to medium	1 75	@	2 25
Ducks, old, ₩ dozen	3 50	@	4 00
Ducks, young, ₩ dozen	3 50	@	4 50
Geese, ₩ pair	1 50	@	1 75
Goslings, ₩ pair	1 50	@	1 75
Pigeons, old, ₩ dozen	1 25	@	1 50
Pigeons, young	1 50	@	1 75

Butter.

Fine butter is in good demand. The best creamery butter in 1½ and 2-pound cubes is in especially good request. There is an easing up on tub butter, as the storage season is practically over. Dairy butter is arriving in smaller quantities and in very poor condition, owing to the weather. If the present warm weather continues it will lead to an advance in creamery butter, and to a drop in dairy, as receipts of the latter are already in bad shape.

Creamery, extras, ₩ lb	20	@—
Creamery, firsts	19	@—
Creamery, seconds	18	@—
Dairy, select	18	@—
Dairy, firsts	17	@—
Dairy, seconds	17	@—
Mixed Store	15	@17

Cheese.

Cheese continues rather weak for most varieties. Receipts have not been heavy nor has the quantity been very high, owing to the hot weather. Late arrivals are not satisfactory for storing, owing to the fact that cheesemakers have rushed in stocks to take advantage of prices. Less California cheese has been produced than to the same date last year, but offerings of Oregon cheese will prevent any advance in price. Some large shipments have been brought to San Francisco from Coos Bay, but so far there has been no general movement of Oregon cheese to California.

California, fancy flat, new	10	@—
California, good to choice	9½	@—
California, fair to good	9	@ 9½
California, "Young Americas"	10	@12
Eastern, new	12½	@13½

Eggs.

Receipts are heavy, both local and Eastern eggs arriving freely. The market has been dull during the past week. Storage operations have ceased and the oversupply, together with the holdings, have placed the advantage with buyers. A firm feeling in California select is, however, manifested.

California, select, large, white and fresh	20	@21
California, select, irregular color & size	18	@19
California, good to choice store	16	@17
Eastern firsts	17½	@18
Eastern seconds	15	@16

Potatoes.

The feature of the week was a drop in prices which followed heavy arrivals of new stock. There has been very little output for the new potatoes so far, owing to the holidays. The quality is good, except in a few cases where there was damage by sunburn after the potatoes were dug. The size is good. There are some reports of potatoes being rushed in before being fully matured. There are probably not over five or six cars of old potatoes left on the market, and these will be taken as seed stock.

Cal. Early Rose, ₱ cental	60	@	80
Cal. Burbanks, ₱ cental	50	@	75
Salinas Burbanks	90	@	1 00
Chile Garnet, ₱ cental	65	@	75
White Potatoes, ₱ cental	60	@	1 00

Vegetables.

The market for Onions is fair with good receipts. Shipments out have not been large. Little Asparagus is coming in, but the demand is weak. Green Peas and String Beans are out of season, and both demand and supply are poor. Receipts of Tomatoes from Mississippi have come in in very poor shape, the result being that really first class stock is very firm at $2. For these there is a brisk demand. In some cases dealers have paid as high as $2 for Los Angeles Tomatoes to fill orders. The quality of the Los Angeles Tomatoes is good. There have been but small arrivals of Peppers and the demand has not been large.

Asparagus, No. 1 to choice, ₱ lb	5	@	6½
Asparagus, No. 2, ₱ lb	3½	@	4
Beans, Lima, ₱ lb	—	@	—
Beans, String, ₱ lb	2	@	4
Beans, Wax, ₱ lb	2	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	1 25	@	—
Egg Plant, ₱ lb	5	@	8
Garlic, ₱ lb	3	@	5
Mushrooms, ₱ lb	—	@	—
Onions, New Yellow Danvers, ₱ ctl	1 00	@	1 25
Onions, New Red, ₱ ctl	60	@	1 00
Peas, Green, ₱ sack	1 00	@	1 50
Peppers, Bell, ₱ lb	10	@	15
Peppers, Green, ₱ lb	10	@	15
Rhubarb, ₱ box	50	@	75
Summer Squash, per large box	30	@	50
Tomatoes, ₱ box or crate	1 25	@	2 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Owing to the holidays the market is very weak for left over fruit. Apricots are now coming in more freely in bulk, the smaller boxes being largely cut out. The quality is expected to improve from now on as the fruit from bay points and later from the mountain districts displaces the river apricots which have heretofore monopolized the market. Owing to the holidays, off quality fruit is very weak. Large transactions in bulk apricots are few, as canners and growers continue far apart in their views of values. Canners continue to confine their offers to $15 and under and many growers are drying their crops rather than accept these figures. Arrivals of Bartlett pears have been small at unchanged quotations. Peaches are in fair supply, the greater portion selling at from 50c. to 65c. per small box. Plums are in still larger supply than last week and the market is generally weak, the average arrivals being quoted at from 30c. to 65c. Figs are in good supply but clean up rapidly at the same figures as last week. Some fancy river figs in pay boxes have brought $1 per box. Berry receipts have been fairly heavy, averaging about 1200 to 1400 chests per day. These are selling well on account of the hot weather. Grapes are very scarce, the few arrivals being held at from $1 to $2 per box. Watermelons are now coming in more freely and are attracting a good deal of attention. Prices are expected to go down shortly as the Fresno melons come in in large quantities. Fresno arrivals so far are few and prices are not yet established. There is talk of abandoning the pound method of selling and of returning to the dozen method, and this will probably be done later in the season. A short second crop of melons is predicted.

Apples, choice to select, ₱ 50-lb bx	1 25	@	1 50
Apples, good to choice, ₱ 50-lb. box	1 00	@	1 25
Apples, fair to good, ₱ 40-lb box	50	@	1 00
Apricots, in bulk, ₱ ton	10 00	@	20 00
Apricots, ₱ box	30	@	65
Blackberries, ₱ chest	3 00	@	4 00
Cantaloupes, pony crate	1 75	@	2 25
Cantaloupes, ₱ standard crate	2 75	@	3 25
Crabapples, ₱ large box	75	@	1 25
Currants, ₱ chest	5 00	@	7 00
Figs, ₱ box	25	@	75
Figs, ₱ crate	50	@	1 00
Gooseberries, English, ₱ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ₱ crate	1 00	@	1 25
Loganberries, ₱ chest	3 00	@	4 00
Peaches, ₱ large box	75	@	1 25
Peaches, ₱ small box	50	@	65
Pears, Bartlett, fair to choice, 40-lb box	1 00	@	2 00
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ₱ crate	40	@	65
Plums, ordinary, ₱ box	30	@	50
Plums, Simoni, ₱ crate	65	@	75
Prunes, Tragedy, ₱ crate	40	@	65
Raspberries, ₱ chest	3 50	@	6 00
Strawberries, Longworth, ₱ chest	3 00	@	6 00
Strawberries, large var., ₱ chest	2 50	@	5 00
Watermelons, ₱ lb	2	@	2½
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

There is practically no change in the market this week. Stocks are light and there is very little doing locally. Prunes continue to clean up rapidly. A little firmer feeling is manifested in peaches and apricots seem to be a shade weaker. Very few large lots of prunes are changing hands, either from the growers or packers, owing to the general belief that prices will go higher shortly. Prices for new crop prunes are maintained on a 3c. basis for Santa Claras, with other being at from ¼c. to ½c. less. Nothing at all has been done in pears, which are unchanged since last week. Apples are entirely cleaned up. The new crop is expected to begin to appear about the end of July. No movement is reported in raisins, operators being disposed to await the final action of the Growers' Association.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6	@	7
Apples, extra choice to fancy, 50-lb boxes	7½	@	8½
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ₱ lb	5½	@	6½
Apricots, Royal, fancy	7	@	—
Figs, 10-lb box, 1-lb cartons	55	@	60
Nectarines, White and Stanwick, ₱ lb	5	@	5½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3	@	—c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4¼c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			5½c
Choice, 16-oz. Seeded			4½c
Fancy, 12-oz. Seeded			4¾c
Choice, 12-oz. Seeded			3¾c

Citrus Fruits.

Naval oranges are now out of the San Francisco market and are no longer quoted. The supply of Valencias continues fair. Stocks of these sell freely at quotations. Lemons are firmer in spite of an increased supply as the hot weather has improved the demand. Quotations for lemons continue as heretofore, but all shading of quotations to effect sales has been stopped. Mexican limes are very firm.

Oranges, Navels, choice to fancy, ₱ bx	2 75	@	3 00
Oranges, Navels, fair to good, ₱ box	1 50	@	2 50
Oranges, Seedlings, ₱ box	—	@	—
Oranges, Valencias, ₱ box	2 25	@	3 50
Oranges, Mandarins, small	1 50	@	1 75
Lemons, California, select, ₱ box	2 75	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 50	@	2 50
Limes, Mexican, ₱ box	4 00	@	4 50

Nuts.

Interest in nuts is chiefly confined to the future crop. There is but little stock of old nuts and no large buys could be made. Spot trading is, therefore, confined to actual needs, full quotations being realized in all cases. Buying of future nuts is generally subject to prices to be made Sept. 1st. The crop output is unchanged since last report.

Chestnuts, Italian, ₱ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	10	@	11
Cal. Walnuts, No. 1 hard shell	11	@	12
Cal. Walnuts, No. 2 hard shell	9	@	10

Wine.

There has been only a nominal amount of business done in wines this week, though reports are more favorable than last week. The volume of good wine of last year's vintage in first hands appears to be small. Large wholesale buyers, who a few days ago were talking as low as 14c. and 15c. for from fair to choice wine, are now admitting that 16c. and 18c. are possible figures. For choice round lots the latter figure could probably be obtained. Some common wine is still to be had at 13c. and 14c. Growers are as yet not disposed to meet the views of buyers, and few large lots could be had for less than 19c. or 20c. for red and 21c. or 22c. for white.

ALMOND GROWERS.—Suisun Courier, June 29: There is some talk of the almond growers of Suisun valley combining for the purpose of disposing of their crops on the agency plan, same as has been adopted by the Davisville Almond Association and other almond-growing sections.

Work and Worry.

It is sometimes a slight compensation for the man who is broken down physically or mentally, the man with early heart disease or kidney disease, or the neurasthenic, to boast that hard work was the cause of his undoing. It is a much more respectable cause than dissipation, or at least it would be if it were the cause. But the best medical authorities and hygienists believe that few men have ever been seriously injured by hard work properly done. It is hard work combined with worry or hard work performed in the wrong way that does the mischief in the majority of cases.

Of course there may be such a thing as too much work—too constant application without recreation of any sort; but even in such a case injury will usually show that there is a want of system which increases the hours of work and induces a state of worry and hurry. Some of those who accomplish the greatest tasks seem to have the least to do, and the reason for this is that their work is thoroughly systematized. The day is not begun with a despairing glance over all that must be done before night, and a hesitation where to begin. On the contrary, each hour has its appointed task; one thing is taken up, and for the time being the mind is concentrated upon that alone, as if nothing else pressed for the day. When this is done the next is taken up, and the next, and when night comes there is no accumulation of unfinished work, and no worry for the morrow.

It is the lack of system, the inability to concentrate the mind on the work of the moment that makes for failure and for breakdown.

Another reason why overwork kills is that the man willfully or ignorantly neglects the laws of health. He eats too much under the mistaken idea that food is needed to help him bear the strain. He neglects physical exercise in the open air, and the system becomes clogged with waste materials.

System, a quiet perseverance in taking up and completing one thing at a time, moderation in eating, one hour at least each day in the open air and seven hours sleep will enable a man to put behind him an enormous amount of work every day without hurt to mind or body.—Youth's Companion.

Valencia Late Oranges.

We are indebted to Mr. C. P. Teague of San Dimas, Los Angeles county, for a fine box of Valencia Late oranges out of a carload he shipped to this city last week. The fruit is fine—the kind that is especially in favor in this market at this time—and very creditable to the grower. One interesting feature of the box was a cluster of seven, within less than 3 inches of stem, and all full sized and fine.

GRAIN CROP LIGHT. — Yuba City special to Sacramento Bee, June 24: Reports came in to-day to the effect that the wheat was turning out five sacks to the acre on an average and that this was poor in quality, being shrunk badly from rust. The yield was expected to be light, but returns so far show that it is falling far below expectations. Sutter county had over 27 inches of rain the last season, and while it did not come in a bunch so as to drown out grain, it came at intervals sufficiently close together to keep the ground soaked through the entire season, causing rank growths of weeds and a smothering or choking out of the grain. At about the proper time this spring a very warm wet spell set in, producing rust. These conditions have done the mischief and will take thousands of dollars out of the pockets of the Sutter county grain raisers.

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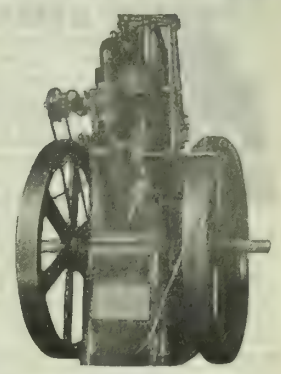
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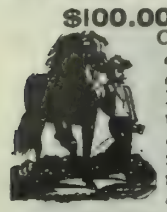
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FRUIT MARKETING.

Citrus By-Products.

By Dr. Vincent W. Baker, before the annual meeting of the Horticultural and Farmers' Clubs of Claremont, San Dimas and Pomona.

The subjects of citrus by-products is claiming the attention of thoughtful people all over California, especially among citrus fruit growers. The farmer is a manufacturer of finished and unfinished products and as such must follow the general trend of business methods, and if he wishes to be successful he must not allow waste to occur in any of the departments of his business.

Today every manufacturer is trying in every possible way to eliminate waste from his business and vast sums of money are spent each year in experiments to determine what may be done with waste materials, what new products may be produced which will enlarge the receipts of his business, so we ranchers, as progressive business men, must seek ways to dispose of our low grade of fruit. I believe every grower of citrus fruit recognizes the necessity of starting a factory for production of by-products and all that is needed is a few thousand dollars and an energetic body of capable men to push this matter to a successful issue.

In times past several ventures have been made along this line and most of them have been either a partial or total failure; but this is the history of most, if not all, new enterprises—those undertaking the pioneer work make mistakes or have not sufficient capital to properly carry on the work. We who are now taking up this work will be able to profit by the mistakes of those who have gone before.

Last fall work was started by some of the growers of this valley and a committee was appointed to investigate this subject of citrus by-products, and they have done much hard work and considerable time has been spent in getting information. After much careful thought the following plan has been recommended by the committee:

First—To organize a company with a capital stock of $25,000 divided into 2500 shares of $10 each. No one not a grower of citrus fruits to be a stockholder, as this should be strictly a growers' movement.

Second—An assessment of 10% of the capital stock to manufacture samples to be distributed all over the United States and Canada.

Third—A further assessment be made at the call of the directors of 75% of the stock, within two years, to put up a building and equip a plant.

It has been estimated that it will cost the following sums of money to carry out this work: Cost of building, about $5000; pumping equipment of plant, about $5000 or $6000; the balance to be used in maintenance of plant, filling first orders and advertising. When large orders come in and considerable money is required for a short time there will be no need for a large amount of capital, as the banks will furnish the money as is customary under such conditions. The committee has laid its plans before the directors of the California Fruit Exchange, also Mr. Woodford and Mr. Wilkinson, and they have expressed themselves favorably to this project and will do all they can to make it a success. They have promised to put our goods on the market through the sixty or more agents employed by the exchange, who practically reach every city and town of importance in the United States and Canada; no other company has had such a means of spreading its business and could not have without great expense.

This lack of facilities for putting their goods on the market has been the main cause of failure. The agents of the exchange know the trade handling the class of goods we propose to make and the firms know the exchange would not allow their agents to handle goods which were not strictly first class in every way, so that fact is in itself a very valuable advertisement.

The cost of these samples, freight advertising, rent of plant, etc., will be about $2500. The committee have investigated the plant owned by Bernard & Densmore of Los Angeles and have a proposition from Mr. Bernard to make up our samples. Mr. Bernard has had considerable experience in this business and makes several very fine lines of goods. He agrees to make a contract to carry on the manufacture of citrus by-products for this company for five years and to educate one or two men to do this work for us. Many of those present have sampled the marmalade put up by Mr. Bernard and possibly some of his other products and I believe they will agree with me when I say they are strictly first class goods. Mr. Bernard has a plant fully equipped at Los Angeles and the committee recommended having him do the manufacturing at Los Angeles for a year or a year and a half which will save us much expense on the start, and at the expiration of that time Mr. Bernard has agreed to come to Pomona or vicinity and carry on the work.

The following is the line of goods to be manufactured and cost of same, allowing one-half a cent a pound for fruit delivered at the factory:

Marmalade and orange butter, cost about 6¼ cents per pound, can be laid down in the Eastern markets in glass for 11½ cents and sells for 13¾ cents; in tin cans of 2½ pounds for 17 cents each or 6⅘ cents per pound and sells for 8½ cents. Marmalade put up in large tin cans is for the hotel and boarding house trade.

Preserved orange costs about 8 cents per pound. As yet none has been put on the market.

Glaced orange and lemon pulp used as a confection can be manufactured for from 7 to 10 cents per pound and sells at 30 cents.

Crystallized orange and lemon peel costs from 4 to 5 cents and sells at 8½ to 9½ cents per pound.

Dried peel costs from 2 to 3 cents and sells at 6 cents per pound.

Sliced orange and lemon costs from 4 to 5 cents and sells at 12½ cents per pound.

Lemon juice retails at $2.15 per gallon jug. The United States now imports $375,000 worth of the essential oils each year; why should this large sum of money go out of the country? It should be in the pockets of the growers of California. Citric acid and the different fruit juices can also be manufactured. Every effort should be made to use the fruit now rotting in our orchards or the washes or taking the place of better fruit in the markets, lowering the prices and possibly bringing us red ink instead of gold dollars.

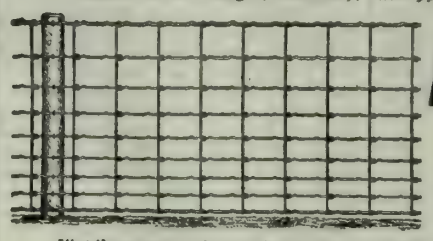
This business will bring in profits in three ways: First—One-half cent per pound for the fruit; second—a reasonable profit from the by-products, and third, higher prices for fruit sent to market.

All of the estimates given above have been made on a conservative basis, for we prefer to have the business a success from the start and cover all items of expense, and leave no loop-holes for failure to creep in. So far we have received subscriptions for over $7000. Most of the directors of our local exchanges are among the subscribers, but we need more growers to take interest in this matter if it is to remain in the hands of the people who raise the fruit and that is the place wherein it should remain. If we growers do not go on with this work some capitalists will step in, take away the chance we now have to make all there is in the business and offer just whatever price for our fruit they may be pleased to give us and we can either accept their offer or let our fruit rot in the orchard.

A few months ago a promoter offered the growers of this valley from ¼ to ⅛ cent per pound for their fruit, the ranchers were expected to subscribe $10,000 to put up a factory, the company would give little security, not even issuing stock to those subscribing the capital. Now, friends, we growers do not want such firms doing business in our midst, and the only way to keep them out is to start the work ourselves; and to make it a success, every grower in the valley should help this work along. It is not fair to leave the work to a half dozen men to do, but each rancher should do his or her share, sign up for stock and talk to your neighbors and get them to come in with us. Don't wait until next fall or winter to work, but start now and keep it up until we have the factory built and equipped.

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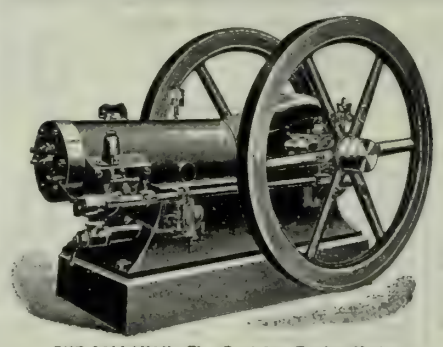
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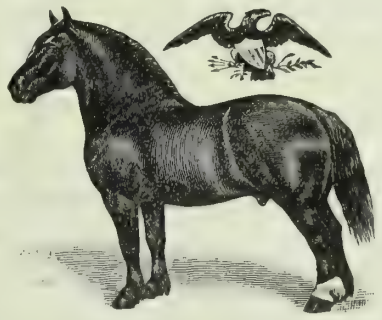
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SHEEP AND WOOL.

The California Sheep Industry.

By J. D. S. Taylor, Deputy State Sheep Inspector of Colusa county in the Williams Farmer.

Sheep-raising as conducted in the different sections of the United States is an entirely different proposition. Rules that apply in California could not succeed in other sections because of climatic differences. It would be impossible for the section east of the Missouri river to adopt our methods and succeed. The section between the Missouri river and the Sierra Nevada range employs methods in consonance with the climatic conditions prevailing.

The country is divided into three sections, which we will term the eastern, the middle and the western sections. In the eastern section, because of difficult conditions that exist, the cost of raising sheep is greater than in the middle section, where the same difficult conditions exist, but to a lesser degree.

At the creation one spot was selected as Nature's experiment farm, and that spot was California. There is no other country on the globe where Nature has exhausted her powers in trying to create an ideal stock country. In the East strictly scientific and systematic methods have to be applied or success will not be attained. The middle section is also adopting scientific methods. The Federal Government has established experiment stations under the management of the agricultural colleges. Constant experiment is going on and bulletins of procedure are issued, and the methods adopted by the experiment stations are put into practice in the business of sheep raising. Those methods are costly, but necessary to success.

In California "go as you please" rules are applied. "Catch as catch can" methods are in vogue; in fact almost "any old rule" will succeed if Nature is allowed to have its way, and if old impracticable methods that have become obsolete all over the world were discarded success would be more fully realized. California is not up to date in the science of sheep raising. The creation of two or more experiment stations in different parts of the State would encourage modern methods. The organization of sheep-growers' associations would be beneficial as a medium for diffusing knowledge, establishing mutton prices, and in other ways. Here in California the best methods are sometimes used, and when that is the case, even without organization, phenomenal success is realized.

It is not my intention in this paper to consider the question from an eastern or middle section point of view, but to consider it as conducted in Colusa county, where the same rules are followed that are employed in most of the other counties in the State. The past winter has been an exceptionally favorable one for the industry, and all have made money. When a hard time year comes around the prospect won't look so glowing. It is at such times that the ability of the sheep man is tested. The man that is not careless about the condition of his flock will be successful then. It is during the reverse seasons that more rustle and care in handling is demanded, especially here where the business is conducted on a large scale and where sheep are herded in large bands and are therefore more susceptible to disease than in other sections where small bands are the rule.

The industry in itself is one of the leading industries of the world. To realize its vast extent we must take into consideration the other great industries that are created as a result of it; the vast army of the industrial classes that are employed in the woolen factories, who produce the various fabrics from the fleece of sheep, that are used by mankind as protection from winter cold. The products of the fleece of the sheep are the only materials that are warm enough to protect man from winter's cold and cheap enough to be within the reach of all. There is nothing else that Nature has produced or that man has devised can take the place of the fleece of the sheep.

Flock masters who thoroughly understand the business and conduct it properly are being well paid for their efforts. There is no other branch of stock raising that will pay so well and quickly. If not properly conducted the flocks will become diseased and losses will result and the profit will be nil and success will not be attained.

The flocks of this part of the State have not as yet been afflicted with any very serious diseases. The most serious trouble that we have to contend against are "scab" and poverty. Both are easily prevented, but from lack of prompt attention at the right time are sometimes permitted to get such a strong hold on the flocks that very serious losses follow.

In parts of California entire bands have been destroyed by "anthrax." Geographical or climatic conditions may cause this part of the State to be immune from this dreaded scourge. If so, the sheep growers of this section are certainly to be congratulated. I am inclined to think that it is because of our beneficial quarantine laws that it has not been transmitted to us. We have had a few isolated cases of anthrax among cattle, but prompt action by our efficient State Veterinarian prevented its spread to other herds and to the flocks of this section. I wish to impress upon you the importance of being constantly on the alert for the first appearance of this disease in this section and the necessity of adopting heroic means to prevent it from becoming epidemic. I think that I can say with confidence that the disease has gotten to be so well understood by the veterinarians, who are so strongly supported by the State quarantine laws, that a general epidemic is scarcely to be feared.

To return to the ills that are so common and so easily prevented and cured, and are not prevented because of lack of proper effort—the sheep associations of the East and Middle West are adopting remedies for prevention, and discarding remedies for cure. They assume that an ounce of prevention is worth more than a great many pounds of cure. They contend that when a flock becomes diseased and has to be cured that costly loss is entailed.

To return to "scab." Statistics tell that the loss from disease and other causes of sheep in California the past winter was 98,000. We can safely assume that a very large per cent of the loss was caused by scab. What a pitiful sight it is to see a poor, innocent, helpless sheep with tags of wool hanging to it, alternately scratching itself for the scab and scratching in the dirt for a scant living. Poor thing! It has outlived its usefulness and when the storms come it will squat down behind a bush or a bank and accommodatingly die, relieving its owner of its poor scabby self. The owner is out of pocket $4—$1 worth of wool and $3 worth of sheep. Did I say it was a pitiful sight? It is cruel for the owner to allow it to get in that condition when a couple of dippings at a nominal cost will prevent it. Don't understand me to say that dipping is all that is necessary. It is especially necessary to quit corraling the band in old scab-infested corrals that have been in use twenty or thirty years and have become breeding grounds for scab. It is also necessary to change the band to fresh camps frequently. A "Dago" will travel on the road the year round. The "Dago's" sheep are always free from scab.

This brings us down to poverty or starvation, the most common complaints that the flocks are afflicted with and very much the worst. Poverty is induced by keeping the band in one camp too long, and in corraling in scabby corrals to prevent coyotes from getting an occasional sheep; better let the coyotes have some of them. Those killed by the coyotes do not poison the entire band. Scant feed and persistent corraling will poison any band with scab and poverty. Inattention and neglect during the hard times season of the year will cause serious losses. I regret to say that I have seen (on some occasions) a man and a band of dogs after a band of sheep trying to force them to stop and graze where there was nothing to eat, or comparatively nothing, and at night force the band into a muddy corral where the sheep are compelled to pass a stormy night, while the man and the dogs will be fed and properly housed so as to be ready for the morrow's chase. And it is kept up ad infinitum, or until it is a relief to the poor sheep to lie down and die.

The sheep is the most innocent and helpless of God's creatures. "The lamb, in all ages, has been deemed an emblem of innocence." Treat it right and it will run and play and evince its gladness and thanks by a satisfactory return of profits. Proper care and handling will always result in a pleasing bank balance. Don't be stingy with the sheep. An expenditure of a few hundred dollars will sometimes prevent losses amounting to thousands. The sheep is expected to do fabulous things for man, and will if allowed to do so by man.

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The Washington State Grange.

At Toledo, Wash., June 6, 7 and 8, the Washington State Grange held its annual meeting. The reports of the officers showed that the Grange in the State of Washington is in a prosperous condition, nine new Granges being formed during the year 1904–5, with membership of over 300.

The Master of the Grange showed the necessity of organization by the farmers if they would meet the organizations of capital. He cited instances where capital has combined to the great injury of farmers, giving as one case the harvesters' trust, which sells its products to Europe and South America cheaper than it does at home. He urged the farmers to adopt better business methods. He stated that the present condition of the Order in Washington is good, and that the prospects are brignt for still larger gains. He recommended that some measure be taken to protect the forests of the State and called attention to the international agricultural conferences which will meet in Rome. He pointed out the fact the work of the Grange is bearing visible fruit in the addition of the State Board of Education. The insurance features of the Order and its interests in good roads were also touched upon.

Resolutions and reports were adopted as follows:

Making the organization of Pomona Granges possible by fourth degree members.

Removing the clause which stated that at least nine Masters or Past Masters and their wives be included.

Recommendation by the Board of Education that school text books should contain more matter calculated to interest children in farm life, as the books in use at this time tend to instill in them a desire for the city.

Advocating a State text book commission instead of the present plan, whereby the county Board of Education selects the text books.

Stating that all members of the Grange should insist on their representatives in the Legislature working for appropriations for farmers' institute work.

Looking toward some general plan for systematic work in eradicating weeds.

Demanding that United States Senators be elected by popular vote.

Advocating a change in the present road law—that overseers be elected by the people instead of being appointed by the county commissioners, or that all road work be done by contract. The resolution cites that large appropriations are made for the improvement of rivers and harbors, and asks that State and National aid be given for the improvement of public highways.

Instructing the members of the Grange to do everything in their power to secure the referendum and direct initiative.

Asking the extension of the rural mail delivery, the establishment of postal savings banks and the parcels post system.

Recommending that rural mail carriers receive the salary paid carriers in the city.

The report of the finance committee showed the books of the officers to be in good condition.

The committee on agriculture reported that means for carrying on cooperative experiments between the State College and the Grange be made. That the College make free analyses of soils in the different parts of the State, the correspondence being conducted through the Grange. That a department of domestic economy be established in agricultural and public schools. That the Grange promote the establishment of experiment clubs, and that prizes be given for individual experiments and efforts.

A resolution was adopted favoring State control and inspection of seed, that purity and germination be certain.

FORESTRY.

California Sugar Pine.

Few users of wood in other parts of the world know that on the Pacific Coast there is a vast quantity of lumber comparable in all essential qualities with the best grades of white pine ever produced in the East. This is furnished by the sugar pine, a tree commonly found along the western slopes of the Sierra Nevada mountains in California. Even when compared with the giant "big trees" with which it often is found, the sugar pine is not a puny tree, but frequently reaches a diameter of 10 feet and a height of 250 feet. A single tree has been known to yield 54,000 board feet of lumber, and trees smaller than 18 inches are seldom cut at present. These facts make it evident that sugar pine lumber, in respect to the sizes furnished, is far beyond the eastern white pine—even the pumpkin pine of early days

The wood is scarcely distinguishable from white pine. It is practically of the same weight and the same color. It is somewhat more resinous, however, and perhaps a little brasher. It is soft, straight-grained, and easily worked. It is used for everything for which white pine is available, and is especially valuable for pattern work. The wood is already finding its way into the Eastern markets, and, while it is not at all likely that anything but the best grades can be shipped long distances, there is no doubt that sugar pine lumber will more and more replace its Eastern relative. There is no difficulty whatever in furnishing plank up to 4 feet in width and absolutely free from any defect, at a price that is low for material of that quality.

The cut of sugar pine lumber in California has increased from 55,000,000 board feet in 1900 to 120,000,000 feet in 1904, and it is estimated that there are 25,000,000,000 feet of it still standing.

Sugar pine does not form extensive forests by itself, as the white pine of the East once did, but grows with western yellow pine, white fir, incense cedar, and the "big trees." In northern California it is found at altitudes between 2000 and 6000 feet above the sea, and in southern California at altitudes between 5000 and 10,000 feet.

The tree produces a large quantity of seeds, in cones that often are 20 inches long. The seeds are large and edible, and consequently are sought by squirrels and other animals. The Indians also gather them to eat. On this account and because the seedlings are easily killed during the first five years by lack of moisture or proper shade, the sugar pine does not reproduce itself readily; but the lumber is so valuable that there is every reason why an effort should be made to replace the trees that are cut down by others of the same kind.

Bureau of Forestry studies made of its manner of growth indicate that this is entirely possible. A second growth of sugar pine may easily be secured by affording the forests in which the old trees are found reasonable protection, and by giving the young growth some aid in its struggle with the more vigorous competing species.

Uncle Sam Will Sell Wood.

New regulations to govern the use of forest reserves, says a Washington dispatch, are being printed and will be issued in a few days. The following rules as to the cutting of timber are taken from an advance copy:

In California no reserve timber may be sold without advertisement for competitive bids. Notices must be published for not less than sixty days in one or more newspapers of general circulation in the county, and also in Sacramento.

All forest rangers and deputy forest rangers are authorized, except in California, to sell dead timber in amounts not exceeding $20 in value, and all forest supervisors to sell dead or living timber worth not more than $100. A forester is authorized to make timber sales for larger amounts and to delegate this authority in special cases. All timber must be paid for either in full or in installments before it is cut. All money must be sent direct by the payer to a special fiscal agent, and not transmitted through the forest officers.

The period allowed for the removal of timber, which in no case will exceed five years, must be fixed in the agreement. The privilege of assigning any rights obtained under the sale may be granted only by a forester, and only in cases of emergency and when the transaction is not for the purpose of speculation. Timber from any forest reserve may be sold in any market.

In any sale involving more than $100 the purchaser may be required to give a bond to carry out his agreement. This bond will also cover the operation of a sawmill, if a permit for one is given in connection with the sale.

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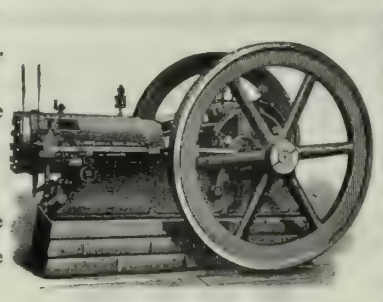
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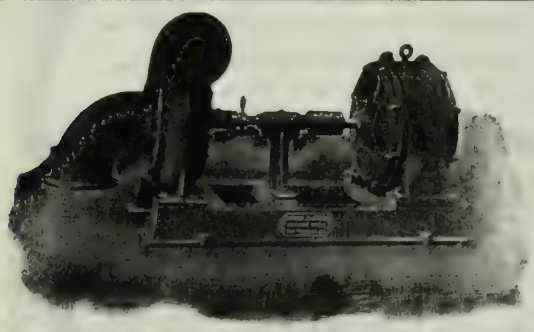
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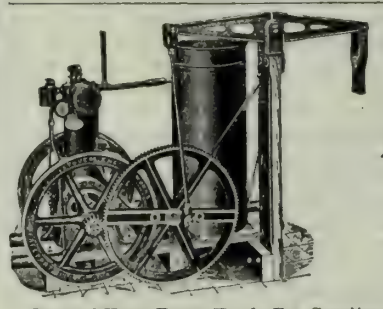
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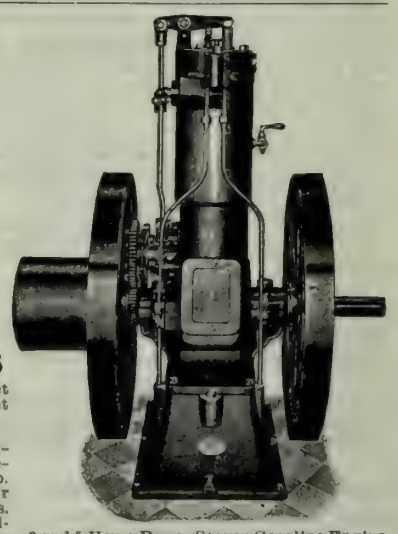


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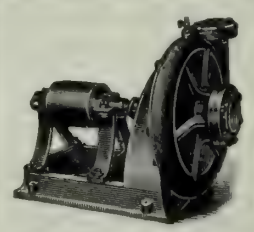
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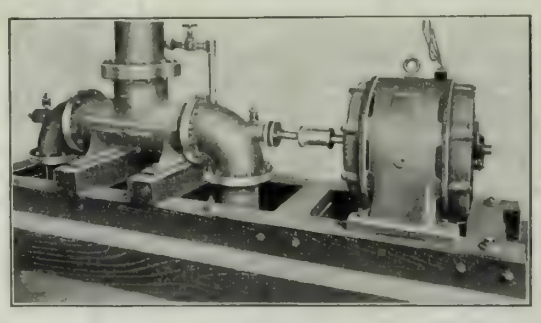
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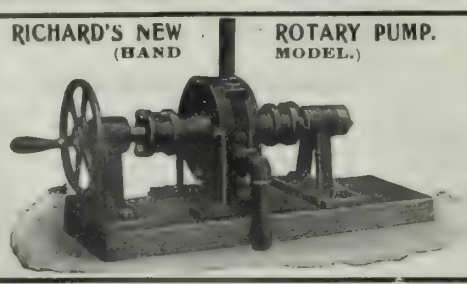
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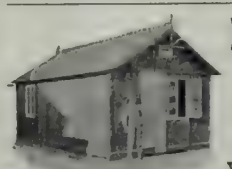
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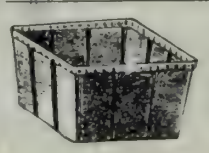
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 3. SAN FRANCISCO, SATURDAY, JULY 15, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

How an Island Was Saved.

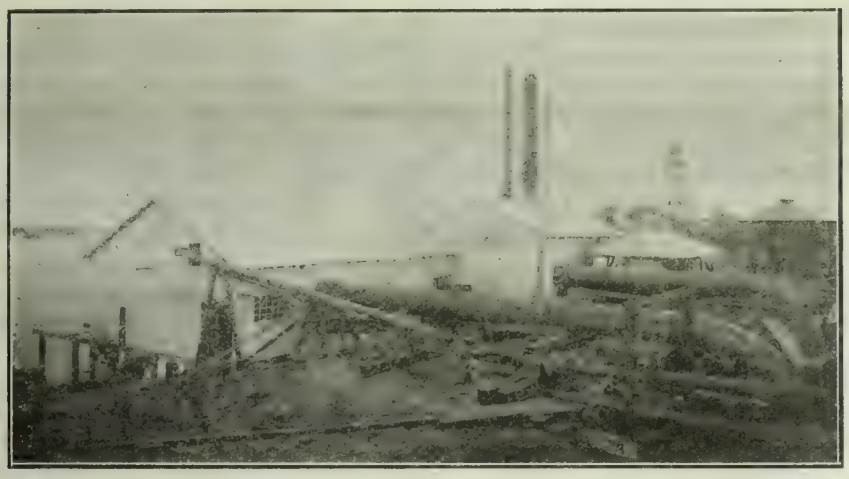
In continued redemption of our promise to set forth the startling facts of how the richest land in the State of California is saved from the overflow of our greatest rivers, we give a very interesting account upon another page of how Bouldin Island was saved from the waters and returned to productive agricultural area in a few months from the date of its complete re-submergence last autumn. It may disturb the distant reader to be told that in California, which is counted a semi-arid State, some of the best land is really drowned and has to be resuscitated, and that greater drainage questions are being worked out in California than in any other part of the world and being worked out more effectively. It is also interesting to note that in this State both in the bringing water to land which needs it and in removing water from land which has too much of it engineering is applied to agriculture with greater uniqueness and to a grander extent than elsewhere. For though Asia and Africa have perhaps greater irrigation affairs, there is no place in the world where there is such a grand combination of irrigation and drainage as in this State and no place where such great things are done against the force of gravity as in this State. Unquestionably, of the achievements with pumps, both to render land wetter and drier, there are none greater than those which California mechanical engineers have done for agriculture. These are not popularly known nor appreciated and we are pleased with the undertaking to give our readers information about them.

Upon another page of this issue there is a detailed account of how Bouldin island in the San Joaquin river was restored to agriculture. This island was long ago reclaimed and has a most honorable history for the production of unique and profitable crops and establishments for rendering them acceptable in distant trade. But Bouldin island had a mishap last year and it went again beneath the waters because they were unexpectedly high and aggressive. Bouldin island has, however, paid for itself too many times over to allow it to rest at the bottom of the lake which its new submergence inscribed upon the map of California. It was worth so much that the best achievements of our engineers could be profitably summoned to its restoration to the sunlight. How successfully this was done and how many unique things had to be undertaken to accomplish it are told in a very effective way upon another page of this issue.

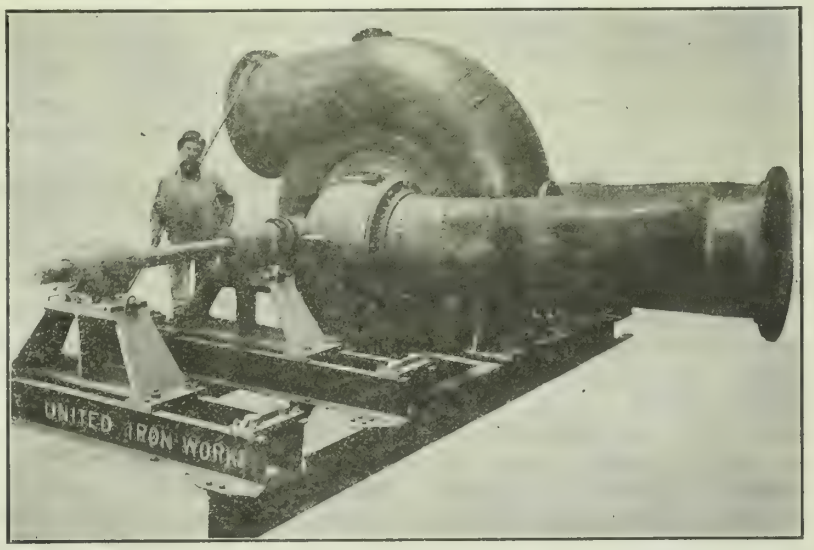
Upon this page is the art gallery of the enterprise, showing how the island was reclaimed when there was not even enough land in sight to erect a boiler upon to run the pumps, so that a steamer was anchored alongside to furnish the motive power. Great are the resources of our engineers who work for agriculture.



Pumping Plant Operated With a Steamer Alongside at Bouldin Island.



Bouldin Island Pumping Plant, Showing Flexible Steam Connection to Steamboat.



Indication of Size of Pumps Used in Land Reclamation in California.

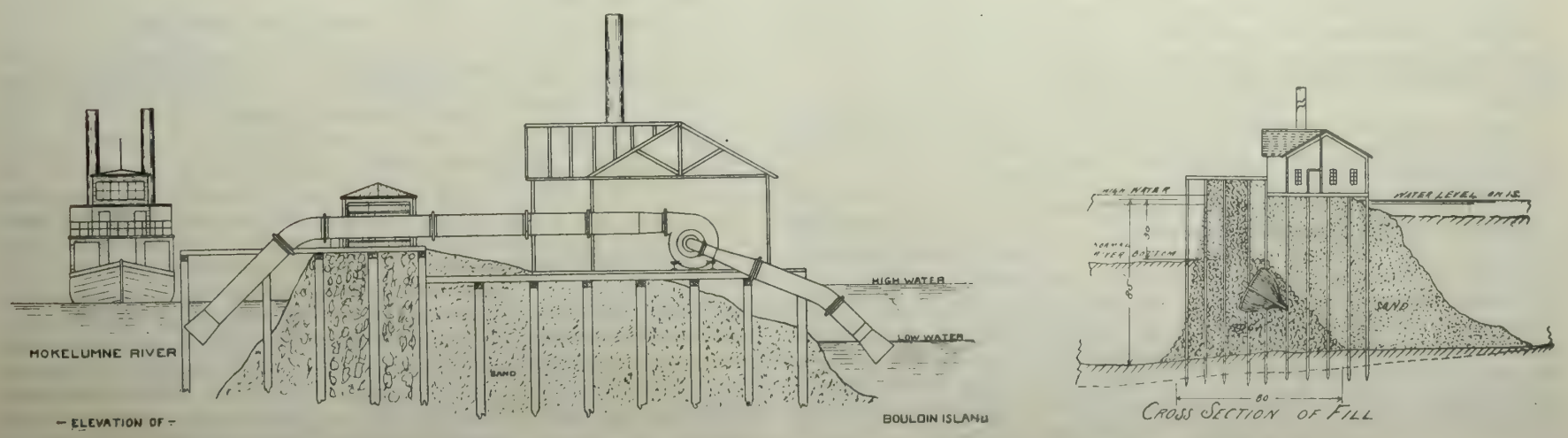


Diagram Showing Relation of Steamboat to Pumps and the Way a Ship, Rocks and Sand Were Used in Closing a Break in the Levee.

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SAN FRANCISCO, JULY 15, 1905.

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The Week.

The temperature has dropped to about the normal, but the aftermath of the heat is seen in serious fires which have done much damage in country, town, field and forest, and have given many of our friends strenuous days and nights in fire fighting. Fortunately, though individual losses have been great and call for sympathy, the fire fighters have usually prevailed and have set bounds upon the destroying agency so that very wide conflagrations have been averted. Perhaps the most notable observation of the week is the shortage in the grain crop. Some harvesters have turned back after starting upon their summer plans because the output was so poor. In some localities many fields will go uncut and many fields from which good grain was expected will yield only chicken feed and little of that. Rust and irregular moisture and temperature conditions have scored wider injuries than ever before perhaps, which is especially notable because the season's rainfall was fair. He who gathers good grain this year should get a good price for it.

On the other hand fruit is doing, on the whole, rather better than expected, and the trade is all that could be asked for a good product. Overland shipments are brisk and prices are improving this week. The total shipments are about twice those of last year and more than half greater than those of the great record of two years ago. The heat hurt some fruits by sunburn, but the total injury is probably less than its seemed when the temperature was up.

Visitors at the Portland fair express much delight with it, and Californians are patronizing it freely. It is also said that California has clearly the best of all the State exhibits. This will help along on the present publicity programme quite notably.

Wheat is advancing because of the unfavorable harvesting disclosures in this State and the unfavorable growing conditions in the Middle West. The immediate future depends upon how far the claims of shortage are made good by the time new wheat appears in larger quantities. Barley prices hold well and have improved since the passage of the heat made buyers more energetic. No export buying is yet being done, however. Oats are strengthened by a good demand and corn is strong with trade mostly on Eastern corn. Blackeye and pink beans have improved and Limas are in better shape and promising to clean up in advance of the new crop. Bran and middlings are in scant supply and unchanged. Hay is rather quiet. Meats are about the same, though firm, while hogs have advanced. Choice firm butter has had a great advantage and there is too little of it and too much of the other kinds. Cheese also suffered from the heat and the average price off a little. Eggs are advancing with a good outlook. Poultry has done well, though receipts have been considerable, both from local and Eastern points. Potatoes have been in less supply and are firmer, and onions are relieved by the passing of the reds. Much sunburned fruit has come to this market, and prices are lower. Oranges are unchanged, but lemons had a high run, as is usual in a hot wave, and continue firm. Dried fruits have about the same range as last week. Nuts are talked of actively, but little done in futures as yet. Honey trade is undeveloped and expectant. Hops are still indefinite, with control movements still urged. Wool transactions are in lambs' wool in a small way at high prices, with few contracts on fall clip yet made.

And so the tail must go with the hide, as in traditionary weighings. This, being interpreted, means that icing fruit cars is part of the railroad company's affair, and this gives one more chance for cutting extortion out of it. For it is telegraphed from Washington that Commissioner Prouty of the Interstate Commerce Commission has decided that icing charges of private fruit car lines are part of the rates on fruit carried, for the reasonableness of which the railroad is responsible. The decision was rendered in the case of the Michigan Fruit Growers' Association against the Pere Marquette and Michigan Central. It is a great victory for the fruit growers all over the country, both for what direct gain may come and for the assurance that shippers have some rights which car companies are bound to respect. It may also mean that there is one less cloud in the way of a clear look at the rebate question. The world does move—a little.

If we had more wheat this year it would be more interesting that Mexico wants wheat so badly that she has knocked off the duty until the end of August, and the railroad has reduced rates from San Francisco to El Paso nearly 50%. This is the proverbial farmers' luck to have nothing to sell when conditions favor selling, and about all the satisfaction Californians will have will be to see the trains go by with Oregon and Washington wheat. However, the demand may be so pressing in point of time to meet the free entry that our growers can sell what wheat they have better, and the local consumption can fill up on northern coast wheat later in the season. After all, it is a good thing to have a good market—it strikes somebody somewhere.

Superior Judge Shields of Sacramento has been traveling with his agricultural eye open as usual and, as usual also, has seen things and, as usual again, he comments upon them with judicial precision. He arrives at a distinction between California and Oregon which is very acute. In a recent interview he said:

"I feel as if I had actually discovered Oregon, for the reason that the character of the State was so new to me and so unlike what I expected to find. Oregon is an immense State, with great possibilities. Immigration flows within its borders in a steady stream and her resources are being rapidly developed. It is essentially a farming State, and the rural aspect is everywhere apparent. The Oregon farmer, while admirably adapted to his State's conditions, is wholly different from the California farmer. His agriculture, too, is unlike ours, being more primitive, less specialized and less scientific. The farmers in Oregon ride to church in farm wagons and drive draught horses. The California farmer, on the other hand, drives a standard trotter to a rubber-tired buggy.

And the judge would not have missed it much if he had added an automobile. The fact is that the California farmer started, perhaps, a notch higher up and has gone farther, but he is still a long way from his ultimate destination in the social scale, though he is going fast.

QUERIES AND REPLIES.

Stimulating Alfalfa.

TO THE EDITOR:—I am sadly in need of a fertilizer to make my alfalfa grow. I have been told that gypsum will make the alfalfa grow but will in time kill the soil for any crop. Can you inform me if this is true, or can you recommend any other fertilizer as better.—FARMER, Stanislaus county.

Gypsum is a good stimulant for the clover family, including alfalfa, and, if applied in advance of rains or flooding, usually produces a good effect upon the growth of the plant, but gypsum is not a plant food. It acts upon the soil in making the substances desired by the plant more available, but as it is not in itself useful it adds nothing to the fertility of the land. It is perhaps too much to say "that it will kill the soil for any crop." That observation is probably due to the fact that its effect is only temporary and it will minister to the more rapid exhaustion of the soil fertility. For this reason Eastern farmers, who some years ago were disposed to use gypsum in considerable quantities on their red and white clovers, have practically abandoned its use of late years. The growth of alfalfa is usually stimulated by the use of stable manure, or by the use of commercial fertilizers containing considerable nitrogen, but where the alfalfa root is colonized with bacteria, which have the power of taking nitrogen from the atmosphere, the use of fertilizers is seldom necessary; in fact, good, strongly growing alfalfa adds to the fertility of the soil rather than taking from it. There are some places in which these bacteria do not naturally occur and the growth of alfalfa is not satisfactory. You can introduce them by taking some of the soil from a field in which alfalfa is growing satisfactorily and scattering it upon the field which you desire to improve. There is also furnished by the seedsmen material containing the bacteria, with instructions as to how it should be applied to the plant.

Summer Treatment for Slugs—Tomato Dropping.

TO THE EDITOR:—Is there any known remedy to exterminate or check the Oregon slug, as it is doing a great deal of damage? I used lime last winter and spring for the slugs with some good results; but they get in the cabbage and lettuce and are hard to get at with lime. If there are eggs to be destroyed, I should think it would tend more to exterminate them.

I have a lot of tomato plants which are full of blossoms, but when the blossom wilts the stem breaks off. Is that a disease or the climate? I have been giving them hardly any water since they started to blossom.—AMATEUR, Berkeley.

The best way to check slugs at this time of the year is to refrain from surface watering and keep the ground finely pulverized with a hoe, rake or cultivator. Slugs can not travel in dry ground any great distance. If it is possible for you to keep a few hens in coops and let the little chickens run in the garden, they will clean the plants of slugs. We know of no application which is effective. If the plants need water, open a trench with the hoe, allow the water to run alongside for a time, then cover up the trench and keep the ground dry on the surface, as before.

Your tomato plants have been growing too fast. Although you say you have not watered them, there has been enough moisture in the soil to keep them growing so rapidly that the blossoms can not set, and this is always the case with the rapid-growing tomato plant. As the season advances the ground becomes more dry and you will probably have plenty of tomatoes.

Apple Leaf Aphis, Etc.

TO THE EDITOR:—I send some apple leaves with millions of small insects on the under sides, also a twig of small, deformed apples. Why are they so unthrifty?—AMATEUR, Oakland.

In the first place you have plenty of the apple leaf aphis, which you will find fully described in the PACIFIC RURAL PRESS of Dec. 17, 1904, page 384, as the "rosy aphis." It not only infests the young leaves, but the young fruit, and causes it to stop growing and to become gnarly and misshapen. You must attack this aphis very early in the season by spraying with an insecticide like tobacco, tea or kerosene emulsion, before it has a chance to multiply and destroy the leaves and fruit. Your twig also has some oyster-shell scale on it. The tree, evidently, needs pruning to force out new wood and winter spraying with lime, salt and sulphur to kill the scale.

Staking or Cutting Back Vines.

TO THE EDITOR:—I have a vineyard of Tokays now in their second year, which are growing rapidly, and which will probably be injured by the fall winds unless they are staked or pruned. Some growers advise staking, others say pruning only is necessary. I suckered and cut them back some in May, but they have put on very heavy tops since then. Staking is very expensive and I want to get along without, if possible. Do you think I can secure good Standards by pruning; and would the vines be injured by a heavy cutting back during July?—SUBSCRIBER, Acampo.

You will have to decide which you can best afford to lose; the cost of staking or the loss of sturdiness in the stem and roots. After the growth is made the leaves have an action to perform as long as they are green and active, and that is elaborating sap which returns laying up new wood on the stem and roots. If you cut away a large part of the top growth in July you lose that much stored up vigor in the vine and that much force for the next year's growth. You can undoubtedly get a strong vine sooner by saving that leaf action. Possibly such a strong grower as the Tokay can afford to sacrifice that. The test is the fact and not any theoretical notion about it. If people can show you good vines secured that way you are reasonably safe in following the method. If they only say it will do as well, it will be safer to go to some expense to save the growth and use the stake also to bring up the vines to good strong stumps. We are not yet convinced that stakes can be dispensed with unless it will do with you to grow the grapes on the ground.

Dormant Tops of Deciduous Trees.

TO THE EDITOR:—I am sending some small limbs cut from my apple trees. The leaves either failed to start or else amount to nothing on the ends of the limbs, but lower down the new wood starts again as if nothing had happened and comes on in a healthy manner; but this new wood is later in starting, compared with where the buds on the ends of the limbs grow. This trouble has almost killed a few of my trees, and nearly all of them are affected more or less; some varieties seem to be a little worse than others. I have had this trouble among my trees for several years, but this year it is worse than ever before. If possible, I would like to know what the trouble is, and a remedy if there is one.—ORCHARDIST, Los Angeles county.

Examination of the apple limbs you sent shows that no disease or parasite is present, but that the limbs are in normal condition except as to dormancy of the upper parts. This is caused by irregularity in the moisture and temperature conditions and has been unfortunately quite widely prevalent in southern California during the present year. The only reasonable treatment consists in cutting back the limbs to where a good new shoot appears. This will give the new shoot the advantage of more sap and prevent the loss of sap by distribution of it through the partly dried extensions. There are cases where the dormancy is only partial and growth will appear later, but it is usually much better to cut back at once to promising new shoots. In some cases unless this is done there will be a continuous die-back, which will result in the loss of the tree. Trees in this condition after starting need rather generous treatments. Be sure that the cultivation is good and the moisture is ample to continue the growth and enable the tree to make up for the loss of time at starting.

Aphis on Kale.

TO THE EDITOR:—Can you inform me what measures to take against scale on kale, the kind used for chicken feeding? It is a small green scale found both on top and under side of the leaves. It is creating a great deal of havoc with a crop which is otherwise doing nicely. I have inquired round about here in reference to same, but have not found any one who seems familiar with this scale and what measure to take against it.—GROWER, Petaluma.

Your kale is not infested with scale, but with the aphis, or louse, which is quite common upon various members of the cabbage family. This insect can be readily killed with a spray made of strong soap-suds or whale-oil soap, one pound to four gallons, or a decoction of tobacco stems, or with the kerosene emulsion; in fact, almost any of the insecticides which are commonly sold by dealers will be effective against this insect if it is applied with a good force pump. The various powders which are sold by poultry supply dealers for killing chicken lice can also be blown or dusted upon these insects with success. It is not a difficult insect to kill, but it multiplies in such numbers that one is obliged to attack it vigorously and to maintain the warfare.

Arsenic in Hops.

TO THE EDITOR:—I hear that some American hops are under condemnation in England because they contain more arsenic than the law allows. If that is so, how does the arsenic get into the hops and how can it be prevented?—GROWER, Sacramento.

The arsenic in the hops must come by sublimation from the burning of impure sulphur in the bleaching process, as there seems no other treatment of the crop which could produce the effect described. The safeguard, then, is obviously to use sulphur which is practically free from arsenic. We have heard of a case where one lot of hops had practically no arsenic and the other had a considerable amount where the same sulphur was used and this could perhaps be explained by the greater amount of sulphur evaporized in one case than in the other. There are probably cases in which it is undertaken to render defective hops more acceptable by a stronger sulphuring, and in this operation arsenic would accumulate, while in a light sulphuring it would be too small to be objectionable. It is not likely that the arsenic could come from the soil, because arsenic is exceedingly offensive to plants and perhaps one of the most destructive of all minerals to plant growth.

Powdery Mildew of the Apple.

TO THE EDITOR:—Will you kindly examine the twigs I send you and tell me what disease it is which afflicts them? To me, it seems to be related to peach mildew, for which I tried Bordeaux mixture, but without success. The disease has prevailed here many years, but is worse this year than ever I know of before. Whether this is on account of the unusually wet spring or because the trees have not been cut back, I would like to know. Perhaps both causes contributed towards it. Would the lime, sulphur and salt wash applied in winter be likely to prove effective?—GROWER, Pineridge.

Your apples are attacked by the powdery mildew. It undoubtedly has been far worse than usual this year, owing to weather conditions, as you suggest. The best treatment after the foliage appears is to sulphur thoroughly just as you would sulphur grape vines, except that the application should be especially to the new shoots where the disease is largely centered. Lime, sulphur and salt applied in the winter would be protective as against the resting spores of the bark, but it would also be necessary to watch and sulphur the new growth afterwards because the spores will come in freely upon the atmosphere.

Tomato Blight.

TO THE EDITOR:—Will you explain the cause and prevention of the disease of tomato plants, especially prevalent this year? The leaves start to curl and have a sickly appearance, while sometimes one side of stalk turns a brown color at base. Sometimes the vine commences to die at the base, the leaves turning yellow, and this extends upward until the vine is dead. The vines when pulled up do not appear to have very extensive roots, having but a bunch of fine roots 5 or 6 inches in diameter, although the vine is 2 or 3 feet high—nearly full grown. The fact of the vines having tomatoes on them does not make any difference, and Paris green placed around the roots seems to have no effect. I have lost two-thirds of the vines and many friends are making similar complaint.—GROWER, Fresno.

Unless you are trying to grow tomatoes on alkali land, it is probable that the plants are being destroyed by the bacterial blight. This disease exists in the soil and the minute organisms which cause it remain in the soil from year to year. There is no remedy. The best policy is to grow tomatoes on ground which has not recently been used for them, practicing a rotation which changes the location from year to year. No application to the soil nor to the plant is effective in this case.

A Bug on Strawberries.

TO THE EDITOR:—Inclosed you will find a bug or beetle which preys upon the strawberries, making the choicest and ripest unmarketable. I would like to know the name of the bug and the remedy for its extermination.—OLD SUBSCRIBER, Ben Lomond.

The insect is a true bug—that is, one of the hemiptera with sucking mouth parts, and for that reason not poisonable, even if it were safe to use poison on ripe fruit, which it is not. The name of the genus is largus. We know of no treatment except hand picking and crushing. The insect infests weeds also and all such which it is found upon should be destroyed so that it may not have them for breeding places.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 10, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather and abnormally high temperature prevailed nearly all the week, with light northerly winds. Maximum temperatures of 110° to 116° were reported on the 8th, in many cases being the highest ever known. Forest and field fires did much damage in Amador, Nevada and Shasta counties. Grain harvesting and thrashing and hay baling are progressing. The grain crop is much below early estimates in yield and quality, but the hay crop is excellent. Hops are making rapid growth. It is probable that fruit and grapes have been considerably damaged by the extreme heat, but it is too early to give reliable estimates of the loss. Fruit picking, drying and shipping continue. Apricots, peaches and plums are yielding very good crops, and pears are better than expected in some sections. Citrus fruits continue in good condition.

Coast and Bay Sections.

The highest July temperatures ever recorded occurred on the 7th, following several days of phenomenally hot, clear weather. The maximum at San Francisco was 98°, at Hollister 112°, at Cloverdale 115° and at Santa Rosa 109°. Cooler weather prevailed at the close of the week, with fog along the coast. The heat was beneficial to hops, corn and potatoes, but probably damaged deciduous fruits, grapes and sugar beets to some extent. Fires caused great damage to grain and pasture land in Monterey and Santa Clara counties. Grain harvesting and thrashing continue, with good results in most places. Hay baling is progressing rapidly and the crop is above average. Hops are in good condition and growing rapidly. Sugar beet harvest is in progress. Fruit picking, canning and drying continue and large shipments are being made. Grapes are rapidly ripening and a few are in market. Walnuts will yield a good crop in Sonoma county.

San Joaquin Valley.

Clear and very warm weather prevailed during the past week. Temperatures ranging from 110° to 115° occurred generally on Friday and Saturday, and previous records for warm weather were exceeded in many places. Several prostrations from heat are reported. The grain harvest is nearly completed, and the crop will be below the average. A good crop of apricots has been gathered, and drying is about over. Peach canning is progressing rapidly; the crop is fair and the quality is good. Large shipments of green fruit continue to Eastern and local markets. Watermelons are ripe and being shipped freely in carload lots. Some damage has been done to fruit and grapes by the hot weather. Stock are in good condition.

Southern California.

The weather was warm and clear during the week, with fogs along the coast and abnormally high temperatures in portions of the interior. The maximum at Riverside was 103°, and at Los Angeles and San Diego 86°, on the 7th. There are no reports of damage by the heat and it was probably beneficial to deciduous fruits, grapes and walnuts. The grain crop is being rapidly harvested and thrashed, and it is the best for many years; shipments will commence soon. Hay baling and sugar beet harvesting are progressing. Beans were not seriously damaged by the heat, and prospects are good for a large crop. Deciduous fruits, grapes and walnuts are making rapid progress and citrus fruits are in good condition. Lemon shipments are unusually heavy.

EUREKA SUMMARY.—Continued warm and dry in the interior. Oat hay cut and in shock; crop heavy, but considerable rust. Pears, peaches and small fruits are light and potatoes poor.

LOS ANGELES SUMMARY.—The warm weather benefited citrus fruits. Lemon shipments are brisk. Irrigation water is plentiful. Gardens and orchards are in good condition. Hay harvest is about over and baling is in progress. Apricots are a fair crop; drying has commenced in south.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 12, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.00	.09	.03	72	50
Red Bluff	.00	.00	.11	T	112	64
Sacramento	.00	.00	.00	T	110	56
San Francisco	.00	.00	T	T	98	54
Fresno	.00	.00	.00	T	114	60
Independence	.00	.00	.00	.02	102	64
San Luis Obispo	.03	.03	.00	T	104	50
Los Angeles	.00	.00	.00	T	86	58
San Diego	.00	.00	.00	.01	74	62
Yuma	.00	.00	.00	.07	116	72

THE VINEYARD.

Growing Eastern Grapes on the Pacific Coast.

The Eastern grapes do not command much attention in California in the face of the glory and variety of the European species, but there are some amateurs who still rejoice in the characters of the slip-skin grapes which they have known in their old homes in the Eastern States. These Eastern varieties are also the reliance in the upper parts of the Pacific coast where the European species has only limited success. Some Californians will then be interested in Eastern grapes discussed from a Pacific coast point of view as we find it in the last issue of the Northwest Horticulturist from the pen of a leading grower, Mr. A. Eckert of Detroit, Wash.:

The Beginning.—To start with the young vine, do not condemn it because it does not have a large woody top, as it should be cut back to not over two buds; see that it has a good root system; these need not be over 8 to 10 inches long or should be cut back to that when planting. Plant to first bud in depth, from the soil about the roots, leaving the top soil loose.

Pruning.—As the two buds grow and are 8 to 10 inches long, pinch out the tip of the weaker one, leaving the stronger to grow at will. The second season cut back again to two buds and continue as in the first year; the third year commence to train as desired. By all means do not make too much vine; secure a good strong foundation, or root system, to build your vine on, which can only be secured by severe cutting back of the top. Enlarge the vine gradually; when the vine has grown as large as it should be and thereafter pruned properly during its dormant season, no summer pruning is required or will it be of any benefit to fruit or vine; if you pinch or cut the tip bearing the fruit during the growing season numerous suckers will start growing vigorously (a sucker is a shoot or branch starting at the base of the leaf stem), thus your work is set at naught.

Under no circumstances, no matter what the season may be, do not remove any foliage expecting to hasten the maturing or ripening of the fruit; it will do the very reverse; all fruit requires shade to do its best, that is one of the uses of leaves. No fruit of any kind, ripened in the sun, is as sweet or as finely flavored as that maturing in its own shade. Do not go to the other extreme and have the vines under the shade of trees or shrubbery; plant in the open or on the sunny side of a fence or building.

Always prune and train so as to have free circulation of air and sunshine; keep the vine at its base free from weeds; never mulch, have the sun heat the soil where the roots are, and your fruit will ripen earlier than if the soil is shaded or overgrown with vegetation. After you get the young vine into bearing, in whatever way you have trained it, do not leave the bearing branch or arm permanently, but renew by replacing a shoot of the previous year's growth in its stead.

Varieties.—Now, as to varieties and purposes: If for a commercial vineyard, have a succession, but of few varieties, say Moore's Early and Concord. Green and red varieties are in poor demand.

If you are so situated that you can sell from house to house and know how to handle or grow the various choicest varieties, you can build up a profitable market, but where you are obliged to ship to a distant market you will want only such as are well known and in demand. For the home garden grow only the best, as the quality will more than make up for the imperfectly filled clusters.

For black have the Moore's Early; it is the very best of the early varieties, of good quality and size. It requires good rich soil. The Cottage is one of the finest of the black varieties; in size of cluster and berry and vigor of vine it equals the Concord, and is earlier and far superior in quality. The Island Belle is a few days later than the Cottage and earlier than the Concord, very prolific, vigorous grower, large cluster and berry extra fine quality. These three varieties are the cream of the black grapes and can be successfully grown by any one.

Of the red varieties by all means have the Delaware. It is the best in quality of any grape grown in any color; the berry is medium or small in size. Here, in the Northwest, it makes a compact bunch, free from mildew, and is as vigorous a grower as the Concord. Care must be taken, however, that it does not overbear, which it is inclined to do; it requires close pruning to prevent it. The Vergennes is of delicious flavor and is a great favorite wherever known. It is extremely vigorous; where an arbor is desired this is the vine to plant. Is of large berry and cluster, but it is almost impossible to make it produce a full, compact bunch or cluster; for that reason it is not desirable as a market grape. It ripens before Concord.

Of the green varieties we prefer the Niagara above all others. The vine is a very vigorous grower; bunch and berry large, quality very good. The Green Mountain is one of those choice articles done up in small packages. The vine is very vigorous, very prolific, earlier than Moore's Early; bunch good size, berry very small. These we consider the very best varieties for home garden; they are all healthy, vigorous stock, free from mildew, and do not require an expert to handle them. There are very many choice varieties of the Hybrids, but the locations are so scarce where they will do even fairly well that we do not recommend them.

Grafting.—If you have a vine already growing, of undesirable quality or ripening too late, have it grafted. To do this, clear the soil from the base, saw it off about 3 or 4 inches below the surface of the soil, split the stock, insert the scion as in tree grafting, using clay in putty condition or form instead of grafting wax; have two buds to the scion. Then mound up the earth carefully around it to the top bud of the scion; all sprouts should be kept removed. This requires great care so as not to disturb the scion or to remove the shoot from the buried bud of the scion. Should the scion start and then wither and die do not be discouraged; if the work is properly done it will start again.

Where you do not wish to remove the whole vine and have not room for another vine of the kind desired, a branch can be grafted by carrying it to the earth to be covered with soil where the scion is to be inserted; do not disturb it until the union is made beyond danger of breaking a part. Do this grafting just before the starting of the sap.

Fertilizing.—Chemical analysis has shown that western Washington soils are deficient in potash and that is readily noticed in the grape. Unless this element is supplied the fruit shells off before ripe.

It is the experience on the Eckert fruit farm that when muriate of potash is put on the ground at the rate of 200 pounds per acre every other year that the fruit not only stays on but ripens up firm and sweet. It is possible that some potash might be obtained by saving liquid manure from the barn, but on this fruit farm only the commercial potash has been used, and it would be useless to attempt raising grapes here without it. The cost has been about $3.25 per acre a year.

AGRICULTURAL ENGINEER.

Reclaiming of Bouldin Island.

We have promised information upon the interesting subject of saving rich lands from the interior rivers of California. How great is the undertaking sometimes involved and how creditable the results to engineering as applied to agriculture can be judged by the following account by Mr. J. A. Yeatman, M. E., of how a whole island was saved to agriculture:

The annual spring flood waters of the Sacramento and San Joaquin rivers of California are well known. The soil of the lower Sacramento valley is light and unsuited when formed into embankment to resist the force of these streams during flood season. During the past twenty years there has hardly been a year that one or more of these delta islands have not been completely submerged. The flood waters of 1904 reached their highest level in the latter part of March, with the result that Bouldin island, Tyler island Stattin island and Edwards island, containing 31,000 acres, were submerged, besides twice this acreage on the lower San Joaquin, which was not in such a high state of cultivation. The loss, measured in reconstructive cost and pumping on these three islands, amounted to about $800,000, together with the loss of one year's crop and the unmeasured sum of restoring the land to its former state of cultivation. On March 23, 1904, after contending with flood water for four days, the embankment near Central Landing, on Bouldin island, in a bend of the Mokelumne river, near where it joins the San Joaquin river, gave way, undulating the entire island of 7000 acres to a depth ranging from 7 to 12 feet.

This break is one of more than ordinary interest, owing to the fact that a part of the embankment was routed out to a depth of 97 feet below the river level. After the water started over the embankment, the opening continued to widen until it had reached a width of 700 feet, 400 feet of which consisted only of the surface levee, being washed away; the remaining 300 feet covered the real rupture to the depth of 97 feet, the bottom being defined by a stratum of clay.

Within a week the water had subsided sufficiently to begin the work of reconstructing the levee (repairing the break). The first attempt was made after the regular manner of repairing levee breaks on the river. This being a larger break than usual, seven dredgers were engaged, two of them being suction dredgers, an aggregation of 750 H. P.; the other four dredgers were clam-shell type, having 2½ cubic yard buckets. Night and day for thirty days these dredgers poured their material into the break, the result being that the 400 feet of levee on each side of the break proper was restored; the depth to bottom of break was now 85 feet and no increased effort could decrease this. As the current washed through and carried the material inward and as the tide went out the waters retreated, to have the operation repeated the next day. Further effort along these lines being futile, it was decided to change the method of operation. Accordingly, two floating pile drivers and two hundred 100-foot piles were secured, including three barge loads of brush mats. Two clam-shell dredgers were retained. In this second effort it was proposed to drive pipes in bents of six piles each every 10 feet apart across the break to sink brush mats, which would be held in place, in part, by the piles, thereby breaking the flow of the sub-surface currents, that material might be deposited and remain. Night and day gangs worked at this breach of 300 feet until the season was so far advanced that it became evident that the annual crop could not be recovered. Work progressed from each end with fair success until the last 60 feet was reached, when it was found that the current was so swift—due to the contracted passage—the depth so great and the supporting surface for the piles so meager that all hope of closing the same by this method had to be abandoned. Piles 14 inches in diameter, 100 feet long, driven into 10 feet of sand and into a stiff clay strata and anchored at the top, were readily torn away by returning current after a tide. This second effort occupied about three months, and, while not successful, was contributing to the final closing of the break.

In the third effort it was decided that nothing but rock would ever baffle this current. Accordingly plans were made to lay a base of 80 feet, and as the deposit increased in height to make it narrower. Contracts were made for rock and hauling and the work began. As the nearest available quarry was some 30 miles away, and a large barge load was such a small portion of the embankment to be made, the reader can form some idea of the cost and magnitude of the undertaking. About the time the first 20 feet of the base was in place it was decided to secure an unworthy sea-going ship of 25 feet beam and 250 feet in length to sink across the break, to intercept the current and assist in filling. The ship was secured and sunk on the island side of the break. The feat was accomplished with dispatch and success. From an engineering point of view, it is a question whether the results justified the use.

Depositing rock continued until within 40 feet of the surface, when, to expedite the work that a second year's crop might be secured, it was decided to drive two rows of piling 10 feet apart and fill in the intervening space with rock, thereby reducing the amount to one-third of what it was estimated was yet required. Work of piling was begun on each side and the filling followed after, when the piling was brought within 25 feet of each other. No further piles were driven until the rock work was well carried forward and brought up to 7 to 10 feet below the surface, when it was discovered that the current was so strong as to be actually able to carry the rock away. This was overcome by depositing the rock in a diagonal manner, so that the water could not enter except by reverse current, and in this manner the work proceeded until in November, 1904, eight months after the break, the same was closed and the river excluded. Suction dredgers were again set at work and reinforced the rim of rock embankment. Pile work now proceeded to reinforce the material that had been put in place and to provide foundations for the largest reclamation pumping plant ever placed on the river.

The break being repaired and the 20 miles of levee around the island being in condition to resist the external waters, the work of removing the water from the island was undertaken. It was estimated that the water to be handled was between fifteen and ixteen billion gallons. The height to which it was to be raised was from zero at initial pumping to 12 feet maximum, with a possible 16 feet at high tide. The average pumping head for the entire mass of this water would be about 5 feet.

The time apportioned to accomplish this work was limited to sixty days. There were several reasons why the time was so limited. Chief among these were that it was necessary to remove the water by March 1, 1905, that the 1905 crop would be available; further, it was desirable that the final pumping be done quickly, that the sun would not heat up the water and sicken the asparagus plants. Accordingly purchase was made of four large centrifugal pumps, to be direct connected to short-stroke, cross-compound, high-speed engines, and contract was made with the United Iron Works of San Francisco, Cal., for the installation of the same. Owing to the unstable condition of the embankment, where it was necessary to place the pumping plant to most effectively drain the island, it was a matter of first importance to drive additional piles for foundation. In addition to the many piles already driven, it was necessary to pile an additional area of 60x120 feet, and, upon examination, it was decided that, by using mechanically balanced engines, piles spaced 10 feet each way, securely capped and cross-capped, would afford ample stability to carry the load and resist the vibration. Such a foundation was prepared and proved to be all that was required.

Heretofore all the large pumping plants have been placed on the island side of the levee and have been placed so low as to permit the discharge pipes to pass through the embankment. This was impossible in this instance, as the water on the island was on a level with the water without. To cofferdam and provide a place was impossible, and the only thing to do was to install syphon plants, as illustrated.

Steam was supplied by a stationary plant of 550

H. P. and a river steamer (City of Stockton) having a rated capacity of 450 H. P. The river steamer was moored to the wharf and steam carried ashore through 125 feet of 8-inch pipe. As the tide varied the water level 3 to 4 feet twice a day, it was necessary to have a flexible connection between steamer and shore line.

With all pumps in operation the capacity was about 165,000 gallons per minute—equivalent to 10,000,000 gallons per hour. During the time of pumping no less than 6 inches of rain fell on the island, which increased the duty to be performed about 1,200,000,000 gallons. Fortunately, this rainfall occurred during the earlier period of pumping, thereby saving much in head effect. The oil consumption ranged from 60 to 110 barrels per day of twenty-four hours.

Pumping was begun December 8, 1904, before the plant was entirely completed. All pumps were in operation by January 10, 1905, and operated continuously for thirty days, after which time stops were made on first one pump and then another to lower the suction pipe. By February 15, 1905, the island was practically drained, although intermittent pumping was continued to July 1, 1905. Credit is due to Henry Voorman for foundations, to Walter M. Willet on problems of plant design and materials and to F. W. Langley, of the United Iron Works, on plant installation and operation. Upon these men fell the responsibility of the problems encountered, and to them belongs the credit of successfully performing a piece of work of larger magnitude and more serious import than the above words imply.

ENTOMOLOGICAL.

How to Fight the Grasshoppers.

Grasshoppers are unusually widespread this year and they are doing much harm. Every one in infested regions is anxious to know how to fight them. The following from Bulletin 142 of the University of California Experiment Station by Prof. C. W. Woodworth is very timely:

Grasshoppers are insects unusually difficult to control. They often occur in such overwhelming numbers that it is really impossible to do anything that will be effective. Fortunately, in California such numbers will be of extremely rare occurrence, on account of the very limited breeding grounds from which any particular swarms may come. While they will not with us be so absolutely uncontrolable, still it remains an extremely difficult problem.

Control of the Flying Swarms.—When grasshoppers come into an orchard after a true migration, the difficulty of the situation lies largely in the suddenness of their appearance, a fruit grower being quite unaware of the danger before the hungry hoppers have descended upon his crops. Usually, therefore, what can be done must be done very quickly. Available means can be grouped under the heads of "Driving" and "Poisoning."

1. Driving.—There is considerable evidence that the use of smudges, at the time that the insects are alighting, may cause them to pass over and beyond the protected fields. Usually this measure will not entirely protect the fields in which it is used, and becomes less and less effectual if the swarm comes slowly, as is sometimes the case, when they may be for hours alighting; or, on the other hand, if they come on successive days. In either of these cases smudging will not commonly drive enough away to be of material benefit. Under favorable conditions, swarms may in this way be so dissipated that the hoppers will not be in very destructive numbers in the protected fields; and perhaps if the swarm is not too large it will be prevented from doing material injury.

Since so many of the swarms in the State are of small size the smudging process is really quite an important addition to our list of available remedies. The method of smudging is to build fires on the windward side of the fields to be protected, making as dense a smoke as possible and so placing the fires as to keep the fields as completely as possible covered by the smoke of the smudge. It is also the practice to add from time to time small quantities of sulphur to the burning smudge piles. If care is had, this can be used without any danger to the trees. If sulphur is used, however, it should be clearly understood that there is more or less danger to the foliage, especially that of the younger plants, and that corresponding care must be exercised.

Another driving method is by frightening the insects out of the field by putting in a gang of men and, beginning on the windward side, gradually work back and forth across the field, thus scaring the hoppers ahead of them. The walking of the men through the field may be sufficient for this purpose, but commonly short sticks, to each of which a piece of cloth is attached, are used to frighten them more effectively from the plants, which may be at the same time jarred or lightly beaten. In this method, as well as in the smudging method, the idea is not to rid the orchard completely of the insects, but to drive out sufficient numbers, so that the remaining hoppers may not injure the plants to a serious extent.

2. Poisoning.—In addition to the method suggested above, more or less satisfactory results can be obtained by the use of poisons, either applied as a spray to the plants or in the form of bran mixture, described below. This method of poisoning will not be as effective against winged insects as it is against the drifting swarms, for which it was originally devised.

Flying insects are not as readily attracted to the bran mixture on the ground as are hopping insects. They are quite commonly in greater numbers and do their work more rapidly, and therefore the method can seldom be depended upon, if used by itself. It is, however, a very useful supplementary measure to that of driving, just referred to. It is possible that the use of poisoned paper placed in the vines or trees would prove much more satisfactory than the bran mixture, which of necessity must be placed chiefly upon the ground. At least, this is a point well worthy of investigation.

The papers used should not be glazed; newspapers or straw paper would be good for the purpose. The best way to treat the paper is to unroll it on the ground and apply the poison with a garden sprinkling pot. The arsenic should first be dissolved by boiling with four times its weight of sal soda, and then mixed with molasses. The proportions are: For each pound of arsenic, two gallons of water, four pounds of sal soda and two gallons of molasses.

Control of Drifting Swarms.—Cultivated ground immediately adjacent to the breeding grounds is always more or less subject to injury from drifting swarms, even when numbers are not sufficient to cause the true migration. The hoppers go into the fields slowly enough when drifting in this way to give plenty of time for the farmer to plan and execute the defense. The chief difficulty lies rather in the fact that very often hoppers will continue to drift out of the breeding ground for weeks at a time, so that the fight is a long continued one. The means that have been employed with greater or less success against drifting swarms consist of barriers, smudging, sacking, plowing in, poisons, and the use of the hopper dozer.

1. Barriers.—A great many plans have been tried to prevent the entrance of hoppers from breeding grounds. That which has been used on the largest scale in other countries (though we believe as yet not used in California) is fencing them out. Usually a strip of cloth a yard wide, reaching to the ground, will be found an effectual barrier as long as the insects are wingless. If a fence is used there should always be other means for actually destroying the insects, because otherwise they will be able to climb to the top of the fence and hop over. The use of the fence then, like all barrier methods, is a scheme for assembling the hoppers (thereby making their destruction easy) rather than a means effective in itself. These cloth fences, when properly managed, are probably the most effective of all the barrier plans. In connection with the fence, or even without the use of the fence, very good results are obtained by the use of furrows, in which the hoppers will accumulate and may be destroyed by dragging a heavy log along the furrow. Very commonly this furrow method is used without fencing, and has proven effective in this State in a few cases where the swarms were small but dense. The furrow should be plowed deep, with its steep or land side toward the ground to be protected; and it requires considerable and continuous attention to prevent the hoppers from passing over.

2. Smudging.—When hoppers are not too abundant, injury has been sometimes quite avoided by the use of smudging. The object in this case is to scatter the insects so as to prevent their eating up the immediate border of the fields adjacent to the breeding ground. Very commonly one or two rows of the orchard or vineyard will be destroyed and the trees or vines beyond remain uninjured. By the use of a smudge the hoppers can be, in part at least, caused to move on, so that by distributing their injury no trees or vines will be seriously eaten. Young hoppers do not "move on" as readily in response to the smudge as do the winged insects, and it may be necessary in connection with it to jar them from the trees and vines upon which they have gathered.

3. Sacking.—In almost every season that hoppers have appeared the sacking method has been resorted to with varying success. Sometimes the trees have died within the covering, sometimes the coverings have proved insufficient to keep out the hoppers, and at other times the plants, while appearing all right at the time the sacks were removed, have suddenly, after their removal, cast their leaves and lost their new growth, if not dying outright. The material used in sacking has been extremely variable, being sometimes as heavy as grain sacks. With our present knowledge and with the extremely variable results obtained, it is impossible to make any definite recommendation. At best it is an expensive operation, and will probably not be generally resorted to except as a protection to plants of more than ordinary value, or to newly set orchards where very small coverings will be sufficient to inclose the green parts. When this method is used, injury to the plants can be avoided by watching the conditions and removing the covering in the same way recommended in the case of vineyards plowed under. As soon as there is the beginning of any sign of yellowing of the leaves the covering should be removed and other means of protection resorted to. Whether there will be any of this yellowing will depend upon the condition of the plant and of the weather during the time the covering is on.

In removing the coverings the death of the plant can usually be avoided by a gradual instead of a sudden removal. Injury in case of a removal is usually or always caused by the tenderness of the foliage on the new growth, induced by the protection afforded by the covering. If the covering is gradually removed and the plant brought into the outside air a little at a time, the leaves will slowly adjust themselves to outside conditions.

4. Plowing in.—When the drifting swarm attacks a newly planted vineyard, it is sometimes possible to accomplish good results by covering the latter up by means of the plow, throwing a furrow over it from each side. This may prove perfectly feasible and efficient if the hoppers are moving in a distinct swarm and the source of supply is at a distance, or so located that the hoppers will not be likely to continue coming for a long period.

The only question will be that of the ability of the vines to retain their life beneath the ground long enough to allow the hoppers to pass by. The vines will ultimately be killed unless uncovered. The length of time that they can stay underground will vary according to the temperature and character of the soil. One can keep watch of the vines thus plowed under and uncover them as soon as he sees evidence of the beginning of injury. If by this time the hoppers are gone or have passed on, the method will be satisfactory.

5. Poisoning.—The most effective means for killing young hoppers has been the use of poisons. The method most commonly used is the bran mixture containing sufficient arsenic to kill them, and enough attractive, sticky material (as molasses or sugar solution) to hold poison on the bran. The formula used quite extensively this year was: Bran forty pounds, molasses two gallons, arsenic five pounds and water about six gallons. The whole was very thoroughly mixed and applied by means of a spoon or paddle, about a teaspoonful at the base of each vine or tree. The formula is often varied, sometimes by using twice or four times as much arsenic, but the amount here given is amply sufficient to kill. Indeed, it would probably be quite as effective if the arsenic were greatly diminished in quantity. The most important point in its preparation is the thorough mixing of the material. The poison may be well stirred into the liquid used or even into the dry bran, but in either case the mixing must be thorough before the bran is wetted, for otherwise the mixture will not be uniform. The best method is to mix the ingredients in the same manner that mortar is hoed or shoveled. It is quite possible that if the arsenic were first dissolved and its solution used in mixing, a greatly diminished dose of arsenic would be sufficient; but as arsenic is cheap, and the mixing of the dry powder is so much easier than making a powder that will require boiling, it is likely that the dry arsenic is the most economical.

In the use of this mixture it is well not to lose sight of its poisonous nature. Stock are particularly liable to be poisoned, so every precaution should be taken to prevent their eating it. Hoppers are not at once killed after eating it; they will usually show no effect of poisoning for several hours, and it may take a day or two before an insect that has had a poisoned dose will actually die—but they cease to eat long before death occurs. As far as could be estimated the rate of dying is as follows: After twenty-four hours, one-quarter of the hoppers are dead; in forty-eight hours, nearly one-half. Others continue to die after this, but at least 25% apparently fail to feed upon the poison at all. The reduction in number, even if it should not be over one-half of those attacking the vines, will in most cases be enough to prevent the destruction of the latter. When the hoppers are very abundant it will not do to depend wholly upon any one method of treatment, and so, while poisons are the cheapest and perhaps the most effective single means of treatment, it is advisable to supplement it with other plans.

The Use of the Hopper Doser.—When the hoppers are excessively abundant it will pay to use the hopper doser in the orchard or vineyard. It may be necessary to make one of especial size or shape for this purpose. It may be useful also to drive the hoppers more or less by the use of the cloth on the stick, as described above, the idea being to cause the hoppers to jump from the trees or vines onto the ground, or better still, on to the hopper doser as it passes. Quite effective work was done this year in the vineyard by three men—one driving the doser and two working along on the opposite side of the adjacent rows of vines, causing the hoppers to jump on the doser. The use of the hopper doser in the orchard is thus much more troublesome and really a good deal less effective than in meadow or pasture lands, but will undoubtedly pay well where hoppers are more than usually abundant.

The hopper doser is very simple in construction, consisting of a shallow, galvanized iron pan of any convenient dimension. Those in use last season under our directions were about 6 feet long by about 3 feet wide, with the edges turned up about 1 inch. These

pans are mounted upon wooden runners, 1 inch thick, shod with hoop irons beneath and having along their back a vertical screen of cloth intended to prevent the hoppers leaping entirely over the pan.

In the bottom of the pan crude oil is placed. This is usually prevented from flowing and splashing out by a layer of cloth, such as grain sacking. In front of this apparatus at a convenient distance, say about a foot, there is hung a light pole, which drags upon the ground and frightens the hoppers. As they jump into the air they are caught upon the pans and wetted with the oil. Very often they again hop out of the pan, but will usually have gotten enough oil upon them to cause their death. A great many die in the pans, so that they have to be emptied and new oil added from time to time. The amount of oil used is really a small item, however, and a great deal of territory can be covered in a single day.

THE POULTRY YARD.

Midsummer in the Poultry Yard.

To the Editor:—The summer care of hens may seem hum-drum sort of work to many, and, unless one has a love for the business, interest may flag. There are, daily, so many details to look after that one may tire of continual repetition. Yet, in this business, as in all others, success attends careful attention given to the little things. Analyzing the matter we come to the conclusion that there are no little things in life, for results of vast importance often hinge upon the observance of what are called trifling details

Winter and spring chicks are growing well if they have been well cared for. One imperative condition for constant growth and early maturity is an abundant supply of food of best quality. This must certainly be provided if coveted results are attained. Too many chicks, after they are six or eight weeks old, are left very much to shift for themselves. The best care that can be bestowed upon them is none too good. Keep the little ones growing; provide older ones with liberal rations and one will find the money expended well spent.

Green food is very necessary for fowls of all ages, especially during our dry seasons. It has, for many years, been demonstrated that alfalfa fed in the green or the dried state is a grand feed for fowls.

Ground Alfalfa.—If one cannot have the green grass, the hay—second, third or fourth crop—cut into ½-inch lengths and steamed will be found excellent. But the rapidly expanding business of grinding cured alfalfa into a very fine meal indicates that it is already used by large numbers of poultrymen. This business is yet in its infancy and will, in a few years, attain large proportions on this coast. Constant efforts are making for the improvement of the machinery used in grinding the hay, for, as yet, perfection in mechanical construction has not been reached.

Fed perfectly dry, or slightly moistened, lcear, or mixed with bran, fowls, young or old, will greedily partake of it; the youngsters will make rapid growth and mature fowls will lay a very gratifying amount of eggs.

On this subject we quote from an article which appeared in a recent Eastern publication: "The best alfalfa meal contains more than 18% of protein, while wheat bran contains a little more than 12% and clover meal from 6% to 7%. As protein is the most costly and most valuable of any feed stuff, it follows that alfalfa meal is more valuable than any other single feed, pound for pound. We are going into these particulars because we think it our duty to apprise our readers of the value of this feed which is easily obtained from poultry supply houses and is sold at a low price."

Incidentally it may be remarked that this meal, mixed with bran, slightly moistened, fed clear or upon hay cut in short lengths, will be greatly appreciated by cows and will materially increase the flow of milk. At this season of the year it will be found especially valuable.

Ranch Poultry.—Not a farm among the tens of thousands in our broad land but has its flock of poultry. What a vast difference it would make, in the aggregate, if, instead of a mixed multitude of hens to be found in a great majority of farm yards, some standard breed was kept. Better flocks, kept at no increased cost, would mean much larger returns in the sale of plumper fowls for the market and better eggs with which to supply the never ending demand.

How often do we see a lot of scrawny, ill-favored fowls which have been brought from the ranch to the store! Go into any country grocery and note the assortment of eggs which have been exchanged for goods or cash—of all sizes and colors. If any person could do that which would induce farmers to elevate the character of their flocks, such a one might well be called a friend to his country and a public benefactor.

Moulting.—July, and the hens are moulting. Now is the time, if ever, when they need extra care, both day and night, for the process of shedding feathers and replacing them is a trying one to the system. The method of hastening the moulting of fowls is not practiced to any great extent, the great majority of poultry keepers allowing Nature to have her undisturbed way during this period. In any event the hens must be provided with everything which will keep them in the best condition, if we expect to get even a fair supply of eggs.

The writer is inclined to think that, among other benefits attaching to the practice of dry feeding, that of more gradual and a better moult is not the least. From 80% to 90% of eggs in midsummer attests to the correctness of this theory—not theory alone, but demonstrated fact. The method of feeding fowls we adopt has much to do with the weight of the pocket book.

Early Hatching.—In a month or two quite a few early hatches will be taken from incubators. Not so large a percentage of fertile eggs will be gathered from the nests in the fall months as in the winter and spring, but the early hatched birds will be found to be of profit, in many instances. As regards the fertility of eggs, at any season of the year, the narration of the following experiments, conducted by parties in the East, may be of interest to some of the readers of the Pacific Rural Press: "When eggs from the hens that had been long and freely forced were placed in incubation, many of them were found low in fertility, or entirely sterile, notwithstanding the hens had mated freely with vigorous cockerels. The percentage of infertility was much greater than in eggs from hens that had been laying moderately.

"The question arises whether a large percentage of the chickens raised each year are not the product of the tardy and moderate layers that are comparatively fresh, rather than of the more valuable and persistent layers that have been hard at work all winter. If this is so, breeding from eggs as they are ordinarily collected, without knowledge of the hens that produce them, can but tend to furnish a large proportion of chickens from the poorest hens in the flocks. The cockerels as well as the pullets raised in this way furnish the breeding stock for next year and in this manner the reproduction of the poorer rather than the better birds is fostered."

Northern Progress.—It is to be noted that the poultry business in Oregon, Washington, Montana and other States to the north is brightening up in a wonderful way, as, indeed, it is all over the country. There will be a grand exhibition of fowls at the Portland Exposition, and Washington will make a fine showing at her State poultry exhibit this summer. They are making rapid strides there in poultry culture. The State of Montana produces, according to official statistics, between $1,000,000 and $1,500,000 worth of poultry and eggs every year. On the other hand, over $1,000,000 worth of poultry and eggs are shipped into that State every year from other States. Comparing our ideal poultry climate with that of other States, it is plainly seen that of all localities this of California is far in advance of any others and that, by force of circumstances, this business, within our borders, is bound to attain unthought of proportions in the grand future.

The following excerpts are from the remarks of James Dryden, at the State Farmers' Institute, Montana, last March: "My knowledge of the poultry business has been gained chiefly through experimental work at the Utah Experimental Station. Now, the profits vary in the poultry business just as the losses vary. We found in our experiments that it was just as easy to feed a hen at a loss as at a profit. The profits depend on many things. For instance, we found that no matter how we fed her, or how we treated her generally, the hen after she had lost her teeth was no profit-maker; she was a loss-maker. After she had lost her teeth she was like Dr. Osler's sixty-year-old man—the only way we could get anything out of her was to chloroform her. We found, on the other hand, that it was possible for a young, inexperienced hen, with a full set of teeth, to make $2 worth of eggs and more on about 60 cents worth of food."

A. Warren Robinson.

Napa, Cal.

HORTICULTURE.

Propagating Cherry Trees.

Mr. Louis Remlinger of Vancouver, Wash., gives the Northwestern Horticulturist an outline of his experience in growing cherry trees which will interest California propagators. Of course Mr. Remlinger's remarks about location, etc., are written for the somewhat different conditions of the north coast region: "Probably one of the fruits most difficult to propagate is the cherry tree. One of the principal reasons why there is more or less failure is because the location is unsuitable for the purpose. A suitable locality may be found in a southerly hill slope near some river or lake composed of a gravelly soil or a clay admixture or a clay loam that is well underdrained. After the soil is prepared, which should be summerfallowed the previous season, the soil should then be well prepared in the early spring by deep plowing and thoroughly pulverizing with the harrow, when the ground is then ready for the seedlings. These are usually home grown, or can be secured through importers from Europe, and should be at least two-sixteenths of an inch at the collar, of either the Mazzard or Mahaleb variety. After setting out the seedlings in rows about ten inches apart in the rows, and having the rows four feet apart, they should then be thoroughly cultivated all summer and kept free from weeds until the time for budding, which is about the middle of August, or when there is a vigorous flow of sap, and the buds are suitable, but budding should never be attempted until the buds are sufficiently ripe, which is best determined by a dark brown color, which the buds should have, when they will do. In a great many instances unripe buds are the cause of a poor stand of trees. Another reason why there is much failure in propagating cherry trees, and one of the principal ones, is the using of too large a bud for the stock, especially when the buds are taken from bearing trees. Seedlings should therefore be very vigorous, as the buds from bearing trees are generally wide and flat, and cannot be properly inserted without bruising either the bud or the bark of the stock. Buds are obtained from known bearing trees, or are taken from the nursery rows; but in the opinion of the writer, after a variety is with a certainty established in the nursery row, it is much safer to use such buds than to trust to Tom, Dick and Harry claiming that they have the genuine. or kind that is sought after. This is equally true with other fruits. After the buds have become set, and the string or raffia has been cut, the buds will remain in a dormant condition until the next spring, when the stock should be cut off about an inch above the bud. All those buds not having taken can then be detected, by the buds being somewhat dried up or being black. The usual method pursued in this case is to cut off all the stocks where the buds are alive, and grafting over those that are not cut down. The usual mode of tongue grafting is performed the same as grafting other trees, using a waxed cloth cut in short strips so as to completely cover the cut. After the buds and grafts have made a growth of say two inches or more the stocks should be stubbed, which is done with a sharp knife by cutting the stocks on a slant, cutting very close to the back of the bud, so they will completely heal over."

Papaya Products.

The semi-tropical pawpaw, which is quite different from the pawpaw of the Eastern States, grows and fruits well in strictly thermal situations in southern California, and to those who have the trees the following extract from the annual report for 1904 of United States Consul A. J. Lespinasse, Tuxpam, Mexico, will be interesting:

Papaya juice is extracted from the fruit of the pawpaw tree (Carica papaya), which grows rapidly, attaining its full-bearing capacity in a year. It produces from forty to fifty pawpaws of a dark-green color, ripening to a deep yellow, in shape resembling a squash. A very light superficial incision is made in the fruit, from which exudes a clear water-like juice, which, on exposure to the air, becomes opaque. As it drops from the fruit it is received in a porcelain-lined receptacle. As it is very corrosive, metal receptacles would injure its appearance and qualities. It possesses great digestive virtues, and the refined article is considered superior to all animal pepsins.

After the desired quantity has been collected the juice is placed in shallow porcelain or glass-lined pans and allowed to evaporate. While this is not a very delicate or difficult operation, it requires considerable attention, so that the juice will dry uniformly and the product be white and well granulated. In its granulated state it is shipped to the United States, undergoes a refining process, and is sold as the pawpaw of commerce for medicinal purposes.

The ripe pawpaw is palatable, and an excellent aid to digestion. Meat wrapped in pawpaw leaves for a short time becomes quite tender without any impairment in appearance or taste.

In extracting the juice the hands should be protected by rubber gloves, as in its crude state it attacks the tissues. An average tree will produce about one-fourth of a pound of the granulated juice. It sells in the United States for from $4 to $6 per pound in the crude state.

Federal Labor Test.

In order to test the capacity for work of Italians, Chinese and Japanese, and also the contract method of securing and handling laborers, the Panama Canal Commission has decided to import 2000 men of each nationality for a 500-day contract, subject to renewal. Proposals for furnishing these laborers soon will be issued. The number of 2000 was chosen because of being the aproximate capacity of one ship at a time. The laborers will be furnished by contractors, and will have to be delivered before the 1st of December next. The Government will furnish free hospital and medical attendance, unfurnished quarters, fuel for cooking and water. Under a recent decision of the Attorney-General laborers will work eight hours a day.

The class of laborers going to the isthmus will not be entitled to enter the United States, because of an Act of the last Congress which made the immigration laws of the United States applicable to persons coming from the canal zone to the United States.

Agricultural Review.

Butte.

ALFALFA. — Gridley Herald, July 7: J. M. Graham, who bought a tract of land near the Butte county canal this spring, reports that on July 1 he sowed a portion of his place to alfalfa, having run water over the ground first, and by the 5th the young plants were coming up.

Contra Costa.

SAND LANDS.—Antioch Ledger, July 8: The interest being manifested in asparagus raising at present and the fact that preparations are being made to further increase the acreage, is causing inquiries to be made concerning the kind of land required, if tule was the only sort on which asparagus could be successfully grown. M. I. Roche located on a piece of sand land 3 miles east of Antioch seven years ago, and not understanding the nature of the soil experimented for three years with barley, raising about four or five sacks to the acre. This proving unprofitable, he turned his attention to raising White Australian wheat hay, which proved successful, and he now raises from two to five tons per acre and sells from $10 to $15 per ton. Two years ago he began experimenting with asparagus, starting with half an acre, and last year from that small plot of ground in two months cutting he sold $65 worth of asparagus. So successfully did this mature that one stalk measured 6½ inches and weighed 9½ ounces. Specimens from this land were sent to the Portland Fair, which secured a gold medal for Mr. Roche. Next February he will plant fifty acres to asparagus.

Fresno.

CANNING STARTED. — Fresno Republican, July 8: The canning season is in full swing and the fruit ripening fast. Peaches are reported two weeks earlier this year than last. The Griffin-Skelley Co. started as early as June 28th, but in a small way, on Fosters and Tuscan clings. The house is now running at about half capacity, employing about 250 hands, but in a few days when the Orange clings, the staple canning peaches, come in, the plant will be running at full swing. The California Canners' plant in this city did not begin operations until the 1st, handling Early Crawfords and Tuscan clings. It is employing 400 hands, and as the season progresses will increase the crew to 500; most of these are women and girls. The fruit this year is reported to be of fair quantity and good quality. Neither cannery announces the prices it is paying, that being a matter of individual barter with the grower, according to quality, quantity, time of delivery, etc. But it is known generally that peaches are bringing good money this year. The market is said to be clean of canned fruit, and prospects for a large consumption are good.

Kern

ALFALFA.—Kern County Echo, July 6: H. G. Kincaid of the Weed Patch country says that never before have the crops in his section looked as well as they do this year. The second crop of alfalfa is all in the stack and the third is nearly ready to cut. The first crop made about a ton of hay to the acre and the second went better than a ton and a quarter. Mr. Kincaid expects that the next crop will beat a ton and a half. In all he counts on six crops at an average yield of more than a ton and a quarter, or between 7½ and 8 tons per acre for the season. Dave Knight, one of Mr. Kincaid's neighbors, has recently finished baling the second crop of alfalfa from a 60-acre field and it weighed out 125 tons. This is over two tons per acre for a single crop. Mr. Knight's third crop is now knee-high and soon will be ready to cut again. Lige Young planted corn in March and it is now in full head. This is pretty early to plant this variety of corn and the field was attacked by weeds. Mr. Young plowed his corn twice and hoed it once; it is now perfectly clean and a bountiful crop is certain. The fruit crop looks as well as the alfalfa, and Mr. Kincaid has peaches that are as big now as the fruit on the same trees was last year in August, when it is due to ripen.

Kings.

MELONS. — Hanford Journal, July 7: The first car of watermelons to be shipped from this part of the State to the Portland Fair will be from Kings county and leave early next week. Paul Perenich, the well known fruit buyer, is the shipper.

Merced.

WHEAT HARVEST.—Merced Express, July 8: Wheat harvest is in full blast throughout the county and in most sections is turning out poorly. The average yield, so far as heard from, is about four sacks per acre. On one ranch two harvesters, in operation all day and cutting over the average area, gathered but 96 sacks of wheat. One farmer who started to harvest his crop after two days stopped and ran his machines in the shed. The yield was but two sacks per acre. The barley crop is fair and turning out better than was expected.

Monterey.

BARLEY BURNED.—Salinas Index, July 7: Fire starting on the Paul Talbott ranch, across the river from Clark City, destroyed 400 acres of the grain, principally barley. After crossing the Talbott line the fire spread to the Franscioni Bros.' ranch where a conservative estimate places the loss at 1700 acres. Most of the grain was threshed and stacked in the field, and it is believed that some of the barley in the heart of the stack may have escaped scorching, but this will be a very small percentage, and most, if not all, will be lost. Both of the heavy losers had their grain insured.

APPROPRIATION TO FIGHT CODLIN MOTH.—The board of supervisors at Santa Cruz has appropriated $750 to fight the codlin moth in the Pajaro valley.

Orange.

APRICOTS.—Los Angeles Examiner dispatch from Santa Ana, July 8: Gathering of the apricot crop is now in progress in a small way, but next week will bring the rush of the season. The fruit is from one to three weeks late in ripening. The crop is somewhat larger than was at first predicted, those being in a position to know estimating the output at 1½ ton of dried apricots to the acre. The fruit is exceptionally fine, being firm and well matured. Pitters are being paid 20c a hundred pounds.

Placer.

FRUIT DAMAGED BY HEAT.—Special to Sacramento Bee, July 8: The heat of the past week has caused extensive damage to the orchards and vineyards in the foothill section of Placer county. Reports from all quarters are heard of the injury to the grape crop. The Flaming Tokays are especially hurt. It is truly stated that 50% of them are lost, and some do not hesitate to say that 50 per cent of the entire grape crop is lost. Many claim that the Cornichons, Muscats and others are seriously injured. The plum crop is also showing some damage. The picked Ogons are badly hurt, but they have been mostly gathered. Kelseys, Japans, Burbanks, Hungarians and others have been somewhat affected. Pears and peaches show no damage. Some Bartlett pears are now coming in, for which $1.75 per box has been offered.

EXPERIMENTING WITH ALFALFA.—Special to Sacramento Bee, July 7: L. L. Chamberlain of Auburn, who owns a large acreage of grain land in the Lincoln district, has begun experimenting to determine whether alfalfa can be grown with success in that district. He has planted twenty acres along the banks of Coon creek and installed a pumping plant to flood the alfalfa ground. If the wheat land is not too porous, which would prevent the water from spreading, Chamberlain will build a large storage reservoir, sufficient to irrigate 200 acres. The experiment is being watched with interest by hay and grain men.

Sacramento.

FRUIT CONDITIONS.—Following is a comparative statement given by George B. Katzenstein, manager of the Earl Fruit Co. of Sacramento, showing the shipments of fresh deciduous fruits by carloads up to June 30 for the last three seasons:

	1903.	1904.	1905.
Cherries	208¾	207	78¼
Apricots	222½	93½	272
Peaches	128½	93¾	284
Plums	224	118	524
Pears	2¾	2½	4
Apples, etc.	1½	3¼	¾
	788	518	1,181

This shows that the shipments to date mentioned, June 30, for 1905 are more than double those of last season, and very nearly equal those for 1903 and 1904 combined. Cherries proved a great disappointment in quantity, though the prices were the best ever known. The pear output will be under the normal, but peaches, plums and apricots have been over full volume, and many more could have been shipped had it not been for the danger of flooding the market. The early varieties of grapes were slightly injured by the frost of March 30, but in most districts have rallied and will prove a fair crop. The outlook for shipping grapes, such as Tokay, Cornichon, Emperor, Muscat, was never more promising. The shipments in the past were as follows: 1902, 1017 carloads; 1903, 1785 carloads; 1904, 1395 carloads. Last year was an off season in all varieties of fresh deciduous fruits.

San Bernardino.

APRICOT DRYING.—Redlands Review, July 8: Apricot drying is on at the Gregory dryer west of Redlands. More than 350 workers are daily employed. The fruit is smaller than was at first thought, but the output will probably be as large. Prices prevailing are much less than last year. Not a portion of the apricot is lost or destroyed. After cutting the fruit it is placed on trays, put in sulphur bins, dried and cured and then sent to the packing house. One ton of dried fruit is obtained from about 6½ tons of green. Even the seeds are saved. They are placed in the sun, dried and later shipped north, where they are made into oil and the husks are utilized for fuel.

San Diego.

DRYING APRICOTS.—Escondido Times, July 7: The drying of apricots begins this week at San Pasqual. The crop is said to be large and the quality is good. All the apricots that are produced in commercial quantities in this region come from San Pasqual. We notice that there is a serious fight being made against the use of sulphur in drying apricots. It is claimed that the sulphur produces sulphuric acid in quantities sufficient to be productive of harm when taken into the human system. The driers of fruit, on the other hand, claim that sulphur whitens the fruit and preserves it against the ravages of insects.

San Joaquin.

HEAT DAMAGE.—Special to Sacramento Bee, July 8: Half the entire grape crop, both table and wine varieties, has been burned out by the sun in northern San Joaquin. The damage is the greatest ever done here and means the loss of hundreds of thousands of dollars. Berry and watermelon vines are shrinking up with the intense heat. Tree fruits are drying up.

LITTLE HAY SOLD.—Stockton Independent, July 8: Less hay is being sold at present than in many seasons, as the holders claim that they are not being offered as much as they should receive for their feed. The dealers, on the other hand, assert that up to date there has not been anything that would indicate that there would be a better demand or higher prices this season than heretofore, and many of them anticipate that it will be a long time before there will be much of an advance in the present figures offered. There is considerable hay being brought to Stockton, but about all of it is for storage and the warehouses are filling up at a fast rate. The quality is not up to the average and it is claimed that there will not be much fancy wheat produced in this vicinity, owing to the rust, but the oat hay is very fair and commands top prices.

Santa Barbara.

HEAT DAMAGE.—At Santa Maria reports of damage caused by the late prolonged hot period are being received. Bean raisers say that all the first bloom of vines has been ruined by the unusual heat and that later yields have also suffered, indicating a shortage in the crop. Barley is falling short at least 40% of expectations, and it is claimed that little or none of the shipping grade has b en raised here this year. Oats also appear to be short and some estimates have placed the yield at 60% below the average.

Shasta.

GRASSHOPPERS DAMAGE GRAPE CROP. —The grape crop of Shasta county has been badly damaged by grasshoppers this year. The hoppers eat all the leaves from the vine, but do not touch the fruit, and the grapes are ruined by the sun.

Sonoma.

HOPS.—Press-Democrat, July 8: These warm days have helped the hop fields of Sonoma county. Throughout June the hop vines grew but little and the buds were at a standstill, all because the weather was too cool. Also, many of the yards were infested with hop lice—a pest hitherto almost unknown in this county. Some of the growers were beginning to spray their vines to kill the insects. Now, under the stimulus of the July sun, the vines are growing in pleasing fashion, the buds are swelling, the sunshine has killed the lice, and prospects are good for three-quarters of a crop, it is believed. Buyers are offering 15 cents and are securing some contracts.

CANNERY STARTED. — Sebastopol Times, July 8: The Sebastopol cannery steamed up for business yesterday for the first time since the close of last season. Apricots are now being handled and Manager Asa Mills expects to do a lively business this year.

CANNERY TO START.—Santa Rosa Republican: E. B. Snook, the manager of Miller & Hotchkiss' cannery in Healdsburg, says that he expects to have his cannery running full blast on Crawford peaches by the end of this month. The cannery has been improved since last season and some fine new machinery has been installed. New patented peach peelers have b en added this year, thus insuring clean work.

Sutter.

WARM WEATHER RIPENS FRUIT.—Special to Sacramento Bee, July 7: The warm weather of the past week has ripened the peaches rapidly, near Yuba City, and work is rushing in the local canneries making preparations for the season's run, which is expected to begin a few days earlier than was anticipated a week ago. Some fruit will be canned next week, if weather conditions continue. Fruit men here would a little rather see cool weather. It ripens the fruit slower and gives it a chance to get size. The peach crop will not be an average yield, but is going to be an improvement over last season by nearly one-half.

SMALL WHEAT YIELD.— Harvesting throughout Sutter county has commenced, but little grain is coming into the local warehouses. Reports from the ranchers show that four and five sacks to the acre is an average yield. This grain is not only short in quantity, but poor in quality. Many ranchers will not put a harvester in their fields, the yield not being great enough to justify it. The grain will be pastured, thus affording some good feed and saving the owner the expense of cutting. A few sales have been reported this week at $1.25. The demand is not brisk, however, owing to the quality of the grain.

Tehama.

FRUIT SHIPMENTS —Sacramento Union, July 10: H. P. Stice, Red Bluff, manager of the Pioneer Fruit Co., announces that fresh fruit shipments are beginning. They are shipping a car daily. The shipments will consist of peaches and plums. About three weeks later Bartlett pears will be added. The Pioneer Co. has purchased about 400 tons of fresh peaches in this district for Eastern shipment. Mr. Stice predicts that he will ship from Red Bluff this season about seventy-five carloads and about the same from the Anderson district.

Tulare.

EXETER FIRE. — Fresno Republican, July 8: The biggest fire that ever occurred in the vicinity of Exeter started in a cabin at the stone quarry owned by D. R. Griffith, east of Exeter, through the ignition of matches by the heat of the sun. Prompt action saved the Griffith residence from destruction, but the dry feed in the vicinity took fire and the flames swept over the mountain. One hundred acres of wheat belonging to Henry Meyer was in the path of the fire and was destroyed, as was sixty acres belonging to Richard Kuker. A considerable acreage of pasturage, the property of R. H. Owen, was also burned over. Many hundred acres have been burned over and the loss will be considerable.

WHEAT IS LIGHT.—Hanford Journal: R. J. King of Hanford, who has 600 acres of grain near Tipton, says the yield per acre to wheat is light in quantity and that the wheat will go an average of about 120 pounds to the sack, where it usually goes 140 to 150 pounds.

Ventura.

WALNUT GRAFTING.—Ventura Democrat, July 7: W. Gerry, a walnut grower residing near Santa Paula, has grafted the Eastern variety of walnuts into the most desirable local varieties, and the greatest growth was 7 feet and 11 inches, and the average length 7½ inches.

Horse Owners! Use

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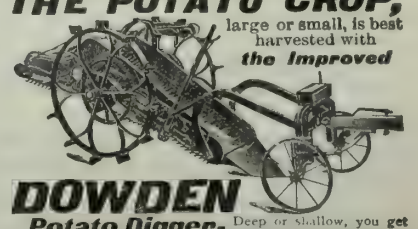
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The Home Circle.

The Country Town.

It's common to sneer at the country town,
With its quiet streets and its peaceful air;
Where the little river meanders down
To be lost in the broad, blue sea somewhere.
As we who think we are wise are lost
In the roaring city that, like the sea,
Has its ebb and flow, with its millions tossed
As bubbles robbed of identity.

There's fellowship in the country town,
With its empty streets and its spreading trees,
Where the country songbirds warble down
At maids as fair as man ever sees.
Where the wind blows sweet from the fields near by,
Where men know the names which their neighbors bear;
Where a man is missed when he's gone to lie
With the peaceful ones who have ceased to care.

There are joys out there in the country town
That we of the city may never learn
In the rush for money and for renown,
Confronting strangers where'er we turn!
Oh, wasn't God's world serene and fair
In the country town ere we came away?
And won't it be sweet to sleep out there,
Far from the city's roar, some day?

—Chicago Record-Herald.

"Opened by Mistake."

"Letters for Conynghame? D. Conynghame?"

The trim little woman inside the general delivery window of the Alvaretta postoffice looked furtively over her shoulder as she reached for a packet of letters. The man at the window, a tall, blonde, curly-haired young Englishman, eagerly watched her swift fingers as they dealt away the letters, sighed as she smiled at him with "Nothing to-day, Mr. Conynghame," and stalked away. The prim clerk's big eyes followed him out of the door and lingered admiringly for an instant upon his ingenious face as he stood in the blazing sunlight lighting his pipe. He was dressed in a weather-stained suit of corduroy knickerbockers, with a gray flannel shirt and a queer little cap that but half concealed the tangle of yellow hair on his fine head. Quite apart from the ordinary type of boomers, with so odd a name, and so striking a physique, it is not extraordinary that the prim Miss Fasset, the postmaster's daughter and chief clerk, "took notice" of Conynghame.

Twice a day thereafter, at 10 in the morning and at 6 in the evening, he was in line at the window. It was no longer necessary to give his name, and sometimes when he was far down in the file of waiting applicants she would save him a long wait by smiling at him from her little peep-hole and murmuring, "Nothing yet, Mr. Conynghame." Then he would lift his cap, "Thank you," and lounge away only to be back again at his usual hour. Often when she knew there was nothing for him she'd let him come up in his turn, make a great show of seeking his letter, and then glancing coyly at him and shaking her head would say, "Mail's all late today, Mr. Conynghame," as though to relieve him of the embarrassment that always showed on his boyish face as he turned away empty-handed. Thus for two months he came and went, twice a day repeating his name, lolling away into the everlasting sunlight—but with never a letter. Not so much as a postal card.

Then suddenly he quit his morning call and appeared only at the last moment before the window closed.

"You don't call so often," Miss Fasset ventured at last, blushing at her own temerity.

"No, miss," drawled the Englishman, "it doesn't seem to be much use to call at all. My place is seven miles out, and I'm trying to make myself comfortable for the winter. I'm castle-building out there."

"And do you drive in every day?" she asked, pretending to scan the letters in her hand.

"Drive? Not I," said Conynghame, seeming glad to find her so talkative, "I haven't a nag, you know, and I can't tramp it both ways in less than two hours."

And then she noticed that the smile on his face was wistful and tired and that some of the ruddy bloom of health was fading from his fair face.

"Couldn't you get some of your neighbors to get your mail?" But she was sorry the moment she said it, for that would mean that she would see still less of him.

"Neighbors are scarce with me. You see I've gotten onto a rather poor claim, I'm afraid, and I seldom see anyone until I reach town. Besides I get a bit lonesome, and I'm always hoping that some time I'll get a letter."

He was looking out into the fading light as he said this, and Miss Fasset thought she saw a glint of moisture in his blue eyes. But there was no letter.

Then day after day as she watched him she saw that his clothes were threadbare and soiled, that his face was thin and pale; that his big, nervous hands trembled and that the light in his eyes was growing brighter, more restless and fierce.

"Letter for you!" she laughed gayly one cold evening when the first norther of coming winter was howling down the dusty street. He took it nervously, almost rudely, and almost staggered across to the coal-oil lamp that flickered dimly in the corner. She watched him open it and examine its contents. He paused a moment and looked about to see if he was alone. Then he took a pin from his lapel, put the contents into the envelope, pinned and wrote something outside with a lead pencil. Miss Fasset was just closing the window when he came up, looking ghastly pale, thrust the letter back at her and said:

"That's not for me, miss." He had written "Opened by mistake" across it, but as she looked at him she smiled reassuringly and answered: "It must be for you, sir. There's nobody else of that name." Together they looked at the postmark, but the date and place of mailing were blurred and unreadable. It was addressed plainly to "Mr. Conynghame, Alvaretta, O. T.," in typewriting.

"It must be yours," she decided.

"O but it isn't. Besides there's money in it. I—"

"How much?"

"Ten dollars."

"O, then, that settles it! If it isn't yours the real owner will come along looking for his money. Then I'll call on you."

He would have protested, but she slammed the window shutter with a merry laugh and left him alone with the letter in his hand. He was in the street before he reopened the envelope and drew out a crisp, new $10 note. There wasn't a word with it, not even a scrap of letter paper. He crumpled the money in his shaking hand, hurried down the street and rushed into the English kitchen to buy the first square meal he had eaten for months.

"I know it wasn't mine," he growled to himself as he turned up his collar and faced the driving storm of sleet and rain, "but I've got $9 left, and if the other Conynghame asks for his letter I'll return what's left of it." And he staggered out across the prairie toward the lonely dug-out that he called "home."

When closing time came next day little Miss Fasset was annoyed. The big Englishman for the first time in months had failed to appear. Whether she now regretted trusting him with what might prove to be another's letter and money, or whether she suspected that he had gone off on what westerners call "a high lonesome," is not certain, but whatever the cause, she was worried and showed it in the frown upon her pretty forehead and the flash of her big black eyes. But Conynghame came not the next day, nor the next, nor any day thereafter for a week, and Miss Prim, sure at last that he had "jumped the country," was doing her very best to despise or forget him when there came a letter post-marked Liverpool and addressed "Dudley Conynghame, Esq., Alvaretta, Oklahoma Territory, U. S. A." At least there could be no mistake about that letter, and it got so strongly on Miss Fasset's nerves that she was obliged to quit her duties before noon.

"I've got a nervous headache," she explained to her indulgent papa, "and I'm going to take a long drive in the country."

So she bade Martha, their old negro housekeeper, to hitch up Dobbins, and set forth for her drive. It was nearly 4 o'clock when she found Conynghame's claim. Unfenced, untilled, glaring red in the cold sunlight, it stretched across a desolate hill and sloped away into a barren waterless valley. Not a house nor a barn, no sign of occupancy gave them welcome. They had climbed the little knoll of shale and were about to drive away when Martha's black finger was raised, and she said:

"Yander is a dug-out, honey." And they drove across the crest of the red hill and found indeed a low warren burrowed in the ground, its roof of clay looking like a mere ant-hill. Martha descended from the buggy and lumbered down the four steps cut into the earth. Having battered at the door without getting a response she pushed it open and entered. In a moment she came up again, her black face almost gray as she said:

"He's in thar, honey, but fo' Gawd, he muss be dyin'."

Miss Fasset found her Englishman asleep, the faded shadow of his once splendid self. By the light of the open door they saw what "castle building" had been with Conynghame. He lay upon a heap of dry grasses in the corner. A few soap boxes constituted his furnishings. He had made some clumsy effort to brighten his cave-like home by papering its clay walls with newspapers, but the rains had leaked in and streaked all with damp, yellow stains.

"He's wakin' up, honey," whispered Martha. "Ah mout skeer him, so Ah'll jes' go an' look arter Dobbin."

The girl was sitting in the litter of grass beside him holding his bony hand, when his eyes opened and fell upon her.

"I've brought you a letter, dear," she whispered, and as he drew her down to him her tears fell hot and fast upon his face as he sighed, "At last." She pulled the letter from her pocket then and held it to him, but he weakly smiled as he bade her open it and read to him. She put a pile of empty sacks behind his head and propped him up so that she could see his face, and then she read the letter—not aloud as she had intended—but to herself, for it was the news of his father's death, a brief businesslike document from the legal executor.

But finally she told him, gently, gradually, tenderly, and when the first long storm of his grief was gone and he understood that his father had been ill for six months, had received none of his letters and had died alone at Carlsbad, the wasted giant looked up at the girl beside him, and with a wan smile said:

"Now we know why I didn't get any letters."

"Yes, it's plain enough now."

"But I did get one letter," he whispered, taking both her hands in his and smiling again, "and there's at least some comfort for me to know that now I can repay you."—John H. Raftery, in Chicago Record-Herald.

A Health Barometer.

One who makes a close study of finger nails will find many curious things about them to excite his wonder and interest, but none more so than the studies of physical condition told in their growth. The nail of a person in good health grows at the rate of about one-sixteenth of an inch each week—slightly more than any authorities believe—but during illness or after an accident, or during hours of mental depression, this growth is not only affected and retarded, so far as its length is concerned, but also as regards its thickness.

The very slightest illness will thus leave an indelible mark on the nails, which may be readily detected as the nail grows out. If one has a sudden attack, such as acute rheumatism, which sends the temperature bounding upward to 104° or 105°, within the space of three or four hours, it will be found on the nails, indicating the difference in thickness of growth between the time when health was enjoyed, and the thin growth of the ill period. If the illness is one that comes on gradually, like typhoid fever, for example, instead of a ridge, a gentle incline will appear on the nails. Should one have an arm broken, the thick ridge can be seen only on the fingers of the one hand, but in all cases of general sickness the ridge or slope appears on the fingers of both hands. When one has passed though a period of extreme excitement or mental depression, the fact will be imprinted on the nails, either with an abrupt ridge or a gentle slope, according to the acuteness of the mental influence.

In no instance can the marks of illness, accident or mental condition be clearly seen on the nail until after the growth has carried the line beyond the white or half moon portion of it, but a week or two subsequent to any of these things the ridge or slope may be found on the nails, usually readily visible to the eyes, but if not, the mark may be found by running the tip of the finger down any of the nails.—St. Louis Globe-Democrat.

How to Use the Sad Iron.

When everything is ready for ironing, divide the clothes in an orderly manner.

Put the basket full of clothes upside down on the ironing table, then set the empty basket on the floor and line it with a clean towel.

Take from the heap all the articles which need but a few minutes' attention and place them together at the end of the table. When the clothes are divided these can be ironed at once and hung up to air.

Put the starched things to one side; they are to be dealt with when everything else is finished. Then put the nightgowns in one pile, the chemises in another and so on.

Do not waste time by trying to do the work with cold irons.

Always iron with the thread parallel with the selvedge; it is not half so hard on the material.

There is a knack in ironing which can only be acquired by practice. Inexperienced workers often push the iron backward and forward; they ought rather to aim at pressing the material with the iron, passing it along as they do so.

Scrape the Iron.—If any dirt or starch sticks to the iron it should be scraped off with an old knife.

Iron every article until it is dry. This is one of the secrets of good ironing.

Table linen requires very careful treatment. It should be shaken well and drawn—that is, held by two persons and pulled to hang evenly, then folded before being hung out. It should be dried thoroughly, then plentifully sprinkled with water and mangled while tolerably damp. It should be gone over carefully with an ordinary iron, then with the glossing iron, folded lightly, twice lengthwise and twice across, and put away.

Flannels, if ironed at all, should be ironed on the wrong side with a cool iron.

Stockings and socks should be mangled, not ironed.

Sheets, towels and pillow-cases should be folded like table cloths.

Turkish towels should be simply drawn and folded, the rougher they are the better.

Dresses should be ironed in the thickest parts, such as the waists, gathers and sleeves. First the sleeves should be gone over on the wrong side, then finished on the right.

Fold Handkerchiefs.—A cool iron should be used on colored goods, as heat fades them.

Handkerchiefs should be folded and mangled wet, left to lie for a time, then ironed singly while damp. Never starch them, it injures and rots them.

Embroidered letters or monograms

should be ironed first of all on an extra piece of blanket, on the wrong side. This will throw up the pattern.

Embroidery should always be ironed on the wrong side.

Plain muslin should be ironed on the right side. It looks best when ironed twice in opposite directions, by the thread.

Spotted muslin should be ironed on the wrong side.

Crochet should not be ironed, but simply pulled straight.

Lace may also be pulled and stretched, then pinned in position till dry. If ironed it must be laid on the board face down and ironed on the wrong side with a cool iron, with muslin between. After being gone over a few times the lace should be taken up, pulled and stretched, then ironed again as before.

Capes and aprons that are trimmed with frills should have the frills ironed first.

Silk handkerchiefs should be ironed with a cool iron on the wrong side.

Collars and cuffs need very careful ironing. Have irons that are hot, but not hot enough to scorch.

Stretch the collar or cuff out, lay it straight, face downward on the table and iron it quickly from one end to the other to dry a little.

Turn it, stretch it a little and iron it in the same way on the right side until it is smooth and without wrinkles.

Repeat once or twice, but gradually more slowly and heavily until the collar begins to feel dry, then finish on the right side with heavy pressure. Until skill has been acquired in this it is an excellent idea to lay a piece of thin muslin between the collar and the iron.

Places You Would Better Avoid.

As places of residence, neither the Bahrein Islands nor the Persian gulf, nor the city of Yakutsk, Siberia, have much to offer in the way of climate, says the Washington Post.

In Bahrein you cook and in Yakutsk you freeze. Bahrein is said to be the hottest place in the world. The thermometer often registers between 110° and 120° night and day for months at a time. This rather beats Fort Yuma, Ariz., which is considered the hottest place in the United States.

Yakutsk is called the colnest city in the world. The thermometer frequently registers 73° below zero.

Though Yakutsk is the coldest city in the world, Verkhoyansk, in Northeastern Siberia, claims to be the coldest habited place on the globe, the thermometer registering 90° below zero in January.

It also claims to be the place possessing the most variable climate, for while it is 90° below in January, it is 86° above in the shade in August during the day, with a drop down to freezing every midsummer night.

The wettest place in the world is Greytown, Nicaragua, where the annual rainfall is 260 inches.

The driest place in the world is probably the rainless coast of northern Chile. They have a shower there about once in every ten years. Nothing grows on this desolate strip of barren coast, and the dreary towns from which the nitrates and the minerals mined in that region are shipped, depend for their subsistence upon food brought to them in ships from the fertile strips to the north and south of the desert.

Northern Russia and the shores of the French Congo are said to be the cloudiest places in the world, and for fog there is no region like the Grand Banks, the southern coast of Newfoundland, and the waters of Nova Scotia.

This region is one of fog for a large part of the year, and the very home of fog is the island of Grand Manan, at the entrance to the Bay of Fundy, where sailors declare the natives manufacture fog. When a bank of especially thick fog is seen approaching over the waters the mariners turn to each other and say, "The Grand Mananers are at work."—Exchange.

Sam—Pretty hard to be much of a sinner on such wages.

Snake Hypnotism.

Graham Peck, a well-known authority on snakes, was asked his opinion regarding a snake's hypnotic powers. His reply was as follows:

"There is a certain power to fascinate in a snake's eyes and movements. I saw only the other day a typical illustration of the power of a snake to fascinate.

"Over in the pine woods I saw a ground squirrel fascinated by a black gopher snake. The forked tongue darted out of the snake's mouth almost as regularly and rapidly as the needle of a sewing machine rises and falls. The squirrel seemed to watch it spellbound. The snake crept slowly nearer. When the gopher snake was within 2 or 3 inches of the squirrel, it gave a leap and threw three coils about the squirrel. Instantly the spell was gone. The fascination or charm there had been over the little animal was no doubt broken the very moment the serpent's coils were about the squirrel, for the animal gave three convulsive, terrified chirps and realized that its death moment had come.

"I believe implicitly that all snakes have a certain degree of power to fascinate their victims to death. Blacksnakes, gopher snakes and racers have the most fascinating power among all the poisonous serpents in America. The indications of charming among poisonous snakes are deceiving sometimes. Poisonous snakes fang their prey once only. The poison does not kill at once. The victim flutters to a branch, it may be, or runs a short distance and stops. The snake watches it. The poison does its deadly work, and the bird falls. Any one who comes up, not having seen the attack, might be readily deceived into imagining that it was the glance of the snake and not the poison that caused the victim to fall."—Detroit Free Press.

IT is easy to be good when there is no temptation to be bad. Many a saintly life follows the path of righteousness because the entrance to the other path was never encountered.

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Monterey County, Cal.
OPEN THE YEAR ROUND.
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Hot Soda and Sulphur Springs for the cure of Rheumatism, Gout, Asthma, Malaria, etc.
RATES $10.50 TO $16.00 PER WEEK.
Table first class. Postoffice and Telephone.
Write for our booklet and any information to
F. E. ROMIE, Mgr., PARAISO SPRINGS.

Dividend Notice.
SECURITY SAVINGS BANK,
316 MONTGOMERY ST.
For the half year ending June 30, 1905, dividends upon all deposits at the rate of three and one-quarter (3¼) per cent per annum, free of taxes, will be payable on and after July 1, 1905.
FRED W. RAY, Secretary.

Dividend Notice
SAVINGS AND LOAN SOCIETY,
101 MONTGOMERY ST. COR. OF SUTTER.
Has declared a dividend for the term ending June 30, 1905, at the rate of three and one-half (3½) per cent per annum on all deposits, free of taxes, payable on and after Saturday, July 1, 1905.
EDWIN BONNELL, Asst. Cashier.

TENTS!
IRRIGATION HOSE, ETC.
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Awning and Tent Co.
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Bags, Tents, Awnings, Hammocks and Covers.
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Western Meat Company,
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Citrus Trees.
"By their fruits ye shall know them." If you buy trees of us and they do not give fruit true to name, we will buy them back. We have the largest stock of fine citrus trees in the world. Send for the citrus book.
Sweet, sour Pomelo and Citrus Trifoliata seed bed plants.
San Dimas Citrus Nurseries,
R. M. Teague, Prop.
SAN DIMAS, CAL.

COCOZELLE BUSH SQUASH.
Matures in ten weeks.
Continues bearing till frost.
Yields more tons per acre than any other squash or pumpkin.
Can be planted five feet apart each way.
Can be planted until August 1st and mature crop.
The best stock squash.
Trial packet, 10c.; 1 lb., 50c.; 10 lbs., $4.00, postpaid.
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We handle only the best make of
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and guarantee them for service.
X-RAY and DANDY.
Both better than the average, simple in construction and durable. Send for catalogue. Do it to-day. Estimates furnished on all sorts of pumping plants.
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Write for new Catalogue and College Journal—Free.

GLENN RANCH,
Glenn County, - - California.
FOR SALE
IN SUBDIVISIONS.
This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.
This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.
The river is navigable at all seasons of the year, and freight and trading boats make regular rips
The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Eibe.
For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,
F. C. LUSK,
Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California

FINE FARMS FOR SALE.
955 A. at $30 00 per A.; 700 A. alfalfa land; good buildings; 6 miles from town.
2200 A at $10.00 per A.; 600 A. No. 1 land; balance easily cleared; 5 sets of good buildings; 10 miles from town; R. F. D. and 'phone.
400 A. at $12.50 per A.; 150 A farm land, balance timber, 10,000,000 ft.; 20 miles from R.R; good road.
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TRANS-CONTINENTAL FREIGHT CO.,
G 620½ Market St., San Francisco.
G 355 Dearborn St., Chicago.
G 236 West 5th St., Los Angeles.

The Markets.

San Francisco Produce Report.

San Francisco, July 12, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 94 @ 90¼	91¼@ 87½
Thursday	90¼@ 85¾	87⅞@ 85½
Friday	91⅛@ 85⅝	88⅛@ 87
Saturday	91¼@ 89⅛	88⅛@ 87⅛
Monday	91⅛@ 89⅛	88¼@ 86⅞
Tu sday	91 @ 89⅛	88⅝@ 87¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	56⅜@55⅝	55⅛@54¼
Thursday	56⅜@55¾	55⅛@54⅜
Friday	57⅛@56⅜	56⅝@55½
Saturday	57⅛@56⅜	56⅝@55⅝
Monday	57⅛@55½	56⅜@55¼
Tuesday	56⅝@55½	56 @54⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 43 @1 42	$ ——@——
Thursday	1 42¾@1 42⅛	——@——
Friday	1 45¼@1 43	——@——
Saturday	1 46¾@1 45	——@——
Monday	1 49 @1 47½	——@——
Tuesday	1 48⅝@1 48⅛	——@——

Wheat.

The local spot market has been further strengthened during the past week. Wheat is still moving to the country for chicken feed purposes, and prices, while quotably unchanged, are very firm. The future wheat crop in California is still an unsolved problem, owing to conflicting reports now coming in. It seems, however, that the crop has not improved any during the past week. Rust damage continues to be heard of and the unusually hot weather will undoubtedly cause shrinkage in some places. Prices for December wheat are ruling high on the strength of bad crop reports from the middle West. Crops are reported good in Oregon and Washington. The prospect for export has not changed since last week and buyers for export will not attempt to operate as long as present conditions exist. A drop in prices is naturally expected as soon as new wheat comes in in sufficient quantity to more than supply the local demand. Grain freights to the United Kingdom and to the Continent are unchanged. Quotations are placed nominally at 22s 6d to 23s 9d from San Francisco, 27s 6d from Portland and 26s 3d from Puget Sound.

California Milling	$1 55	@1 65
Cal. No. 1 shipping, alongside	———	@———
Cal. No. 1 wheat	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat $1.45⅛ was bid.

Flour.

The flour market has strengthened a little this week owing to the stronger position of spot wheat. A decline is expected, however, as soon as the large crops of Washington and Oregon are fairly launched. At the present time there is simply a local market with no export trade to figure on. Shippers are hoping of a revival of the export trade as soon as California prices come to a parity with prices in other parts of the world.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Local jobbers in barley report fairly strong receipts, with prices well maintained. The spot market was very slow during the exceedingly hot weather of last week, but prices have recovered their former firmness and are possibly a shade higher at present than they were a week ago. No export business has as yet developed, as prices continue considerably above export value. The crop is, however, of a fair size, and a certain amount of exporting is certain to be done later on, though this will naturally mean a readjustment of prices on an export basis.

Feed, No. 1 to choice spot	$1 00	@1 05
Feed, fair to good, to arrive	95	@ 98½
Brewing, No. 1 to choice old	———	@———
Chevalier, No. 1 to choice	1 10	@1 15
Chevalier, common to fair	1 00	@1 07½

Oats.

In old stock the supply of all grades now in the market was further reduced this week by steady buying. A small movement has been developed in futures at prices ranging from $1.15 to $1.30. The supply of reds is well maintained, with receipts running about the same as last week.

White oats, fancy feed	$———	@———
White, good to choice	———	@———
White, poor to fair	———	@———
Milling	———	@———
Black oats	1 45	@———
Red, fair to choice new	1 10	@1 30

Corn

There have been considerable receipts of Eastern corn during the past week and the principal business done has been in Eastern. Prices are dependent largely upon Eastern prices. The market is fairly strong and prices of all grades now in the market are firm.

Large White, good to choice Cal	$1 42½	@1 47½
Large Yellow	1 40	@1 45
Small Yellow	1 47½	@1 52½
Egyptian White	———	@———
Egyptian Brown	———	@———
Eastern, sacked	1 35	@1 45

Rye.

The rye market continues without apparent change except in the quality of receipts. Arrivals have shown an improvement in quality, though the quantity has fallen off. The market is cleaning up nicely at full quotations and there will be but little old stock on hand when the new crop comes in.

Good to choice	$1 40	@1 45

Buckwheat.

With no stock in first hands and with very small holdings in the hands of the local mills, there is scarcely any movement of a jobbing character.

Good to choice	$2 25	@2 50

Beans.

There has been a good movement in blackeyes and pinks are looking up. Limas show a considerable advance in price in spite of the fact that the demand has been rather light for the past few days. There is, however, a certain shipping demand for Limas, and it now looks as though the market would clean up well before the new crop comes in. Pea beans and kidney beans are now out of first hands and unquotable. Red beans are almost gone and have been marked up in price, some quoting as high as $8.50. It is reported that pinks for shipping have been sold as low as $1.50 to $2.50. At these figures considerable business has been done during the current week.

Pea, good to choice, 100 lbs	$———	@———
Small White, good to choice	3 30	@3 60
Large White	2 50	@2 90
Pinks	2 50	@4 00
Bayos, good to choice	3 65	@4 00
Red Kidneys	———	@———
Reds	7 50	@8 50
Limas, good to choice	5 75	@5 80
Black-eye Beans	3 00	@3 15

Dried Peas.

The demand for dried peas has been good during the current week and a further falling off in the supply on hand has resulted. The stock of large Garbanzos is diminishing very rapidly and other sorts are expected to clean up well, though trading is now very light.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	———	@———
Niles	1 50	@2 00

Hops.

The hop market continues rather unsettled and prices are weaker and hard to fix definitely. Some sales of 1904 hops have been made at 17½c and 18c, though the movement at these figures was very light. Quotations of choice 1904 hops may be placed at from 18c to 23c, though it is doubtful if any considerable quantity could be placed at the top figure. Some contracts have been made for the growing crop at from 15½c to 18c. The outlook for the future crop continues to improve, as a result of the extremely hot weather. Hop growers of Oregon are planning to organize for the purpose of securing full prices, and claim that fully 90% of the crop of that State can be turned into the contemplated pool.

Good to choice 1904 crop, nominal	18	@ 23

Wool.

The spring clip in California as well as throughout the coast has all been marketed. The bulk of it went to Boston, leaving the local market with very little choice or even fair wool on hand. Local traffic is at present confined to small parcels of lamb shearing, all of which has been taken by the scourers at prices ruling very high. The supply of this product is limited and will probably be exhausted within a few days. The California wool market will be of very little interest before the middle of September when the fall shearing will have commenced. Some contracts have been made for fall wool, but no very extensive trading has been done. Prices for the more or less defective wool now held here have ranged from 50c to 55c for scoured for the best grade, and from 15c to 22c for lamb's wool in the grease.

SPRING.

Humboldt and Mendocino	27 @30
Northern, free	25 @27
Northern, defective	22 @24
Middle County, free	25 @—
Middle County, defective	20 @22
San Joaquin and Southern, free	20 @22
San Joaquin and Southern, defective	15 @18
Oregon, valley	26 @28
Eastern Oregon	16 @22
Nevada	20 @24

Hay and Straw.

The hay market has shown little variation this week. Receipts of hay have been fair, but not sufficient to cause any great variation in quotations for new hay. Sales of new oat are reported at a slight advance over last week, while new wheat and oat is quoted a little lower. There has been a steady movement of old hay at previous quotations, though operators show an inclination to await the new crop before doing anything very extensive.

NEW HAY.

Wheat, good to choice	$ 8 50	@ 14 00
Wheat and Oat	7 00	@ 12 00
Tame Oat	6 00	@ 11 50
Wild Oat	5 00	@ 8 00
Alfalfa, prime	10 00	@ ——
Alfalfa, poor to fair	6 00	@ 7 00

OLD HAY.

Wheat, good to choice	$10 00	@ 14 00
Wheat and Oat	9 00	@ 13 00
Tame Oat, fair to choice	7 50	@ 11 50
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 10 00
Clover	6 00	@ 9 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	30	@ 50

Millstuffs.

The supply of bran and middlings now on hand in the local market is very limited. Dealers report increasing difficulty in filling their orders, owing to the growing scarcity of the supply. A large order for middlings has just been filled, after being held for two weeks. Quotations continue as before, the only change being a slight reduction in bran. Rolled barley is very weak and is moving slowly. Cornmeal and cracked corn continue firm at former prices.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	19 00	@ 21 00
Middlings	24 50	@ 27 50
Shorts, Oregon	21 50	@ 23 00
Barley, Rolled	20 75	@ 21 50
Cornmeal	30 00	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	33 50	@ 35 00

Seeds.

The seed market is still very quiet, but with prices being held firm at quotations. Triest mustard seed is practically out of the market. Flaxseed is slightly higher, some very choice stock having sold at $3. The general run of stock has, however, sold as heretofore.

Flax	$2 25	@ 3 00
Mustard, Yellow	3 25	@ 3 75
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		11 @—
Canary		6¼@ 6½
Rape		2½@ 3
Hemp		3½@—
Timothy		5 @ 5½

Honey.

The honey market is hard to fix, as San Francisco operators are showing an indisposition to buy at present prices, in the belief that large quantities will come in later. The outlook is still for a large crop of good quality, though the output will doubtless be reduced to some extent by the hot weather.

Extracted, White Liquid	5½@—
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@—
White Comb, 1-frames	11 @—
Amber Comb	8 @10

Beeswax.

No new wax has come in and there is very little doing in old wax, though the market is reported steady.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Live Stock and Meats.

The market while still very quiet shows a marked improvement over last week. Prices on Beef and Mutton are very firm and have not yet been advanced. The demand for Hogs shows a distinct improvement, under the influence of which prices have gone up about ½c.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5¼
Beef, 2nd quality	4½	@ 5
Beef, 3rd quality	3¾	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@ 6
Hogs, large, hard, over 200 pounds	5½	@ 5¾
Hogs, small, fat	5¾	@ 5⅞
Veal, large, ₱ lb	6	@ 7
Veal, small, ₱ lb	7	@ 8
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	8	@ 9

Hides, Skins and Tallow.

The hide market is reported firmer this week again, though quotations have not been marked up to their former point. The general idea is that with the exceedingly light stocks of hides and finished leather now in existence there is small possibility of any serious slump in hide values for some time to come. Heavy hides, which are not now in such strong demand as heretofore, may ease off some, but it is hard to see how, in the face of the present active demand for light hides, there can be any falling off in these. The demand for California leather for export continues quiescent, though advices from Japan indicate a resumption of active buying before long.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	11½@—	11 @—
Medium Steers, 48 to 56 lbs	10½@—	10 @—
Light Steers, under 48 lbs	10½@—	10 @—
Heavy Cow Hides, over 50 lbs	10½@—	10 @—
Light Cow Hides, under 50 lbs	10½@—	10 @—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	11 @12	11 @—
Wet Salted Calf	12 @13	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		3½@3¾

Bags and Bagging.

The market for bags continues very firm with prices ruling high. Grain Bags are holding their own at 7⅛@7¼c with an exceedingly lively demand. The supply of bags on hand is probably ample for requirements, but owing to the increased demand there is no tendency toward a reaction in prices, which are expected to continue firm until after the buying season closes.

Bean Bags	$	5¼@—
Fruit Sacks, cotton		6½@7½
Fruit Sacks, jute, as to quality		6 @7½
Grain Bags, Calcutta, 22x36, spot		7½@7¾
Grain Bags, Calcutta, buyer June-July		—@—
Wool Sacks, 4-lb		32 @—
Wool Sacks, 3¼lb		30 @—

Poultry.

The poultry market is in good shape, though receipts from California have been large and receipts from the East fully up to expectations. Prices have been advanced in a number of instances and are now holding firm at the advances. Large Hens and Young Roosters are, as usual, the favorites, but prime Young Chickens are also in good request, and throughout the list there is no tendency to shade quotations.

Turkeys, choice Young, ₱ lb	$ 25	@ 27
Turkeys, live gobblers, ₱ lb	19	@ 21
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 00
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	5 50	@ 6 50
Fryers	4 50	@ 5 00
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 00	@ 2 25
Ducks, old, ₱ dozen	3 50	@ 4 00
Ducks, young, ₱ dozen	3 00	@ 4 50
Geese, ₱ pair	1 50	@ 1 75
Goslings, ₱ pair	1 50	@ 1 75
Pigeons, old, ₱ dozen	1 25	@ ——
Pigeons, young	1 25	@ ——

Butter.

The butter market has been largely influenced during the past week by weather conditions. Buyers have been operating with considerable freedom since the first of the week and the market has assumed a steady tone, which is favorable to sellers of good, solid butter. Hard creamery butter has been in great favor, with a corresponding falling off in the demand for soft butters. A large stock of butter has come in in poor condition, and this is being sacrificed at irregular figures.

Creamery, extras, ₱ lb	21 @22
Creamery, firsts	19 @20
Creamery, seconds	18 @—
Dairy, select	18 @—
Dairy, firsts	17 @—
Dairy, seconds	17 @—
Mixed Store	15 @17

Cheese.

The hot weather of last week has had considerable influence on the cheese market, causing a sharp divergence in the demand as between good, hard cheese and cheese more or less damaged by the heat. On the whole, cheese is weak and may be quoted about ½c off. Receipts have been very heavy. During the past week there has been an increase of 100,000 pounds as compared with the receipts of the corresponding week of last year.

California, fancy flat, new	10 @—
California, good to choice	9½@—
California, fair to gobd	9 @ 9½
California, "Young Americas"	10 @12
Eastern, new	12½@13½

Eggs.

Eggs are much firmer, with advances quoted for the better grades and with a probability of still further advances before the week is out. Under grades do not show the same tendency to advance, as these are coming into competition with Eastern eggs. Receipts show up in poor condition and nearly all the arrivals have to be candled owing to the hot weather.

California, select, large, white and fresh.	22 @23
California, select, irregular color & size.	20 @21
California, good to choice store	16 @17
Eastern firsts	17½@18
Eastern seconds	15 @16

Potatoes.

For some reason arrivals of potatoes

have been very light this week and the market has shown a reversal of the previous week when receipts greatly exceeded the outlet. There has been a hardening of prices, which are now almost on the level of two weeks ago. The quality of the new potatoes coming in continues good. Receipts are expected to improve this week, though the quality may fall off owing to the arrival of burned stock.

Cal. Early Rose, ₱ cental	75	@	85
Cal. Burbanks, ₱ cental	65	@	1 00
Salinas Burbanks	1 30	@	1 40
Chile Garnet, ₱ cental	65	@	75
White Rose, ₱ cental	60	@	1 00

Vegetables.

The vegetable market has been more or less affected by the hot weather. The supply of strictly number one stock in many varieties has been limited by the heat, while the quantity of off grades has been increased. Corn has suffered most; a great deal of this has been practically ruined. Some was sacrificed here this week at 15c a sack to cover freight charges. Strictly good corn is, however, in good demand at quotations. String Beans are more plentiful and are selling at lower figures. These are also more or less affected by heat. Red onions are now practically out of the market. The hot weather of last week cooked about all the reds left in the State.

Asparagus, No. 1 to choice, ₱ lb	5	@	6½
Asparagus, No. 2, ₱ lb	3½	@	4
Beans, Lima, ₱ lb	—	@	—
Beans, String, ₱ lb	1½	@	3
Beans, Wax, ₱ lb	2	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	1 00	@	1 25
Egg Plant, ₱ lb	5	@	8
Garlic, ₱ lb	3	@	5
Mushrooms, ₱ lb	—	@	—
Onions, New Yellow Danvers, ₱ ctl	1 00	@	1 25
Onions, New Red, ₱ ctl	60	@	1 00
Peas, Green, ₱ sack	1 00	@	1 50
Peppers, Bell, ₱ lb	8	@	10
Peppers, Green, ₱ lb	10	@	15
Rhubarb, ₱ box	50	@	75
Summer Squash, per large box	30	@	50
Tomatoes, ₱ box or crate	2 00	@	2 50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 30 to 30 lbs. gross.

Fresh Fruits.

Fresh fruits are in larger supply and are generally lower in price. Apricots and berries are badly burned and are coming in in bad condition. Apples seem to have stood the heat better, and supplies from the Pajaro valley do not seem to be badly damaged. Grapes were in freer supply early in the week, selling at $1, but later the supplies were practically exhausted. Currants were badly burned last week and prices show the result of the poorer quality coming in. Supplies of these are not any too free. Cantaloupes and watermelons are more plentiful, the former being quoted considerably lower than a week ago. Peaches are in good demand with supplies not any too ample. Pears are about as heretofore, with small arrivals and not a very active demand.

Apples, choice to select, ₱ 50-lb bx	1 35	@	1 40
Apples, good to choice, ₱ 50-lb. box	85	@	1 10
Apples, fair to good, ₱ 40-lb box	40	@	75
Apricots, in bulk, ₱ ton	10 00	@	20 00
Apricots, ₱ box	30	@	65
Blackberries, ₱ chest	3 00	@	4 00
Cantaloupes, pony crate	1 50	@	—
Cantaloupes, ₱ standard crate	1 75	@	—
Crabapples, ₱ large box	75	@	1 25
Currants, ₱ chest	4 50	@	6 00
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	1 00	@	1 25
Gooseberries, English, ₱ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ₱ crate	1 00	@	—
Loganberries, ₱ chest	3 00	@	4 00
Peaches, ₱ large box	85	@	1 20
Peaches, ₱ small box	60	@	75
Pears, Bartlett, fair to choice, 40-lb box	1 00	@	2 00
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ₱ crate	40	@	65
Plums, ordinary, ₱ box	30	@	50
Plums, Simoni, ₱ crate	65	@	75
Prunes, Tragedy, ₱ crate	40	@	65
Raspberries, ₱ chest	3 50	@	5 00
Strawberries, Longworth, ₱ chest	3 00	@	4 50
Strawberries, large var., ₱ chest	3 50	@	4 00
Watermelons, ₱ doz	1 50	@	3 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

Except in cases where supplies of new crop fruit have come in, there is but little change in prices. Some new apples are in, selling at from 6c to 7c for the best. Apricots are unsettled, owing to reports of large dryings and to the arrivals of off quality fruit. It is held that owing to the hot weather and rapid ripening of apricots there will be a large quantity of "slab" apricots on the market shortly. No new peeled peaches have come in. The arrivals of new unpeeled have been in good request, selling at from 5½c to 6½c. Pears of the new crop are not expected before July 25, though some buying has been done at from 8@11c. Pitted plums are expected about the end of the month.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	6
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ₱ lb	5	@	6
Apricots, Royal, fancy	7	@	—
Figs, 10-lb box, 1-lb cartons	55	@	60
Nectarines, White and Stanwick, ₱ lb	5	@	5½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8½
Plums, Yellow, pitted	6½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2¾@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3	@	—c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	—	@	4¼c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded			5½c
Choice, 16-oz. Seeded			4½c
Fancy, 12-oz. Seeded			4¾c
Choice, 12-oz. Seeded			3¾c

Citrus Fruits.

The orange situation has not changed since last week. Stocks are selling freely under a fair supply. Lemons continue firm.

Oranges, Navels, choice to fancy, ₱ bx	2 75	@	3 00
Oranges, Navels, fair to good, ₱ box	1 50	@	2 50
Oranges, Seedlings, ₱ box	—	@	—
Oranges, Valencias, ₱ box	2 25	@	3 50
Oranges, Mandarins, small	1 50	@	1 75
Lemons, California, select, ₱ box	2 75	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 50	@	2 50
Limes, Mexican, ₱ box	4 00	@	4 50

Nuts.

Future nuts continue to occupy the attention of operators, though there has been but little movement even in futures. Reports indicate that the almond crop will be larger than previous estimates and lower prices are being talked. It is held by some that almonds will not open above 10c for soft shell varieties and 7c for hard varieties. There is nothing new in walnuts.

Chestnuts, Italian, ₱ lb	—	@—
Nonpareil Almonds	13	@16
Ne Plus Ultra Almonds	11	@14
Languedoc Almonds	8	@11
Peanuts, fair to prime	4½	@ 5½
Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	10	@11
Cal. Walnuts, No. 1 hard shell	11	@12
Cal. Walnuts, No. 2 hard shell	9	@10

Wine.

Wine is unchanged, with but little doing owing to the uncertainty of the size of the coming vintage. Prices are quoted all the way from 14c to 18c with practically no movement. Prices are, of course, largely nominal and will not become fixed for some time.

THE APIARY.

A Plan for Foul Brood.

Mr. M. M. Baldridge, formerly a resident of southern California, but now of Illinois, gives the American Bee Journal his plan of treating a foul-broody colony successfully as follows:

1. Open the hive of the diseased colony and cage the queen. The best time to do this is late in the afternoon or near sunset. Place the caged queen in the top of the foul-broody hive, and where the cage can be got at with as little trouble as possible.

2. Bore a small hole—about 1 inch in diameter—in the front end of the foul-broody hive a few inches above the regular entrance, and fasten over it on the outside of the hive a Porter bee-escape. After the bees are through flying for the day turn the foul-broody hive half way around so the bee-entrance will face the opposite direction.

3. Now go to some healthy colony and select one or two combs of brood well covered with bees, and place them in an empty hive and fill this hive with empty combs, frames of comb foundation, or empty frames, and set this hive on the stand of the diseased colony. The rear ends of both hives will now touch each other, or they may be a few inches apart. Now leave the hive thus say 2, 3 or 4 days, or long enough for the outdoor workers in the foul-broody colony to return to their old location. This they will do, of course, and they will then remain in the new hive having one or two combs of healthy brood.

4. Near sunset of the second or third day take the caged queen away from the diseased colony and simply let her run into the entrance of the new hive.

5. Now close the regular entrance of the foul-broody hive and all other exits except the one through the bee-escape. Then gently place this hive by the side of the new hive and close to each other, the closer the better, with both fronts facing the same way. Thereafter the bees that hatch or fly out of the diseased colony must pass through or out of the bee-escape, and as they can not return they must and will go into the new hive. By this means the new hive, in the course of 3 or 4 weeks, will secure all, or nearly all, the bees and brood that were in the diseased colony, and during this time, or for any length of time thereafter, no robber bees can gain entrance thereto and carry away any diseased honey.

This plan of treating foul-broody colonies prevents all loss in bees, brood, honey, or the building of new combs, and is a simple and practical way of treating the disease. In some respects the plan is a far better one than any other I have seen described.

My plan may be carried out in divers ways, but it is not always best to describe such and thereby confuse the reader. The entire plan is based upon the well-known fact that foul brood is a germ disease, and that the germs may be taken into a new hive by the bees filling their bodies with the diseased honey deposited in the foul-broody hive. The disease may likewise be taken into the new hive by the nurse-bees. My plan does away with all such danger, for when the diseased colony is left undisturbed over night the bees re-deposit all their honey, and on going out to work the following day they go out with empty bodies and return with healthy honey. All the nurse-bees will remain in the diseased colony, and before they pass out of their hive through the bee-escape all germs in their bodies will have been disposed of in nursing the uncapped brood in the foul-broody colony.

My plan of treating foul brood is not exactly a new plan, as it was outlined by me in 1897. Since that date I have treated a number of foul-broody colonies by my plan, and always with good success. I am advised that others have done likewise.

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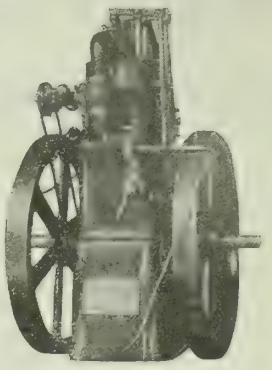
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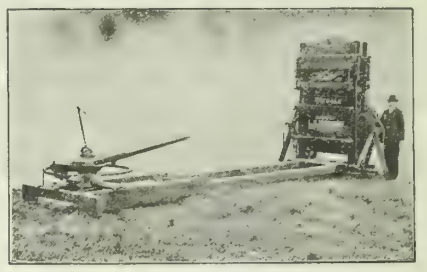
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FRUIT MARKETING.

Apple Sales in Europe.

At the last meeting of the Pajaro Valley Orchardists' Association, with President C. H. Rodgers in the chair, Mr. F. L. MacDonald submitted the following report on sales of apples in Europe:

"You all know what the Oregon apples sold for in England last fall. The Australian apples have done equally well, until recently, when the price went down, owing to other fruit arriving in the market. Those Australian apples have nothing to recommend them but size and appearance. They very much resemble our Lawvers in taste, but are larger and brighter in color. They retailed at from 5 cents to 10 cents apiece. They are packed in boxes made from eucalyptus wood, very ugly but strong, and arrive in perfect condition, without any bruises. They are packed comparatively loose, with plenty of paper and sometimes with excelsior.

"Quite a number of Eastern apples, in boxes, were sold across the water this past winter as California apples. How to prevent this practice is a matter this organization might take up. The best way to do this, it seems to me, would be to only send such a quality of fruit from California that no other section could hope to compare with it.

"The word California is a magic word, and we certainly can raise the fruit to back it up.

"Our packing is also not the best suited for the long haul and the handling. The boxes are too light and the fruit arrives badly bruised. It might be better to use a smaller box for our extra fancy fruit. The French packers have found it very profitable to pack their fancy fruit in 20-pound and even in 10-pound boxes.

"Regarding crop prospects I will say that through our reports we hear that England has a medium crop, The Netherlands and Belgium are a very small crop, and France, south Germany and the Tyrol a fairly good crop. But the European crop does not come into competition with our apples. The East, Canada and Oregon are our competitors. It does not matter very much how large the crop is elsewhere, large, well-colored Newtowns will always sell at a premium, and that is the kind of fruit we must raise. To do this we must all work together, growers and packers. It is unfortunate that this is not more generally the case. The packers are as necessary to the success of the industry as the growers, and harmony in the business would enable us to regulate, if not to fix, the selling price of our fruit.

"Another matter that requires our attention is the consolidation of the Canadian apple growers. They have formed an association and claim to control 60% of the Canadian apple crop, which they intend to market through their own agents. We should be doing the same thing, but the proposition is up to the growers."

Some discussion succeeded Mr. MacDonald's report. He was asked to find out, if possible, the extent that the name of California had been used in Europe on Eastern apples.

Marketing Canned Goods in England.

By United States Consul Walter C. Hamm, Hull, England.

The English climate is damp and the range of the thermometer is limited. These meteorological conditions have produced a taste for a stronger diet than Americans are accustomed to. Natural conditions cannot be changed, but adaptations can be made in catering to appetites so produced, and they must be if a profitable business is to be built up. The peach cannot be grown to any extent on account of the cool, moist climate. No such tomatoes can be produced here as are common in America; the reason is that there is not the abundance of sunlight and the hot days necessary to dissolve their acids. The few peaches grown are tasteless and the native tomatoes are acrid. There is a market for both these foods in this part of England. It is true they cannot be carried far in a fresh state, and the distance from here to America may make their sale prohibitive under present conditions. But both can be preserved, and if presented rightly to the public they ought to meet a ready sale.

Hull, England, May 25, 1905.

SHEEP AND WOOL.

World's Wool Market.

From United States Commercial Agent M. M. Price, Jeres de la Frontera, Spain.

The attention of sheep breeders is being called to the present condition of the wool market. For thirty-five or forty years the price of wool had continually fallen, so that from 1895 to 1900 it had decreased 50% below that of 1870 to 1875. Recently a rise in price has taken place in the world's market. The fall in price was attributed principally to the extraordinary development of wool production in Australia, Cape of Good Hope, Argentina, and Uruguay. These countries produced about 197,000,000 pounds in 1870, 256,000,000 pounds in 1880, and 360,000,000 pounds in 1889. This rapid increase of production enormously augmented importation into industrial countries.

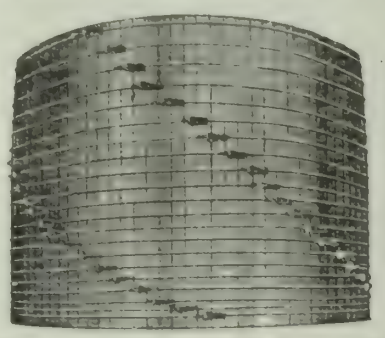
Some years ago there began a progressive decrease of the flocks in European nations. In thirty years there had been a decrease of 34,000,000 sheep in the flocks of England, France, Germany, Austria-Hungary and Spain. The sheep in Australia decreased from 108,000,000 in 1870 to 74,000,000 in 1898. The importation of wool into Europe from Australia, Cape of Good Hope, Argentina and Uruguay amounted to 2,783,000 bales, 2,494,000 bales, 2,445,000 bales, 2,245,000 bales and 2,045,000 bales in 1895, 1901, 1902, 1903 and 1904, respectively. The price of wool has steadily risen since 1901, and in the case of the wool called "cruzados" or "crossed" the price has increased 100% in the London market. This rise is due to diminished production.

From 1840 to 1892 the number of sheep bred in Australia, Tasmania and New Zealand increased with extraordinary rapidity; their numbers then began to shrink, and from 1898 to 1904 the decrease has been enormous. The Australian flocks decreased from 125,000,000 in 1892 to 111,000,000 in 1897, 103,000,000 in 1898, 92,000,000 in 1902 and 73,000,000 in 1903. The frequent droughts were the principal cause of this decrease of 50,000,000 sheep from 1892 to 1903. On account of this fact it is probable that the rise in price of wool will continue. Thirty years ago the countries named bred only Merino sheep of fine wool, but afterwards the growers crossed the breed with English sheep of long, coarse wool, until now the proportion of mixed wool exceeds 50% of the whole. Hence merino wool is scarcer than ever and the caprice of fashion may increase the price far beyond what its quality merits.

Jeres de la Frontera, Spain, May 27, 1905.

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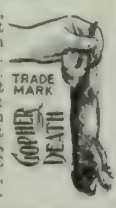
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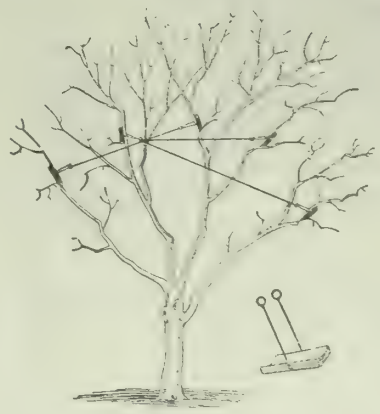
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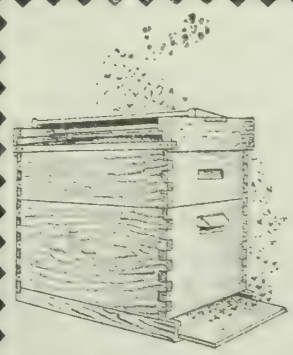
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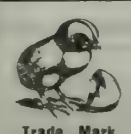
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THE POULTRY YARD.

To Get Hens That Lay Large Eggs.

By Capt. E. P. Mitchell, author of "Practical Poultry Plant," in Pacific Fancier.

Although the White Leghorn is generally conceded to be the best layer for California, yet I have got equally good results from the heavier breeds, such as Light Brahmas, Plymouth Rocks and Buff Orpingtons, but have had to keep them in flocks of from ten to fifteen, whereas the Leghorns can be kept in flocks of from fifty to one hundred, and still average twelve dozen eggs per year. It takes very little more time to feed, water and clean for a hundred birds than for ten.

The White Leghorn eggs usually seen in stores average about ten eggs to the pound, which is very much smaller than they ought to be, for with care and proper selection of the breeding stock the eggs should run six or seven to the pound, and fetch a much better price. I have one thousand layers and rarely find a half dozen cull eggs in the day's gathering. I keep the pullets from laying until they are six or seven months old. They then begin with large eggs, instead of laying small eggs two or three months. Unlike the heavier breeds, Leghorns do not lay during their moult, which takes from ninety to a hundred days. It is, therefore, necessary to have the pullets about ready for laying at a time the hens are beginning to moult. From carefully kept records I find that White Leghorns hatched from late February to May commence laying in September and October, and keep right on until the following August, laying in that time an average of one hundred and fifty eggs per bird. In their second season they lay about one hundred and thirty eggs, and in the third season only about ninety. As it takes about seventy-five eggs to pay for the year's food for a hen, it is obvious that it hardly pays to keep them more than two seasons.

I usually incubate fifteen hundred eggs each year and get from one thousand to one thousand and fifty chicks, from which I can select five hundred choice pullets and sell the balance as broilers. In July and August I sell off my five hundred breeders, which have just finished their second season, and fill in their places the five hundred pullets which will lay through the fall, while the five hundred yearlings are moulting and getting ready for their season as breeders. The pullets remain unmated the first season and their eggs are sold to the market.

If White Leghorns are hatched in January and early February they will moult that year like an old hen, after laying one or two dozen eggs, so great care is necessary not to hatch too early unless broilers are wanted, and not layers. It takes two or three seasons' experience to get the best results from incubators and brooders, during which time one finds that the first hatch of the season does much better than the succeeding ones—in fact, the mortality generally increases with every hatch. At first one naturally reasons that the vitality of the eggs increases as the season wears on, and yet if the first hatch comes off in April, instead of February, it is generally a good one and the brooder mortality small.

An experience of six years has taught me how to raise as many chickens from the last hatch as the first. It is simply a matter of cleanliness. With each succeeding hatch more care is required, as the brooders get staler all the time, and, although apparently clean, a bad smell hangs around them, which increases as the season advances. To obviate this, besides cleaning the brooders each morning, they should be washed out every three weeks, sprayed with a good disinfectant and then thoroughly whitewashed with wash made from good lime. The straw in the inside runs should also be changed and the floor whitewashed. The little outside houses where they go to and from the brooders at six weeks old should be washed out and whitewashed every six weeks and the yard spaded and freshened. Much valuable time is often lost in feeding young chickens four or five times a day, which would be better spent in keeping them clean.

For the first two or three weeks my chicks are fed but once a day by throwing a quantity of different kinds of small seeds and grains, mixed with small charcoal and grit, into the chopped straw that covers the floor of the inside runs. They are kept busy scratching for it all day, and never suffer from the bowel troubles that were so prevalent when I used to feed—or, rather, overfeed—with mashes, etc., several times a day.

Outside of the brood house are long alfalfa runs, where they are sheltered from the heat of the sun by allowing the alfalfa to grow tall.

Of course, one of the most important essentials to strong chicks is the breeding stock and the heat maintained during the period of incubation. I prefer not to hatch from pullets, but from hens in their second season, mated to year-old cocks.

By closely following the above system from ninety to ninety-five chicks can be raised to grown age from every hundred taken from the incubators, which is about as large an average as the hen-grown chicks.

FORESTRY.

Deforestation and Climate.

From United States Consul-General Richard Guenther, Frankfort, Germany.

During the May session of the German Meteorological Society at Berlin a lecture on "Deforestation and Climate" was delivered by Dr. Hennig, from which I take the following extracts:

The interest in deforestation and forestry may be called general and public. Whether forests exercise a perceptible influence upon the climate is a very old question, and even to-day it is not definitely settled. In many countries a drying up of the climate has occurred, which is shown perhaps most strikingly in almost the whole of Africa. That deforesting has assumed constantly growing proportions in almost every part of the world is still more apparent. The climate of Greece, where to-day 16% of the area is covered with forests, has deteriorated. An increase of temperature and decrease of rain are noted, compared with ancient times, especially in Attica, which was thickly covered with forests about three thousand years ago, and where hardly any rain now falls, while the heat in the open air attains a degree which would make the "Olympian games" almost an impossibility. A similar condition exists in the Peninsula of Sinai, where thousands of years ago the people of Israel lived in a luxuriant and fertile country and where to-day only forestless deserts abound. Palmyra, also once a flourishing oasis in the Syrian desert, presents to-day only a desolate waste of stones and ruins. In Mexico, where the Spaniards cut down the forests in the mountains, droughts changing to devastating floods are now noticeable, especially in the vicinity of the City of Mexico. In upper Egypt, where only one hundred years ago rain was abundant, drought now usually prevails. In Algeria, where, since the middle of last century, the forests have been cut down on a large scale, dry weather has increased, and in Venezuela the level of Lake Tacarigua, to which Alexander von Humboldt drew attention, has been lowered in consequence of deforestation.

If these and other facts are kept in mind the sentence, "Man traverses the earth and a desert results," is understood. It must not be forgotten, however, that this applies mainly to the influence of civilization upon appearances and is not always due to climatic changes produced by deforesting. Some authorities even deny the influence of forests on the weather and climate. It can not be denied, however, that dense forests favor moisture and prevent the drying out of the soil to a considerable degree. At any rate, deforesting, which in modern times assumes constantly growing proportions for industrial and agricultural purposes, is of universal importance.

Germany, with a forest area of 26%, realizes annually nearly $60,000,000 worth of timber therefrom, while the wood importations are about of the same value. The consumption of wood increases from year to year, and systematic forestry has not succeeded in keeping up the forest area of Germany. If it is furthermore borne in mind that Canada, which formerly possessed more than 300,000,000 acres of forests, has to day only a forest area of about 225,000,000 acres, it becomes evident that the question of deforestation assumes great importance. If civilization continues to change the face of the earth the problem of its wood supply will present itself like that of coal and force the finding a of suitable substitute.

Frankfort, Germany, May 16, 1905.

THE VETERINARIAN.

Answers to Queries.

By E. J. Creely, D. V. S., Dean of San Francisco Veterinary College.

A CASE OF ACUTE INDIGESTION.

To the Editor:—Referring to Dr. Creely's remarks in the Pacific Rural Press of July 1, for which please accept my thanks, I beg to say that the mare's teeth were examined by Dr. C. E. Graves of Santa Cruz, who holds a certificate as a qualified veterinary surgeon, and that the symptoms of her ailment are as follows:

Disposition to look back, mostly at the right side, while standing with hind legs wide apart and left hind leg slightly forward. If turned loose in corral she lies down quietly most of the time, does not roll nor kick and never shows signs of severe pain. Appetite and pulse remain normal during the attack, which may last one, two or three days and return at intervals of two or three months. Urinating is scant, we think. She picks up quite quickly afterwards, but a week or so before fails rapidly in flesh and energy. We have given sulphate of iron (2 drams) and Peruvian bark (4 drams) morning and evening during about four weeks some time ago, but she eats well now and has a very glossy coat.—E. C. W. MacDonald, Aptos.

Your mare is troubled with acute indigestion. I would advise you to give 1 quart of pure olive oil, 2 ounces of nitrous ether, 2 ounces of turpentine, after which give the following:

Soda bicarbonate 4 ounces.
Bismuth subnitrate 1½ ounce.
Iron sulphate 1½ ounce.
Nux vomica 2 ounces.

Mix and make twelve powders, and give one daily; also a teaspoonful of powdered gum acacia each evening. Feed dry rolled oats only, a bran mash once or twice weekly, and avoid musty or dusty hay. Mix plenty of salt with the oats, and give her as much water as she will drink several times daily. E. J. Creely, D. V. S.

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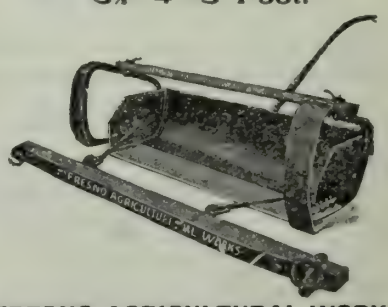
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School Agriculture.

The introduction of agriculture as a public school study will not fail for lack of text books, and this is a very important consideration. Although a teacher who is dependent upon text books is rather a poor article, the absence of suitable text books is a disadvantage to teachers who know how to use books properly. We have already spoken favorably of several books which will be helpful, and note with pleasure the latest, which is "Agriculture Through the Laboratory and School Garden," by C. R. Jackson and Mrs. L. S. Daugherty, State Normal School, Kirksville, Mo., published by Orange Judd Co., New York. The authors' aim has been to present actual experimental work in every phase of the subject possible, and to state the directions for such work, so that the student can perform it independently of the teacher, and to state them in such a way that the results will not be suggested by these directions. One must perform the experiments to obtain the results. A carefully outlined chapter with specific references is given to each of the following general subjects: "Nature and Formation of Soils;" "Classification and Physical Properties of Soils;" "Soil Moisture and Preparation of the Soil;" "The Soil as Related to Plants;" "Leguminous Plants;" "Principles of Feeding;" "Rotation of Crops;" Milk and Its Care;" "Propagation of Plants;" "Improvement of Plants;" "Pruning of Plants;" "Enemies of Plants;" "Ornamentation of Home and School Ground."

The book, although primarily intended for use in schools, is equally valuable to any one desiring to obtain, in an easy and pleasing manner, a general knowledge of elementary agriculture. It contains a large number of engravings, which are not only attractive pictures, but are actual illustrations of much value in explaining the text. It is printed in large, clear type on handsome, heavy paper, bound in cloth, and will be an ornament to any agricultural library. It can be ordered through the PACIFIC RURAL PRESS at $1.50, postpaid.

American Fruits in Ireland.

By UNITED STATES CONSUL A. K. MOE, Dublin, Ireland.

The superior packing of American apples, and their low price, as compared with a similar quality of fruit grown in Ireland, together with a favorable demand for such apples here, should lead our American exporters to renewed energies in the matter of securing a market in Ireland. Heretofore this has been accomplished through Covent Garden in London, but there is an excellent opportunity for the establishment of a central distributing station in Dublin, thus avoiding delays of transportation, resales, and middlemen's profits. It is unnecessary to point out that if this market is not secured now the active and intelligent methods of the Irish department of agriculture will very soon make it impossible to compete successfully with the Irish product. Pears should also find a ready market in Ireland, as the fruit is in demand, but can not be successfully cultivated here.

Statistics of the thirteen weeks, from September 3 to November 26, 1904, show that 1406 hundredweight (157,472 pounds) of apples and 292 hundredweight (34,624 pounds) of pears were imported into Ireland. With direct importation and a central distributing market, say in Dublin, a very much larger demand could be created. There is no cold storage warehouse here, but as the climate is generally cold enough to prevent early decay of fruit the absence of such an establishment need not interfere with efforts to establish trade in this country.

Dublin, Ireland, May 25.

Tom—I earn less than $2.00 a day, and yet I am a Christian.

THE DAIRY.

Dairy Products and Dairy Exports.

The value of the dairy products exported from the port of San Francisco, as gathered by the State Dairy Bureau, is shown in the table below:

Year.	Butter.	Cheese
1894	$ 90,095	$ 28,442
1895	71,181	27,894
1896	59,723	35,270
1897	88,205	39,452
1898	116,722	54,401
1899	99,417	65,965
1900	80,593	63,509
1901	91,687	60,736
1902	167,936	82,172
1903	286,360	125,892
1904	258,531	107,320

CONDENSED MILK.

1903	$336,882
1904	366,466

ANNUAL VALUE OF THE DAIRY OUTPUT.—In former reports the State Dairy Bureau has presented figures for the purpose of showing the annual value to the State of the various products of the dairy industry. The figures are mere estimates of the product upon average prices in the markets, without making allowance for the difference in the grade of product. For this reason very conservative prices are used in the calculations. In accordance with this statement the following figures are presented:

1902-1003.

Value of 34,676,311 pounds of butter	$ 8,669,077
Value of 7,141,637 pounds of cheese	856,996
Value of 126,874 cases of condensed milk	621,233
Value of milk and cream consumed	6,682,738
Value of calves from dairy cows	1,724,844
Value of pork produced on milk by-products	1,881,264
Total	$20,436,152

1903-1904.

Value of 35,636,909 pounds butter	$ 8,374,673
Value of 6,133,898 pounds of cheese	613,898
Value of 186,905 cases of condensed milk	747,620
Value of milk and cream consumed	7,016,872
Value of calves from dairy cows	1,820,864
Value of pork produced on milk by-products	1,801,640
Total	$20,375,567

It should be stated that the prices on which these estimates are based are wholesale. When allowance for the vast amount of milk that producers sell at retail is taken into consideration, the conservatism of these figures becomes apparent. In general, prices for the last year ruled lower than for the preceding year.

Vetches for Hay.

J. B. Borough of Rogue River valley, southern Oregon, according to a local paper, gave a trial to the growing of vetches for hay this year and so profitable was the experiment that he will sow a large field this fall. The Rogue River Courier says that Mr. Borough sowed last October two and one-fourth acres to vetches, using 105 pounds of seed, with an equal amount of wheat. From this two and one-fourth acres of land he cut nine tons of hay and it cured as green and in as prime condition as the best alfalfa. This vetch is a kind of pea and makes both grain and hay, and is considered by stockmen to be more valuable, pound for pound, than any other hay grown.

The special point that makes vetches of value to Rogue River farmers is that this plant will grow on land too dry to be profitable for alfalfa. It is a winter growing plant and matures itself before the dry season sets in. Mr. Borough is convinced that vetches should be sowed early in September, or as early as the fall rains will permit. As to seeding, he thinks that not less than sixty pounds each of wheat and vetch should be sown to the acre on the average land, but the quality and dryness of the land should govern the quantity of seed.

THE Fresno Nursery Co. has been reincorporated, with a paid up capital stock of $50,000—F. H. Wilson, president, 250 shares, $25,000; Thos. Jacob, Visalia, vice-president, 100 shares, $10,000; Morphew Jacob, Visalia, 100 shares, $10,000; Chas. A. Chambers, secretary, 49 shares, $4900; W. A. Conn, attorney, 1 share, $100.

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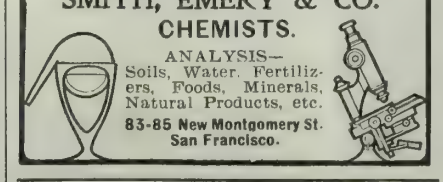


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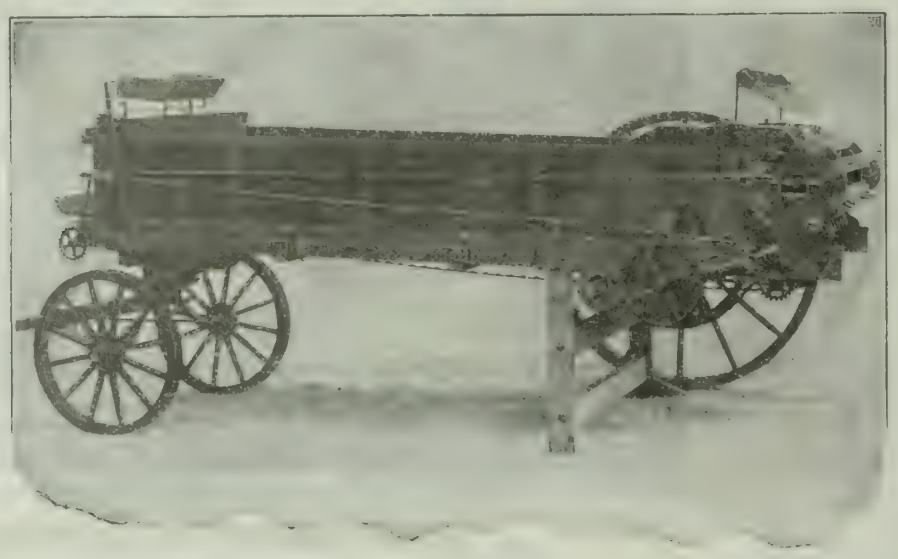
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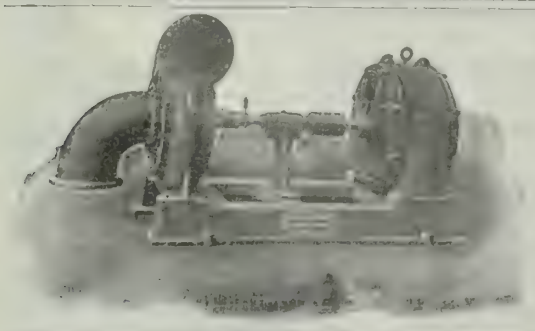
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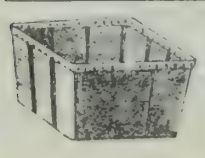
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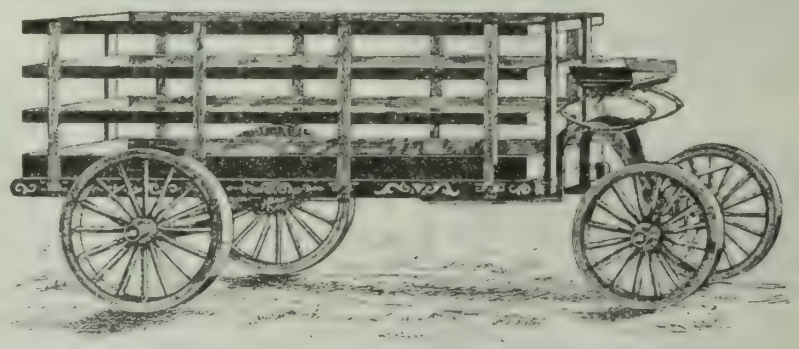
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 4. SAN FRANCISCO, SATURDAY, JULY 22, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

California Asparagus Canneries.

First for their uniqueness and second because they illustrate the development of the reclaimed river lands where they are chiefly located we give prominence to the asparagus canneries of California by the use of their portraits on this page. We reproduce the pictures from the special bulletin on asparagus rust by Prof. R. E. Smith of the University of California experiment station, which is notable because it gives the record of work which has restored confidence in asparagus planting by demonstrating that the disease is controllable.

Within the last decade asparagus planting has been undertaken principally in the delta country between Sacramento, Stockton and Port Costa, at the junction of the Sacramento and San Joaquin rivers, where the peaty and sedimentary soils, after reclamation by levees and pump drainage, proved especially suited for the production of canning asparagus. In 1903 there were nearly 6000 acres of asparagus in this section. The leader in this development was the Hickmott Asparagus Canning Co., with two canneries (Figs. 1 and 2), and to Mr. Robert Hickmott belongs much of the credit for the present popularity of canning asparagus. With great confidence as to the future of the business he went ahead at Bouldin Island, contracting for the planting of an enormous acreage and building canneries to handle the product

Other canners were also early in the asparagus field, and the California Fruit Canners' Association, after its organization, began to build up an asparagus business which is rapidly enlarging as the later-planted fields come into bearing. Their cannery at Milpitas (Fig. 3), established originally by the Oakland Preserving Co., handles most of the product of that district, which is an old asparagus growing section, while that at Sacramento was one of the first to pack asparagus, and takes almost all of the vegetable produced by the growers on the outskirts of that city. They have, further, an asparagus cannery at Vorden, on the great Van Loben Sels estate (Fig. 4) and likewise pack more or less asparagus in their San Francisco canneries.

The Golden State Asparagus Co. is the third of the important asparagus packers. Their new cannery at Andrus Island (Fig. 5) is well equipped for the business and situated in the midst of their large and increasing asparagus fields.

Hunt Bros., large fruit and vegetable canners, have recently built a small asparagus cannery at Antioch (Fig. 6) to pack asparagus from various points in the island section which they have contracted. An asparagus cannery has also been built at the Sylvester & Graves place below Stockton.

Other companies can more or less asparagus from the city markets, but these comprise all those who make a specialty of the business, packing directly from the fields. The process is clean and appetizing and the product healthful and delicious, being immeasurably superior to fresh asparagus bought in the market and cooked at home. There are now about 7000 acres of asparagus in California.



Fig 1.—Cannery No. 2, Hickmott Asparagus Canning Co., Bouldin Island.



Fig. 2.—Cannery No. 3, Hickmott Company, Bouldin Island.

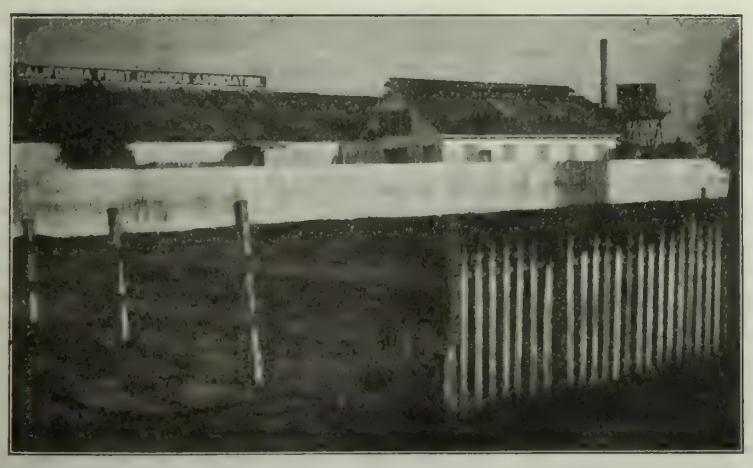


Fig. 3.—Milpitas Cannery, California Canners' Association.



Fig 4.—Vorden Cannery, California Fruit Canners' Association.



Fig. 5.—Andrus Island Cannery, Golden State Asparagus Company.



Fig. 6.—Hunt Brothers' Asparagus Cannery, Antioch.

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SAN FRANCISCO, JULY 22, 1905.

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The Week.

The season has slowed down again and the lower temperature is welcome, except, perhaps, near the coast, where house fires have been pleasant, nights and mornings. And yet summer coolness is on the whole as delightful a thing as winter warmth. This fact is emphasized each day by the telegraphic reports from the other side of the mountains that on Monday last the hot wave that swept over New York the preceding week, causing scores of deaths and hundreds of cases of prostrations, returned with renewed intensity, the temperature being by far the highest of the season, reaching 103° in the streets. In Chicago four deaths and fourteen prostrations were the result of the heat. The weather bureau at Washington says that the entire country from the Mississippi valley eastward to southern New England and the Florida coast is in the midst of excessive heat and that at Cleveland eighty-two babies died in nine days as the result of heat combined with bad milk probably. These are terrible afflictions and one should be thankful for exemption from the conditions which inflict them.

The distant fruit trade is still prospering, some days taking out up to fifty cars from Sacramento. The transportation companies seem to be doing better by the business. The Union says that the service between Sacramento and Eastern auction markets has been better this season than ever before in the history of the business, as fruit is being put in Chicago in six and a half days. The railroads east of Chicago are doing likewise to the Eastern auction markets—especially with export trains, one train of this fruit arriving in New York eight days and four hours after it left Sacramento. This comes pretty near being ideal, and it looks as though there would not be so much to kick about at the next State Fruit Growers' Convention.

In fruit shipping it looks as though Mr. Powell's suggestion of the possible advantage of cooling fruit at once was being taken up very quickly, for there has been an incorporation formed, to be called the Cyclone Car Cooling Co., the purpose of which is to establish on lines of car transportation certain machines for the cooling of cars of fresh fruit, so as to preserve refrigeration and insure the soundness of fruit upon arrival at its destination. Mr. Powell is not much of a blower about his own work, and this California company may help him out a little. It is another illustration of how quickly business interests seize upon the suggestion of scientific experimenters nowadays.

Wheat sagged a little early in the week, but is stiff again at the old figures. Good milling wheat is to be chased, for much low grade grain is expected. There seem to be plenty of ships on the way hither. Barley has arrived freely and prices have declined, but are still above the views of exporters. Oats have been very active and score an advance, with a small visible supply. Corn is in small trade and weaker. Rye holds value. Beans are selling well and strictly good lots would go above quotations. Peas are in moderate supply and prices for new crop not yet fixed. Bran and middlings are scarce and values firm. Hay is abundant and weak, tending downward. Meats are unchanged, but veal is doing better and hogs easier. Butter has gone up a notch, but cheese is plenty and in slack request. Eggs have advanced with quick sale. Poultry is in heavy supply and slow; even squabs are neglected. Potatoes have arrived freely and declined. Lemons have dropped the hot weather demand and other citrus fruits are unchanged. Deciduous fruits are in good supply at prices noted in our Market Review. Dried fruits are quiet and waiting. Prunes are showing some signs of action. Nuts are cleaning up well for the new crop. Honey is plenty and weak. Hops are unsettled. Wool is quiet but firm.

Those who can go to the Portland Fair the third week in August will find much in the irrigation line. The National Irrigation Congress, of which Governor Pardee is president, will begin on August 21 a four days' session and will work in five sections, with a chairman for each, who is recognized as an eminent authority in his particular branch. Every attendant should find some phase to his taste. There is also the Government irrigation display on the Exposition grounds, which shows completely the operation of reclamation work to date and the plans for the future. The display was installed for the benefit of the delegates attending the congress. It will be a profitable week for those interested in irrigation.

State Fair affairs are assuming good shape. We are glad to see that Senator Benj. F. Rush of Suisun has consented to a re-election of the presidency of the State Board of Agriculture. Mr. Rush stands for what is high and good at fairs, and his prominent connection with breeding interests makes him able to work well for it. James Whittaker of Galt will be vice-president, and he is strong on the fruit side, and Mr. Stabler, whose appointment we recently rejoiced over, will work hard for the best he can get for real significance and value. We like the outlook. It will not be possible this year to get all that is desirable, but we believe the society is getting rapidly in the right direction.

The widely honored and esteemed Mrs. Anna E. K. Bidwell, widow of the late John Bidwell, has given her fellow citizens of California another reason to be proud and enamored of her. She has given the city of Chico 1902 acres of beautiful land to be used as a public park. In the deed of gift Mrs. Bidwell explicitly specifies that the park is to be maintained as the joint gift of herself and her late husband. It is rather trite to speak of the nobility of such a use of property rather than concentration of it in personal ownership, but is it not splendid nevertheless? It is really the duty of every one who has been blessed with great estate to think and act generously toward the public. Mrs. Bidwell's example should be widely emulated. Think of what a grandly endowed State California will be if all who are now rich should do something for the public good!

Upon another page is an account of the new department of forestry. On Tuesday in Sacramento the State Board of Forestry was organized, with Acting Governor Anderson, Secretary of State Curry and Forester Allen present. The Governor was elected president and Mr. Allen, under the law, secretary. The forester was instructed to familiarize himself with local conditions, make a compilation of all the forestry laws for publication, and report back to the board at the earliest possible moment.

QUERIES AND REPLIES.

What Can Be Grown at Santa Barbara.

TO THE EDITOR:—Being particularly anxious to secure the best results in the planting of flowers and fruit, I venture to ask if it is advisable to have a specimen of the soil examined to determine what it is best fitted for, and to learn what should be supplied for the best growth of roses, lilies and various flowers not found in the vicinity. I am particularly anxious to succeed with lily-of-the-valley, peonies and the perennial phlox and delphinium. I have been told that these plants cannot be successfully raised here, but I can understand no reason for such failure. In the East violets and lily-of-the-valley, iris and peonies grow side by side, and in each pair, while the first flourishes here, why should the second fail? In this garden spot I think the culture of flowers is sadly limited, and I am anxious to have very many varieties not found here. Also I should be grateful to learn of the best varieties of fruit for this soil and location.

Would it be possible for me to secure a culture of the nitrogen fixing bacteria? I should particularly wish to employ them for the improvement of lawn and for the raising of sweet peas.—NEW COMER, Santa Barbara.

We fear you have not looked about in your new district to observe how well some of the flowers, which you mention as not found in your vicinity, do. It is not likely that examination of the soil would show any light on the difficulty which exists in the growing of certain flowers which are really less satisfactory than at the East. It is probably due rather to the dryness of the air at the seasons when these plants are in bloom. All of them would succeed in good garden loam, kept fairly moist by rainfall or irrigation, providing the atmospheric conditions were suitable. Violets and iris, as you say, succeed with you as they do in most other parts of the coast region of California. Lily-of-the-valley is exceedingly difficult to grow except under artificial conditions of moisture, such as can be had under glass. In this district fairly satisfactory results can be had with lilies-of-the-valley grown on the east side of buildings, fences, etc., while they would fail if placed on the south and west sides where the springtime heat becomes very high and the air very dry. The Japanese arborescent peonies do well in most parts of the coast region except that they are disposed to bloom during the rainy season and are sometimes, in this part of the State, destroyed of beauty by drenching winter rains. We should imagine that in your situation and in suitable exposures they would do very well indeed. The herbaceous peonies, which are popular in the East, are little grown in California. If you will try experiments with the flowers which you wish to grow, locating them in different exposures of sun and shade, you will probably succeed in growing many things which have the reputation of failing in the locality. At the same time, one must not altogether disregard the popular verdict on a flower in any locality, because it generally means that under ordinary conditions, it is not satisfactory. You can grow almost any kind of deciduous or evergreen fruit that you desire in the Santa Barbara district, certainly well enough for amateur delight, although many of them would not be desirable to grow on a commercial scale.

You can get nitrogen fixing bacteria from the seedsmen, as they are not at present distributed by the Government. They are not of any particular use in lawn-making, unless you wish to grow clovers. As for the raising of sweet peas, these flowers do so beautifully in California, if sown early enough—that is, in October or November—that the probability is that all the bacteria they require are already present in the soil.

Sulphuring Grape Vines.

TO THE EDITOR:—Will you explain how sulphur checks mildew in vines, how to apply, etc.? What is the philosophy of its application? I have asked several of my neighbors, vineyardists, but no one can give me any idea. They all sulphur merely because some one else does, with the idea that it stops mildew, and every one has his own way of applying it. I have not been in the business long, so give me all information possible.—BEGINNER, Calistoga.

Sulphur checks the spread of mildew because the vapor of sulphur which is set free by heat kills the spores of the mildew, and thus prevents further invasion of the tissue by the fungus. It is not, then, the direct contact of the sulphur so much as the action of the vapor which renders sulphuring effective.

From this point of view it has some time been held that sulphur could be placed on the ground just as well as upon the vine, but experience proves that it is better to have it upon the vine leaves in order that the vapor, as set free, will be nearer the foliage which is to be protected. There is no doubt that adequate sulphuring does check mildew, but there are places where the mildew does not greatly prevail, rendering sulphuring unnecessary, and there are some seasons in which mildew is much worse than others according to weather conditions prevailing. This has been a very bad year for mildew and it has done considerable injury in places where it does not usually appear.

Failing Vine Leaves.

TO THE EDITOR:—Enclosed find some leaves of the Muscat grape. Please explain what is the cause of their drying up. Many are so dry and brittle they could not be handled. They came from Mr. Whiting's vineyard, near Heber. On one side of the vineyard many leaves are dead—not all the leaves on the vine, but from 10% to 50%. On the other side of the vineyard the vines are all right and green growing nicely and fruit in good shape. Where the leaves are dead the grapes are poorly matured, small and motley looking. Mr. Whiting thinks the water runs so quickly over this side that perhaps the vine does not get sufficient. But we want to know if this is a disease or not.—WM. KELLY, Imperial.

The grape leaves are not affected with any disease. The dying of the leaves might be due to lack of water, or to the presence of alkali. If Mr. Whiting has reason to think that the vines do not receive the moisture they require, it is not necessary to go further for an explanation. This should be determined by digging into the soil and ascertaining its condition, and then arranging in such a way that there shall be stops in the ditch or checks made in the vineyard, or some other means adopted for wetting this portion of the vineyard thoroughly and deeply during the next growing season. They should also be kept growing this fall, for if they are failing for lack of water they are likely to die outright. If the trouble is alkali, a free use of water, if the soil is loose and deep, will lessen its strength near the surface where the vine roots are.

Sources of Information About Common Cultures.

TO THE EDITOR:—Can I get from the Experiment Station publications giving methods of growing tomatoes and other garden crops? I am desirous of increasing the local interest in such crops by writing articles for our local paper and desire sources of information to draw from.—WRITER, Southern California.

The Experiment Station's publications do not cover just the line of work you request. Their effort is mainly directed to the investigation of obscure problems, methods and materials which can not be demonstrated by the teachings of growers' experience. These matters of investigation seem to constitute the proper function of an experiment station. The field of the agricultural newspaper and of all local newspapers which take up agricultural subjects is to extend knowledge of such work and to present the results of experience from which beginners may take suggestions. For this reason the Experiment Station does not undertake, as a rule, subjects which are quite fully explained in the local and the agricultural journals of the State. If you will read carefully the columns of such papers you will find abundant material upon which to promote the cultures which you describe. It would, of course, be even better for you, as an original writer on these subjects, to visit localities in which things are done which you believe could be introduced into your district and in this way produce articles which will be of local value in your region and will then be transferred to papers of wider circulation and their usefulness vastly increased. There can hardly be too much such writing, providing it is accurate in description of methods and materials and not given to exaggeration in statement of results.

Treatment for Gnawed Trees.

TO THE EDITOR:—May I ask you for advice on the treatment of young apricot trees whose bark has been gnawed from the ground upward 8 to 14 inches? Early in 1903 I planted 400 Tilton apricots between Sausalito and Mill valley, and during that year they did remarkably well. The long, dry summer seemed to suit them. Last year they did less well. Some months ago I found a dozen or so dead and deprived of their bark above the ground, and now a hundred or more are in the same condition, likewise some apple trees. Would painting with coal oil or some poisonous compound help to save the survivors?—GROWER, Marin county.

You do not seem to have detected the animal which is injuring your apricots, and, according to your description, it might have been anything from a jackrabbit to a pig. Young trees which have been partially disbarked should be wrapped to prevent drying out of the wood, and fruit trees which are liable to such injury may be rendered distasteful to most gnawing animals by treating the bark with a decoction of Quassia bark or aloes—one pound to four gallons of water. These substances are intensely bitter and render the bark distasteful to nearly all kinds of gnawers. It would, of course, be desirable to ascertain what sort of pest you have to contend with, and, if possible, to exclude it by fencing or otherwise.

Straw in Silo Bottoms.

TO THE EDITOR:—Is it practical in filling silos to put in straw with corn so that the surplus corn juice will be absorbed by the dry straw, and in that way be preserved instead of passing through the dirt foundation of the silos and being lost? Doubtless the straw does not undergo the same chemical change, and heat, like the corn, does and probably would leave the straw moldy and useless, because the air had not been driven out as it is with the corn. We will start filling silos the middle of August. My plan was to put 8 or 10 feet of straw in the bottom of each 30-foot silo.—DAIRYMAN, Santa Barbara.

You are right in thinking that an amount of straw in the bottom of a silo would be a source of excessive fermentation and decay because of the air contained in the straw. It would certainly be safer for you, if you find it necessary to use straw at all, to run it through the cutter, but it is not often necessary to use anything of the kind providing you allow the corn to become sufficiently matured. It is a mistake to silo corn too young. It should reach the roasting-ear stage; that is, the kernels should be glazed. When this is the case there is seldom any great excess of moisture in the corn; in fact, if the weather happens to be very dry, it is sometimes desirable to wet down the material by using a little water in the silo. It seems to us that your proper course is to regard the maturity of the corn rather than to provide for taking up moisture from corn which is siloed too green.

Peas in an Orchard.

TO THE EDITOR:—I have a young orange orchard of fifty or more acres coming in and I wish to sow among the trees this fall Canada field peas as a cover crop. I desire to learn in purchasing the peas if it would be better to buy peas grown last year or those grown this year. Last year I sowed broadcast, but the result was not quite satisfactory. Would you recommend that they be drilled in? If so, how deep and how wide apart should the drills or rows be? It may be that after the peas are planted that rain will not come quickly enough to start the peas, or if they start it might turn so dry that they would die unless irrigated. Some arrangement should therefore be made so that I can irrigate after the peas are up. What kind of a drill should I use, and should I furrow for irrigation at the time I sow the peas, and, if so, should the furrowing be done with a separate tool or by furrowers attached to the drill?—ORCHARDIST, Los Angeles.

You should certainly get peas of the last crop available. They are not only quicker in germination, but old peas are very liable to be weevily and undesirable. Many growers are putting in peas in drills rather than broadcast, and the ability to maintain cultivation is a very desirable point. The depth of planting depends upon the character of the soil. If it is a light, sandy soil, peas can be covered 3 inches or more, while in a heavy soil an inch is sufficient. The width between the rows depends upon the tools you use for cultivation, and various distances prevail from 1½ to 2½ feet. On a large scale a regular bean drill drawn by horses for dropping seed at regular distances would be an advantage. And on a smaller scale on light soil, hand drills are available. Many growers drop by hand in a shallow furrow made by single plow. After the peas are up furrows may be made for irrigation with various devices. There is no fixed rule or set of appliances for this work. One has to consider his soil, the extent of the work he has in hand and the relative suitability of the various tools offered by the implement dealers.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 17, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather and much lower temperature followed the hot wave of the preceding week, and conditions were generally favorable for all crops. Harvesting, thrashing and hay baling continue. Grain in most sections is a much lighter crop than expected, and in some places the yield is too light to pay for harvesting. Grasshoppers and rust caused immense damage to grain in many sections. The hay crop is heavy and of excellent quality. Hops at Wheatland are making satisfactory progress and give indications of a good crop. The recent hot weather caused a rapid ripening of deciduous fruits and also considerable damage to prunes, plums and grapes. The cool weather of the past week has been very beneficial, however, and the loss will probably be less than anticipated. There is a large crop of plums and the quality is good. Peaches are light in some sections. Almonds will yield nearly an average crop. Citrus fruits are in good condition.

Coast and Bay Sections.

Cool, clear weather prevailed during the week and it was very beneficial to all crops. The extreme heat of the preceding week caused considerable injury to deciduous fruits, grapes and berries, but the loss will not be as heavy as anticipated, owing to the more favorable conditions following. Forest and field fires caused great damage in Alameda, Sonoma and Santa Clara counties. Grain harvesting and thrashing are progressing and a fair crop is being gathered. The Hessian fly and grasshoppers caused much damage to grain and the crop will be lighter than expected. Hay baling continues; the crop is heavy and the quality excellent. Hops are making rapid growth. Feed is still plentiful and cattle are doing well. Fruit picking, drying and shipping are in progress. Grapes and almonds give promise of large crops. Walnuts were somewhat injured by heat, but will yield a fair crop. Cloverdale oranges are in excellent condition.

San Joaquin Valley.

Clear weather prevailed during the past week, the first of which was very warm and the latter moderately cool. Grain harvest is making rapid progress; the yield is light but the quality is fair. Peaches are being shipped in large quantities to the canneries, which are running to their full capacity. Some peaches and plums are being dried. Heavy shipments of deciduous fruits and watermelons were made during the week. Table grapes are being marketed in small quantities, as the crop is advancing slowly. Tokay grapes were badly damaged by the hot weather, but other varieties are reported uninjured. The third crop of alfalfa is being harvested and will be a good crop. Feed is plentiful and stock are in good condition.

Southern California.

Clear, cool weather prevailed during the week, with frequent fogs in the coast districts and a light local shower in San Diego and vicinity on the 14th. The weather was too cool for fruits and vegetables and somewhat detrimental to grain and hay. The rain caused no damage. No great injury was done to grapes or deciduous fruits by the heat of the preceding week, and the injury to beans and sugar beets was not serious. Grain harvesting and thrashing are progressing rapidly and hay baling is nearly completed. Both the grain and hay crops are the best for several years. Sugar beet harvest continues. Apricot drying is completed in some places and progressing in others. Blight is showing on walnuts at Anaheim and the crop will be light. Citrus fruits are in good condition.

EUREKA SUMMARY.—In many places hay is mostly cut. Grass in interior and high altitudes is turning brown and rain would do more harm than good, but crops generally need moisture.

LOS ANGELES SUMMARY.—Fruit is drying slowly in the coast sections on account of cool, cloudy weather. Oranges and lemons are making vigorous growth and promise good crops. Wild feed is plentiful on ranges. Stock are fat and in good condition. The honey yield is very good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 19, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.00	.75	.05	60	52
Red Bluff	.00	.00	.11	.01	96	56
Sacramento	.00	.00	.00	T	88	54
San Francisco	.00	.00	.02	.01	60	52
Fresno	.00	.00	.00	T	96	54
Independence	.00	.00	.00	.03	96	54
San Luis Obispo	.00	.03	.00	T	72	52
Los Angeles	.00	.00	.00	.01	82	60
San Diego	.14	.14	.00	.02	70	60
Yuma	.00	.00	.00	.10	102	66

HORTICULTURE.

Studies of Crown Gall on Nursery Trees.

Crown gall is another name for the excrescences near the root crown of fruit trees which is usually called root knot in California. The following is a summary of a lecture given at the annual meeting of the American Association of Nurserymen at West Baden, Ind., by George G. Hedgcock of the U. S. Department of Agriculture on "Some of the Results of Three Years' Experimentation with Crown Gall":

ON APPLE TREES.—The disease ordinarily called crown gall on the roots of the apple tree is most prevalent on grafted trees at the union of the root and scion, and is more often found on the lower end of the scion. Only a small per cent of budded trees are ordinarily diseased, but as high as 50% of some varieties are diseased in grafted trees. The disease is more or less prevalent in all localities, wherever the apple trees are grown from root-grafts. In the course of the investigation no nursery investigated has been found free from this disease.

Apple crown gall has two forms, one of which is devoid of small roots in the region of the gall, the other has few to many small roots arising from the gall or its vicinity. A third form now under investigation is here assumed to be a distinct disease, and consists of numerous small roots arising from a slightly thickened tap root, in which there is no distinct gall formation. This is designated as the "hairy root" disease of the apple. The "hairy root" disease is not included in the data from which the following results were drawn. Care should be taken also not to confuse with crown gall in the nursery, two other gall diseases of the apple tree, one due to the woolly aphis, the other to the presence in the root cells of very tiny worms, known as nematodes. The galls produced by these two parasites are smaller and softer than true crown gall, and are more numerous and more apt to be found on side roots. There is also a soft gall often found on apple seedling roots, and occasionally on grafted trees, which differs slightly from the harder form common on grafted trees, and which may be due to a different cause.

RESULTS OF EXAMINATIONS.—Careful examination for two years conducted both in the greenhouse and in the nursery gives the following results from inoculations made with the common hard type of apple crown gall, devoid of "hairy roots." Apple seedlings grown in the greenhouse from seeds sterilized with concentrate sulphuric acid, planted in a soil which had been sterilized in a soil autoclave at a steam pressure of fifteen pounds to the square inch, watered with boiled river water, were used for experimentation. Such seedlings remained free from disease throughout the experiment, both in control and in inoculated plots. A portion of these were inoculated by inserting a piece of living gall in a wound upon the root, and wrapping it with a thread, others were inoculated by mixing minced galls with the soil. Carefully selected apple seedlings from the nursery were inoculated in the same manner in both field and greenhouse. The average result of all such inoculations for two years are 10% diseased in the inoculated and 14% diseased in the control portions of the plots. No reasons for the excess in the control can be given.

Extensive inoculations of root grafts for two years gave in 1903 an average of 44% diseased trees in the inoculated portion, and 39% in the control parts of the plots. In 1904, with an equally large number of trees, 9% were diseased in the inoculated and 15% in the control portion of the plots. An average for the two years gives 27% diseased in both the inoculated and the control portions. About 10,000 apple trees were used in these experiments. No evidence can be deduced from the results that the disease is contagious, since the inoculation was thoroughly made with a large quantity of minced galls at the time of planting.

It has been claimed that the disease kills the apple tree in three years in the case of young trees. An experiment with 300 trees to determine the effect on the growth of diseased trees at the end of one year showed no difference in the appearance of the diseased from the healthy trees. Of 175 diseased trees five were dead at the end of the year; of 125 healthy trees of the same age, seven were dead. Trees grown in the nursery under the same conditions, selected from the same grade, and with equally developed roots, were used, the only difference being that each of the diseased trees possessed a well developed gall on the root. Outside of experiments by the Department considerable data has been collected, which indicate that the disease does not greatly shorten the life of the young tree, unless the galls completely encircle it above the root system, and in such cases that deeper planting of diseased trees will probably enable them to form a system of roots above the encircling gall and thus prolong their life. An orchard of 50 crown gall trees near Brussels, Ill., at the end of eight years contained 40 healthy, vigorous trees, eight having died, and two were dying with a root rot, which may or may not have gained entrance through the gall. No replants have been made at any time during the growth of the orchard. There are now under observation orchards containing 14,000 crown gall trees. Experiments on the nature of the disease in 1905 include 110,000 apple root grafts and 10,000 seedlings.

A DIFFERENT THING.—The crown gall of the peach, plum, cherry, raspberry, almond, and apricot has been proven by careful inoculation to be one and the same disease on each plant. It is very contagious when inoculated into wounds upon the roots of the plants. Peach and raspberry are most susceptible to inoculation from galls taken from any of these plants. On the other hand, inoculations upon the apple and pear from galls of the above plants failed, and those from galls of the apple and pear upon the raspberry and stone fruits were equally unsuccessful The pear gall is similar to that of the apple and does not appear to be contagious from results obtained.

The crown gall of the hop is evidently caused by the presence of a slime-mould resembling plasmodiophora brassicæ in the tissues of the galls. The crown-gall and root-galls of the rose and grape are not certainly contagious. It is not advisable to use cuttings or off-shoots from diseased plants of the rose, raspberry or grape, owing to the presence of the disease in the tissues of these plants above the ground. A study of all these galls is in progress.

There is a great diversity of reports as to the tendency of different varieties of apple to form crown gall when grafted. The Department is anxious to secure in the next few months as much data as possible from all parts of the United States as to the per cent of crown gall upon common varieties of apple on both grafted and budded trees, and it is requested that leading nurserymen and fruit growers send a confidential report of such percentages to Mr. Hedgcock, at the Mississippi Valley Laboratory, St. Louis, Mo.

Pruning Orange Trees.

Mr. E. L. Koethen of Riverside has given particular attention for many years to cultural methods with the orange, and his comments in the Fruit World on pruning the orange are interesting.

TIME TO PRUNE.—This is, perhaps, the best season of the year for pruning the orange tree, for a number of reasons. First, because help is at hand. The force of men that have been engaged at picking the fruit will often be glad to prolong their season by a few weeks of pruning. Anyone can make a good orange pruner who has judgment enough to do as he is directed, and who has a good "boss" standing over him directing the work. Too often the professional orange pruner is in reality an orange "butcher." He has theories of his own which are chiefly calculated to prolong his job and swell the bill. Such a man is to be avoided.

Another reason why this is a good season is that the oranges are just set and but little strength of the tree has been expended upon it, so that should it be desirable to remove a limb containing an orange or two no great loss will ensue. Then, too, having set the fruit, the fruitful branches are marked, and may be left on the tree.

POINTS IN VIEW.—The principles involved, as far as we are sure of our ground, in pruning the orange are these:

Remove all dead and sickly wood in the interior of the trees in order to make room for new growth and fruit bearing branches, at the same time to prevent oranges from being scratched by swinging against dead twigs. Great quantities of culls are produced annually in this way.

If at the tops some of the branches have that sick, tired, mottle leaf, narrow leaf, "don't-care-if-I-grow" look, remove these to a good, healthy twig, removing it in such a way that the sap will naturally flow into the healthy twig and heal over the scar left by the removal.

As to suckers, so-called, they may or may not be removed, according to location on the tree and the needs of that location. If on the main trunk, remove it. If in a crotch, remove it. If so located as to fill out a gap in the inside of the tree, preserve it. If too lanky, head it back, so as to produce a fruit bearing branch. These so-called suckers are just the same as the rest of the tree, and if their energies are properly directed they may become useful members of society. They are a little sporty, it is true, but properly directed they are all right in their place—just like the human sport, you know.

In younger trees, especially if it is found that certain branches show a tendency to lop out away beyond the rest of the tree, so that when laden with a heavy crop of fruit they are easily swayed by the wind, even when propped, they may to good advantage be cut back, so as to give them body enough to keep their place in the tree.

As said above, these are the principles involved as far as we are sure. It may be that in course of time we will develop a system of pruning which will involve more intricate work, but we are not satisfied that the drastic measures advocated by some will hold good and prove all that has been claimed for them. We believe that it is necessary to renew the tops of our older trees from time to time, in order to insure best permanent results. This is accomplished by the plan advocated above, but perhaps it is possible so to prune a little each year that these delinquent branches may not become so apparent. In other words, we think it worth while experimenting along the line of removing a few branches each year in such a way that a constant supply of new, vigorous branches may be maintained, those with waning strength to be removed as soon as the tree is through with them.

We cannot think that it is best to attempt to make our trees conform to unnatural shapes. A Navel orange tree, for instance, is naturally a large shrub, in shape a rounded dome with a broad base. Why try to flatten out the top and let the sun pour into the center, thus scalding the branches? The Valencia is of similar habit, but more vigorous and perhaps a little less symmetrical. Both sorts have a tendency to crowd a little in the center, and yet that is where the best fruit is produced. By pruning out the twigs as soon as they lose their bearing capacity the sap is passed on to the vigorous ones, and the light and air are let in on the balance.

There is great diversity of opinion as to high or low tops. But the best practice—now admitted by the most successful growers—is to encourage low-hanging branches among budded fruit. The largest fruiting surface may be at the base of the tree, near the ground, and hence warmer in the winter, and it is found unnecessary to crowd the furrowing plow and cultivator close up to the tree. The feeding roots are out in the middle of the row, and that is where cultivation and tilth are essential.

FRUIT MARKETING.

Fruit Shipments of 1904.

In his annual review of the export fruit business of California, General N. P. Chipman, president of the State Board of Trade, has placed the statistical statements amid such an environment of important descriptive comments that it will serve most excellently for distribution at the Portland World's Fair, and it has been handsomely published for that purpose. We take from General Chipman's report the following summary of the California shipments by rail and sea during 1904, and some remarks thereupon:

GENERAL SUMMARY AND COMPARATIVE TABLE OF SHIPMENTS OUT OF STATE BY RAIL AND BY SEA, OF FRUITS, WINE, BRANDY AND VEGETABLES FOR FOURTEEN CONSECUTIVE YEARS.

Tons of 2,000 pounds.

Kinds.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898	1899.	1900.	1901.	1902.	1903.	1904.
Green Deciduous Fruits	50,548.9	59,374.5	80,112.3	90,692.2	66,354.8	57,038.3	72,350.2	69,582.2	96,948.6	91,176.5	93,673.7	100,390.9	101,198.7	73,983.6
Carloads Fruit, by rail and sea	32,395.0	55,273.7	31,020.3	60,382.6	41,395.5	45,546.9	73,464.7	62,219.7	75,240.0	75,556.9	89,229.1	80,634.8	94,204.8	86,077.9
Citrus Fruits	16,921.4	34,857.5	30,757.0	58,961.0	115,825.5	99,156.0	98,547.0	180,658.9	131,946.8	226,546.6	328,871.4	225,668.8	269,623.4	385,746.6
Carloads Vegetables, by rail	18,692.2	20,800.3	report'd	31,271.4	33,547.2	29,096.7	38,430.6	43,284.6	43,364.3	52,901.5	65,953.8	61,713.3	69,689.8	76,581.1
Carloads Vegetables, by sea	none	none	report'd	4,276.6	3,613.6	1,130.6	4,243.8	3,045.6	2,613.6	4,367.8	8,371.7	6,130.2	7,839.2	4,156.3
Carloads Wine and Brandy by rail and sea	none	none	report'd	410.0	40.1	187.7	490.8	801.4	780.7	722.9	801.1	826.4	822.6	1,054.8
Carloads Fruit Vegetables, Wine, Brandy by rail and sea	1,705.1	1,882.5	6,020.9	7,663.5	8,056.8	7,609.0	6,897.8	9,014.0	8,713.9	9,067.3	8,605.3	8,808.2	9,733.2	10,148.8
	23,317.3	29,682.8	44,028.5	43,694.7	45,257.4	38,251.0	48,079.0	56,149.6	55,482.5	66,707.8	83,731.9	77,338.1	88,084.8	92,052.7

SOURCE OF PRODUCTS.—Some deductions from the statistical table are here presented. Turning to the table of shipment of fruit, wine, grape brandy, nuts and vegetables out of the State, it will be seen that the distribution of fruit acreage remains practically unchanged. Of the 7398 carloads (10 tons each) of green deciduous fruit, 84 carloads were from the southern portion of the State; of the 15,676 carloads of dried fruit, 847 carloads were shipped from that district; of 8607 carloads of raisins, 134 carloads were from the south; of the 38,574 carloads of citrus fruits,

36,358 were from the southern part of the State and 2216 from the northern and central portions; of the 981 carloads of nuts, 158 carloads were from the north.

Of the 10,148 carloads of wine and brandy, 667 carloads were shipped from the south, and of the 4787 carloads of vegetables, 2381 were from that region. Thus it will be seen that in the distribution of the fruit product of the State substantially all the green, dried and canned deciduous fruits, wine and brandy go from the northern and central portions, and also raisins, while only about 6% of the citrus fruits is shipped from this region. Most of the walnuts were produced in the south. Of the nuts the north produces almonds, principally. The shipment of vegetables is about equal from the two regions. The north shows no increase in orange exports for 1904 over 1903; on the contrary, there is a falling off of 30 carloads. There is this to be said of the orange industry in the north—orchardists are not convinced that it has any advantage over other fruits; the culture is attended by greater cost and greater risk. It has been fully demonstrated that in many parts of northern and central California citrus fruits may be grown with as much security from frost as elsewhere in the State; and it is also an undeniable fact that oranges mature and go into market a month or more earlier than from the south. This fact, too, accounts in some measure for the exports being less from the north than they otherwise would be, for the fruit is demanded for home use.

The gains and losses in the shipment of these products out of the State show a net gain of 3967.9 carloads over 1903. The losses occur in green deciduous fruits, 3021.4 carloads; canned fruits, 816.6 carloads; vegetables, 3410.3 carloads. The gains in carloads were as follows: Citrus fruits, 8612.5; dried fruits, 723.7; raisins, 1417.1; nuts, 43.3; wine and brandy, 415.6. As heretofore observed in these reports, it has been the policy to deal with the calendar year, which, as to all fruits except citrus, fairly well represents the year's business. Oranges, however, commence to ripen in the north, and to some extent in the south, in November, and hence the crop reaches into two years. For the purpose, however, of comparison from year to year for a long period, the table serves the object. It shows that in the past year there were sent into the markets out of the State, of fruits, nuts, vegetables, wine and brandy, 92,052.7 carloads, which is more than double the shipments of 1895.

Reciprocity Propositions With Germany.

Californians have been strong against proposed reciprocity treaties by which fruit growing countries could get their products into this country at less than the tariff rates. There is a proposition now pending with Germany which may deeply affect our outlet for dried and canned fruits in that country. So far as the proposed treaty affects the fruit products, the following comments are by United States Consul-General Mason at Berlin:

It needs but a glance at the old and the proposed schedules to show how important will be concessions granted to one or more of the seven treaty nations, and how formidable will be their competition in the German market against similar goods coming from countries which, for want of a reciprocal treaty or other convention, will be subject to the autonomous or unmodified tariff in exporting goods into Germany.

As an example of this may be cited the schedule relating to dried apples, pears, peaches and apricots, on all of which there is at present a duty of 95 cents per 220.4 pounds, in all of which a very large and important import trade from the United States has been built up. Under the new autonomous schedule these goods will be dutiable at $2.38 per 220.4 pounds, while imports from Italy, Roumania, Austria-Hungary and Servia (the European countries which notably produce a surplus of these dried fruits) will come in under a uniform duty of 95 cents per 220.4 pounds, an advantage of $1.43 in favor of the treaty favored product. Will the superior dried fruits of our Pacific States, with their long journey to Bremen and Hamburg, be able to stand this new competition?

Take fresh apples in barrels, of which there were imported into Germany from the United States 5835 tons in 1902, 17,806 tons in 1903 and 14,924 tons in 1904, which under the present tariff are admitted free of duty. Under the new tariff all apples in barrels will be dutiable at $2.38 per 220.4 pounds, except those coming from Italy, Belgium, Servia, Roumania and Switzerland, the duty on which will be $1.19, or half that imposed by the autonomous tariff. Another important and very obvious feature which fixes the duty on such fresh fruits, provides that apples, pears and quinces unpacked, that is, piled loosely in bulk or carried in bags, may be imported free from September 25 to November 25, and during the remainder of the year at the nominal duty of 60 cents per 100 kilos. This will enable the great cargoes of fruit that come by canal boat and rail from Austria, the Tyrol, Italy and Switzerland, to enjoy a decisive advantage over apples of American origin, which are now imported uniformly in barrels.

Of course there are other things than fruits affected, and we apprehend that in the foregoing especial emphasis is placed upon fruits, because our fruit interests have made the hardest fight against reciprocity arrangements. That other interests are endeavoring to pull the fruit interests over into the reciprocity promoters' fold is seen in the fact that a call has been issued by a large bunch of live stock associations, millers' associations, commercial associations and manufacturers for a National Reciprocity Conference to be held in Chicago, August 15th and 16th, where the mooted question will be discussed in all its phases by the leading commercial, agricultural and financial interests of the United States. California delegates are entitled to entrance and our fruit associations should take measures to be represented.

THE VINEYARD.

California Grape Mildew.

As we have recently had several inquiries on the subject, and as the disease is of permanent concern to vine growers, we take from the Bulletin of the California Viticultural Club, just issued, an article by Mr. O. Butler of the University of California Experiment Station:

THE NAME. — Wherever the vine is extensively grown there the powdery mildew will be found. It is almost as universal as the vine itself, and consequently its synonymy is fairly large. It is known here in California as mildew, in the Eastern States as powdery mildew, in France as the oidium, or mildiou des grappes, and in Germany by the name of mehlthau. Uncinula spiralis was the scientific name given to this fungus by Berkeley, who first described it. The disease is indigenous to the United States east of the Rocky mountains. It was first observed, outside of the American continent, in England, at the Margate graperies by Tucker in 1845. According to M. Viala, by 1851 all the grape growing districts of Europe and Asia were infested. The fungous disease, which thus rapidly invaded the vine-growing districts of Europe and Asia, was not at first supposed to be the same as the Uncinula spiralis. In fact, during some forty years the fungus was never observed to produce anything but summer spores (the Uncinula spiralis produces both summer spores and winter spores), and the name it had been given by Berkeley, who studied it shortly after its appearance in the Margate graperies, was accepted. Berkeley called this new vine disease Oidium Tuckeri, in honor of Tucker who first discovered it. The identity of the Uncinula spiralis and the Oidium Tuckeri was established by M. Viala during his travels in the United States in 1889. The winter spores of the Uncinula spiralis have since been found in France and probably in most of the other grape growing countries of Europe.

IN CALIFORNIA.—The history of this disease has thus been outlined to give a definite reason why works on viticulture, other than those published by American authors, speak of the mildew as the oidium. Professors of viticulture very generally call the powdery mildew, the California vine mildew, oidium, to distinguish it from the disease known among European vine dressers as mildew, which is a totally different disease. Riley, one of the foremost scientists of his day, proposed to distinguish the two mildews, one from the other, by calling the mildew known to California grape growers, powdery mildew, and the other mildew, a disease quite general throughout the Eastern States, downy mildew. His suggestion has since been accepted by the scientists and growers wherever these two diseases occur together. The downy mildew has not been certainly observed thus far in California, and it is probable that the climatic conditions prevent its existence. The Uncinula spiralis will, therefore, in this article, be referred to simply as mildew, agreeably to the practice of the growers throughout the State.

DETECTION.—"The mildew at first appears," to quote the words of Viala, "as a dull, thin, grayish-white efflorescence; it is never granular nor lustrous, and generally forms a vague network that may spread over all the growing parts of the vine, shoots, leaves, flowers and fruit, and it has a characteristic musty odor. After maturation it may be recognized by the suffused, but not sunken, dull, blackish-brown spots that the parasite has left upon the organs of the vine." Such is, briefly, the general appearance of the mildew; but to leave no doubt in the mind of the reader as to what it looks like, it may be said that it resembles in externals, and even in mode of action, the mildew of the rose, a parasite even more universal than the vine mildew itself, as every rose lover will testify.

HOW IT WORKS. — The "vague network" that spreads, as the case may be, over all the parts of the vine, or only over certain of them, is the mycelium, of which, at intervals, suckers are sent into the epidermal cells of the host. By means of these suckers the fungus appropriates the food the plant has elaborated for its use. When a vine is badly infested with mildew it is then really living on a scant supply of food, and is in more or less a state approaching starvation. As a matter of fact, the way in which the mildew damages the vines is by starving them into weakly and unproductive plants; the vines infested do not manufacture and put away their reserves of starch, and the following season they show evidences of poor nutrition, and, if again infested, become still weaker; in a few years the mildew would assuredly kill them, were it not for a fact long since observed, that the mildew, like all fungous diseases, is very sensitive to climatic changes.

CONTROLLING CONDITIONS.—Slight climatic changes that may even escape our notice have a great influence upon the mildew. It develops slowly at 53.6° F., but more rapidly as the temperature rises. A temperature of from 77° to 86° F. appears to be the most favorable for a rapid development of the disease. At the two extremes of temperature, 41° to 50° and 104° F. growth practically ceases. Humidity, though essential to the development of the parasite, is not the important factor. As Viala says: "Heat is the first essential; humidity, though necessary, being of less importance. Thus on dry slopes, in shallow, sandy, red soils in which the vines, on account of the warmth, spring rapidly into vegetation, the mildew causes greater damage than in the moist and cold low lands." A warm, moist atmosphere, such as one meets with in hot houses, may be said to be the best suited to the development of the mildew, and such atmospheric conditions in the open could not be called dry nor yet muggy. It is after such weather as this that it may be observed to the best advantage when mycelium and spores flourish. The vague network of the tangled branches of the mycelium, which is colorless when seen singly under the microscope, appears white when seen in mass. The white efflorescene is nothing more than the summer spores which singly are too small to be seen with the naked eye.

Toward midsummer, when the vine has reached complete development, and only the extremities of the shoots and the berries remain tender and their epidermis soft enough to be pierced by the suckers, we find that the development of the mildew is less rapid; when occurring, is mostly confined to the fruit. The growth that now appears on the older parts (fully developed leaves and lignifying shoots) is more felt-like and grayer in appearance; it is no longer efflorescent; the abundant production of summer spores has ceased. Beneath this felt-like growth when it is rubbed away, the suffused, but not sunken, dull blackish-brown spots remain even after the mycelium has been destroyed by the cold and the rains of winter. Toward autumn, after a hot spell, or the first cold nights, there appear frequently, but not invariably, in the old patches of mildew, small, yellow, round bodies visible to the naked eye, which increase somewhat in size and when mature are black. These round black bodies are called spores, or perithecia. Under the microscope the perithecia are seen to be pseudo-parenchymous and have attached to their base long hairs, which are curled at the tips. If left to themselves the perithecia break open in the spring and a lot of small, colorless spores are liberated. These, under favorable conditions, germinate as soon as they escape and reproduce the familiar efflorescent web of the mildew.

The action of the mildew upon the vine, and the relation between its growth on the different parts of the vine and the climates of California, may be thus stated:

EFFECTS UPON THE VINE.—The mildew affects both the upper and lower surfaces of the leaves indifferently during the early spring; but when the weather becomes warmer and drier may disappear from, or not attack the upper surfaces, and yet be fairly severe on the lower. The leaves that have reached a certain development curl up under the influence of the fungus, gradually dry and fall off. The young leaves succumb more rapidly. The most serious damage done to the foliage is during the early spring months, before the vines have flowered. The summer months are, in a number of grape-growing districts. unfavorable to its development on the foliage and upper parts of the canes which are more exposed to the direct rays of the sun, and consequently to greater heat, which rapidly dries up the moisture deposited by dews and fogs, thus depriving the fungus of the necessary moisture for germination and exposing it, when grown, to a temperature that prevents any further development.

Even the foliage of the Carignane, which is remarkably sensitive before June, is quite resistant during the remainder of the season wherever fogs and cloudy weather are not too prevalent. But if the upper two-thirds of the foliage is, after flowering, well-nigh immune to the mildew, the lower third of the canes and the grapes are receptive, and more so in healthy, vigorous vines, as one would expect, the grapes being protected from the rays of the sun. The canes and grapes being well shaded, the deposits of moisture remain longer upon them and the temperature of the air environing them rarely exceeds the optimum (86° F.) for the growth of the fungus. It is not rare to find the lower parts of the canes and the grapes covered with a grayish-white meal, if the invasion of the mildew is recent; or, if old, the

epidermis of the canes blackened and the berries discolored and split if nearing maturity; or black and drying up more or less if but recently set. Nor is it rare to find the canes and the grapes in one of these stages of disease, and the foliage of the vines showing no signs whatsoever of infection. It is patent, then, that the grapes may be seriously infested with mildew, though hidden beneath a luxuriant and manteling foliage.

Sulphuring.—The manner in which the mildew affects the vines has been dwelt upon at some length, mainly for the purpose of condemning without reserve many of the methods of sulphuring vines which are now in vogue.

The origin of the defective practices of sulphuring is easily explained. The mildew is generally a very benign disease of the vine in California, and wherever it is vanquished by placing a spoonful of sulphur between every four vines, or a handful on the center of the foliage, or on the head of the vine, it never attacks the vines at all. Whenever the mildew is injurious we find that the grower does not know it and is much concerned about the new disease in his vineyard, or he knows the mildew and is very much dissatisfied with his sulphur, which he considers worthless.

Another cause for the faulty sulphuring so generally practiced is the idea, exaggerated beyond all truth, that sulphur fumes have an unlimited fungicidal value. The fumes of a handful of sulphur are supposed to permeate the atmosphere surrounding the vine, and destroy any oidium that may be in it. But sulphur evaporates very slowly at ordinary temperatures, and though it is true their fumes kill the fungus, they are mainly effective at the immediate surface from which they are given off. It therefore follows that sulphur, to be effective, must be distributed in the very finest of powders, as evenly as possible over the growing parts of the vine. According to M. Mares, sulphuring is only successful when the following conditions are realized:

(1) "The sulphuring must be performed as soon as one sees the mildew begin to appear on the vines—one thus prevents the parasite from obtaining a strong hold on the grapes and the foliage of the vines, and both impairing the tissues and weakening the growth."

(2) "The sulphuring must be renewed every time the mildew attacks the vine and whenever it appears."

(3) "The sulphuring must be conscientiously performed, and none of the affected parts of the vine left untouched. When one finds a shoot of the vine affected they may rest assured that the germs of the disease are upon the others also; to destroy these germs they may be touched by the grains of sulphur."

All vines are equally sensitive to the mildew—some are quite sensitive, others less so, and then again others not at all.

In the following list (principally from M. Viala) we have given the comparative resistance of some of the best known of the grapes grown in California:

Vines Very Sensitive—Muscats, Chasselas, Frankenthal, Folle Blanche, Clairette, Cabernet, Sauvignon, Syrah, Carignane.

Vines Resistant—Aramon, Sauvignon, Mourastel, Grenache, Alicante-Bouschet, Zinfandel, Mission.

Vines Immune—Most American vines and most of the resistant stocks.

THE VETERINARIAN.

Two Dreadful Cases of Tuberculosis in Wisconsin.

As we are in the midst of dairy reform in California, with the cities insisting that their milk supply shall not be drawn from tuberculosis and the State Dairy Bureau working hard to carry out the new laws for dairy sanitation, we cannot do better in the way of calling attention to the subject than by reporting two distressing cases of dairy tuberculosis described in a bulletin of the Wisconsin Experiment Station (No. 126) just received. They are so bad as to be almost incredible and their lesson is sharp:

A Herd Which Was Used for a City Supply.—One of the most extensive outbreaks of tuberculosis among cattle recently came to light in the herd of a prominent dairyman, supplying milk to the city of Beloit. The owner had a fine dairy farm on the outskirts of the city, and had constructed ample stable room to accommodate his herd. The business had developed until at the time of examination, seventy animals were kept, forty-six of which were then in milk. A veterinary examination of an animal somewhat out of condition revealed the presence of tuberculosis, much to the surprise of the owner, and the tuberculin test was then applied to the whole herd.

Fifty-seven in this herd of seventy reacted to the test. Those that escaped were for the most part young stock. Thirty-three of the best conditioned of these fifty-seven reacting animals were shipped to abattoirs for immediate slaughter and of this number only 18 passed federal inspection. Of the 24 killed on the farm not to exceed 7 would have passed inspection for beef had they been sent in for slaughter. Thus it appears that 32 of the 57 that reacted were so badly affected as to require total condemnation of carcass.

History of This Herd.—It was impossible to secure any very definite data as to the probable presence of this disease in the herd for the preceding years, as the owner was in California, but it was admitted by herdsmen who had handled the herd in previous years that a considerable number of animals had died or been killed from year to year as long ago as 1897. Frequently animals had been shot to get rid of them, as they pined away. No examination was made and the matter was allowed to drift on until the startling revelation was made by the use of the tuberculin test.

The slaughter of the herd revealed many cases of advanced tuberculosis, and in some instances even the udders were found diseased. Is it any wonder that the community was roused by such a discovery, for in this case where the milk of these animals was used directly for human food, the danger was much greater than if the same had been utilized in the manufacture of dairy products?

Poor Ventilation.—An examination of the surroundings on the farm showed well constructed barns and stables, which were kept in a clean and sanitary manner, but no provision for ventilation was made, and this is undoubtedly the cause of the widespread dissemination of the disease. In the stable the organism of tuberculosis retains its vitality for many months and where the barn is tightly built, with no system of ventilation, and is occupied by such a large herd, the conditions become ideal for the distribution of the disease germ from animal to animal if it once is introduced. In a thoroughly well ventilated barn, much of the diseased matter would be carried off in the polluted air, but where animals are forced to breathe the air over and over again until it reeks with moisture, heat and material thrown off from the lungs, they become predisposed to the disease if the tubercle bacillus is present. Doubtless this condition was supplied by buying, in previous years, one or more animals having the seeds of the disease in their systems but not advanced far enough to permit of ready recognition.

When once introduced, time and the environment did the rest, with the result that in course of a few years, it became necessary to destroy nearly all of the entire herd. How much better it would have been to have made this investigation several years ago. Any herd supplying milk as human food for direct consumption should be safeguarded against the possibility of this malady. When public sentiment is finally aroused in such matters as this, cities will protect their citizens by requiring tuberculin tests to be made on all herds supplying milk for city delivery. If large cities, like St. Paul, Minneapolis and Duluth, can do this for their citizens, cannot Wisconsin towns demand a similar protection? A few such illustrations as this would seem to be all that was needed. Others might be furnished if this was all that was necessary. Beloit is not the only town that has had the matter brought home to her in a striking way. Within the past three months two herds have been swept out of existence, on account of tuberculosis, that were supplying milk for the people of the Capital City of the State.

The Most Widespread Development of Tuberculosis yet Recorded in Wisconsin.—Within a week from the time this first herd was disposed of, another was examined in the southern part of the State in which even a worse condition was found. In this instance the herd consisted of 72 animals, many of which were fresh in milk, as the product was to supply a Swiss cheese factory. The condition of the stock revealed by the tuberculin test was shocking. Of the 72 animals tested 69 reacted. Only one mature animal, a yearling bull and a young calf escaped the disease.

This widespread distribution of the disease was found to be due to the usual cause, neglect and failure to provide proper sanitary surroundings. For several years the owner had been losing animals from time to time, but made no effort to learn the cause of the trouble. This last winter five died, the year before two others, and during previous years still others. Four years ago he sold to a neighbor five head of young stock which were kept on pasture during the summer. In the fall they weighed less than when bought, and were condemned when shipped to Chicago. Later seven or eight others were bought for shipment, three of which were condemned when inspected. It would seem as if such experiences as these were sufficient to awaken the most indifferent stockman from his inaction, but in this case it required the complaint of the neighbors to force the owner to have the test applied. There is no question but that the disease had been spreading in the herd for a long time, taking its deadly toll each year, and infecting the young stock as they grew up. The post mortem findings revealed many cases of generalized tuberculosis, some of which were in a most aggravated form. In a number of cases the udders showed well-marked physical signs of disease. The development of the disease in young stock in both lung and body cavities, with the infection of the bowel itself, bespoke a double infection, through the milk as well as in the air. In fact, it rarely happens that a herd shows such a wholesale state of infection, but an inspection of the stable in which the animals were kept revealed sufficient cause for the widespread dissemination of the disease in the herd.

Rapid Spread Due to Unsanitary Stable Conditions.—The stable in which this entire herd of 70 head were kept, with about a dozen young calves from a few days to three or four weeks old, was located in a stone basement in which there was absolutely no provision for ventilation, nor adequate illumination. A little light filtered in through five or six tightly closed sash windows of three 8x10 inch panes of glass to each window. Even some of these so-called windows were boarded up. The interior of the stable was so dark that one could scarcely see to read ordinary newspaper print in the cow stable unless the doors were left open. Absolutely no attempt was made to ventilate the stable. The result was that during the night, when the stable was closed, the hot, stifling odor from the animals made the place almost unbearable. Added to these general unsanitary surroundings was the fact that the manure on the floor of the stable was over a foot in depth, and the reader can easily see how potent the evironment must have been in the matter of predisposing the systems of the animals to the successful attack of the tubercle bacillus. Such conditions as these cannot produce the disease in the first place, because they cannot give rise to the specific germ producing the disease, but if once the disease germ is introduced, as it generally is by buying an animal affected in the early but unrecognized stages, the influence of such general unsanitary surroundings can only hasten its spread from animal to animal. Such a condition is like dead underbrush and dry weather in a forest. If the match is applied the fire rages. The tubercle bacillus is the match, the real cause of the fire. Without it the disease cannot develop. But the fire fails to spread rapidly unless the conditions are suitable, and so the surroundings of the herd are of much import in the spread of the disease. Undoubtedly, failure to provide ventilation was the most potent of any of the factors contributing to such rapid spread in this case. The virus of the disease thrown out of the bodies of those affected in the later stages was distributed throughout the stable. In a closely confined air where no ventilation was had, this polluted atmosphere was breathed over and over again, thus continually reinfecting the animals, as well as lowering their general powers of resistance to the disease.

The Lesson to be Learned.—The conditions described in the two foregoing cases are records of ignorance, apathy, and indifference. It matters not what the cause, the penalty is always the same. Slow wasting death is sure to occur, and blind, indeed, must be the stockman who will deliberately ignore such conditions. Some, doubtless, suffer losses more or less continually and still remain ignorant of the fact that the worst possible disease is present in their herds. Others may surmise, if they do not positively know, that the disease is tuberculosis, but, ostrich-like, they prefer to remain blind to the fact hoping it will die out of its own accord. Such kind of faith is rarely ever rewarded, except in the one inevitable way that the matter goes on from bad to worse, until frequently disaster overtakes the herd. If there was no satisfactory and sure way in which the disease could be recognized, there might be some excuse for such inaction, but when we have in the tuberculin test, a simple and effective agent which permits of the recognition of the disease in the earliest stages, long before it can be demonstrated by the physical symptoms, what stupendous folly to utterly neglect to apply such simple measures that will show with certainty whether a herd is diseased or not.

New Federal Dairy Inspector.

The announcement is made, says the Dairy and Produce Review, that E. A. McDonald of Seattle, Wash., has been appointed dairy inspector under the United States Department of Agriculture for the Pacific coast States, including Washington, Oregon, California, Nevada and Idaho. For the past eight years he has been the Dairy and Food Commissioner of the State of Washington, although he has also served during the past several years as the inspector of the Department of Agriculture for Washington and Oregon.

Mr. McDonald's duties come under that part of what is known as the oleomargarine law that deals with renovated and adulterated butter. The law regulates the manufacture and sale of these articles and the Department of Agriculture enforces these regulations through its inspectors.

The Department is also engaged in other lines of work that it is performing with the assistance of these inspectors, notably in trying to encourage the exporting of dairy products through a system of inspecting and certifying to the quality of butter offered for export. This will become a part of Inspector McDonald's duties, and it is stated that he may possibly make his headquarters at San Francisco instead of Seattle.

The former representative of the Department here was Mr. W. D. McArthur, who has resigned.

Agricultural Review.

Butte.

MAMMOTH HUCKLEBERRIES. — Chico Record, July 14: Geo. S. Devilbiss has, at Chico, a curiosity in the way of ninety bushes of the Mammoth huckleberry, a berry seldom seen in this locality. In April of this year Mr. Devilbiss imported seed for these Mammoth berries from Chicago; and although they have been planted only three months, the bushes from the same are now between 3 and 4 feet high and are bearing berries fully ½ inch in diameter, at present only slightly colored. These huckleberries are fully three times larger than the ordinary mountain huckleberry.

WILL STUDY BEE CULTURE.—The California Promotion Committee announces that the United States Department of Agriculture is establishing a substation in the plant introduction garden at Chico for investigations in apiculture. A specialty will be made of testing honey plants to be secured by Benton of the department, who is now in India. Bee disease on the Pacific coast will be investigated and an experiment made in the different varieties of bees, among them the giant bee of India and the various species of the Philippines. California is the greatest honey-producing State in the Union and the department will support an apiary and issue much information to the California apiarist. The apiary sub-station at Chico is in charge of John M. Rankin.

Contra Costa.

GRAPES HURT BY HEAT. — Antioch Ledger, July 15: Reports from different ranches state the intense heat last week has caused a heavy loss on Tokay as well as other kinds of grapes. While the heat is as great in every grape-producing section every season as that experienced last week, there is never any loss from the high temperature. It is thought the moisture in the atmosphere at this point, combined with the extreme heat, caused the grapes to burn and also to mildew.

ALMONDS HURT BY GRASSHOPPERS.—The grasshoppers are still working on the orchards and vineyards. In attacking the almond trees they eat the leaves first, then the shell of the nut, which causes the kernel to shrivel up. While many remedies have been suggested as to how to get rid of them, such as smudging, using a mixture which contains arsenic, digging trenches, partly filling with straw and burning them as they pass over, and many others, so far no remedy has been found entirely successful, and each rancher is using whatever means he may invent to combat the pests.

Fresno.

FINE POTATOES.—Kingsburg Record, July 12: Mrs. E. Hedberg's place, south of Kingsburg, is producing potatoes of the Freeman variety, all of them large and smooth. They were grown without any particular attention having been given to them, and from a plot of ground, 6x12 rods, twelve sacks were harvested. Mrs. Hedberg says if they had been given proper care they would have been able to have gathered more.

Mendocino.

HOP OUTLOOK.—Dispatch - Democrat, July 14: The hot weather has brought out the hop crop in good shape and the prospects for a good crop are quite promising. The hops are being suckered, plowed and hilled up for the last time this week and the farmers are perspiring, but smiling. Awhile ago it was thought that half a crop would be the limit. Now, however, it is expected that a three-fourths crop will be the yield.

Napa.

NEW CANNERY.—A large cannery is to be built at Napa Junction by a company of capitalists, with B. M. Solomon as manager. The company has already secured a site, comprising three acres of land that has been donated, and special water rights have been secured, also special railway connections and tramway lines. The concern will can fruits and vegetables. It will employ about 400 people and will handle fruit from several neighboring counties, as well as from Napa county. The construction of a large building and storehouse will be commenced in a short time. Besides the cannery business, the new company will plant 200 acres in asparagus near the cannery, and will handle the crop in connection with the establishment.

Placer.

NEWCASTLE FRUIT DAMAGE.—Auburn Republican, July 13: The hot spell of last week has proven to be of a most ruinous nature to the plum and grape crops of the county. It is reported that the Tokay grapes are more than one-half destroyed—even the vines in many places being hurt. The Cornichons also, one of the favorite shipping varieties, are suffering badly. The same may be said of the Muscats, and reports warrant the statement that if one-half is gathered this season of the entire crop it will be all that can be expected. The plum and prune crop also was damaged and thousands of crates have been lost, the damage in a few cases being reported at considerably over one-half the crop. All kinds seem to have been hurt without exception, unless in the case of some trees bearing light crops and having heavy foliage. In such cases it seems as if the fruit was sheltered from the great heat. Peaches have not been affected and pears seem to be all right where there are any. The few of the latter now coming into Newcastle have been bringing $1.75 per box.

Riverside.

BARLEY.—Perris Progress, June 29: Compared with past years the acreage in barley in Riverside county is unusually large. The reason for this is that the rains came so late in the season that many wheat growers decided to plant barley. The crop of barley is therefore unusually large and the grain is plump and heavy. The reports from the Imperial country in regard to the barley crop were greatly exaggerated, nevertheless that section has produced 200,000 or more sacks of grain, and while waiting for the crop to mature in this valley, buyers have supplied their immediate wants with Imperial barley. The combined harvesters started several days later this season, and some of them two weeks later. Up to the 15th inst. the price of barley held up to $1 per hundred, but last week the best offer at Perris was 95 cents, and at Hemet 90 cents a hundred for a thousand sacks. The offer was declined.

San Joaquin.

GRAPES SCORCHED.—Lodi special to Sacramento, July 12: It now transpires that the damage done by the hot weather to the grape crop of northern San Joaquin is not nearly so great as at first reported, and that the total average loss will not amount to 20%. The loss is according to soil conditions and location. In places where sand is abundant the loss has reached as high as 50% and in sections where the soil is heavy not more than 5% will be a total loss. Those growers who summer-pruned, thereby leaving the grapes exposed, have lost at least 50%, while the vines that are covered heavily with foliage will escape with very light damage. Some growers, as soon as it was known that the heat would have serious effects, commenced irrigating and saved all their grapes. The vines are very heavily loaded, and some growers argue that the sun did not do much damage, for the fruit was too abundant and the portion scorched would be a total loss anyway.

GOOD WHEAT.—Stockton Independent, July 14: G. A. Smith, a farmer who lives on the Sonora road, 3 miles east of Stockton, placed a sheaf of wheat in the Chamber of Commerce Thursday, which Secretary Brown at once put on exhibition in the show window. Mr. Smith raised fifteen sacks of the wheat to the acre, while other wheat sown under like conditions in fields adjoining only yielded eight sacks. Mr. Smith's account of the crop is that W. P. Steinbeck, resident manager of the Sperry Flour Co., furnished him the seed and besought him to sow it as an experiment. The seed is from Kansas and Mr. Steinbeck assured him it was richer in gluten than the California grain. Mr. Smith tried the seed and harvested it this week. He realized fifteen sacks to the acre while on part of the same and adjoining fields he realized only eight sacks. The new grain is amber colored and the ears are bearded like barley. It is heavier than California seed wheat and the mills pay 10 cents per hundred more for it than the ordinary California grain. As Mr. Steinbeck gave out the same seed to about thirty farmers in this vicinity, like good results are expected from other experimental crops.

Santa Clara.

PRUNES AND APRICOTS.—Santa Clara Journal, July 12: As apricots ripen it is found the fruit is not up to its usual standard. Much of it is scaly and is not in demand by either the canneries or shippers of green fruit. The late hot weather did the ripening apricots much harm by ripening prematurely the side exposed to the sun, while the part not exposed to the sun remained green, so say some of the fruit men. The intensely hot rays of the sun also burned much of the fruit, damaging it for both the cannery and the drier. Prunes are said, also, to have suffered a severe cooking by the hot sun, causing many of them to drop off. This will cut still shorter the prune crop of the Santa Clara valley this year.

Santa Cruz.

CODLIN PARASITES AT WORK.—Watsonville, July 16: The colony of codlin moth parasites that were imported from Europe and set free in apple orchards in the Pajaro valley has been working industriously and successfully, and there is rejoicing among orchardists now that they feel assured the enemy of their crops will at last be overcome. Deputy Horticultural Commissioner E. M. Ehrhorn has just completed an inspection of the Pajaro valley to investigate the newly discovered parasite, which has been the center of a great deal of interest. Various sections were visited and it was found that the parasite had been busily at work destroying the pest. The Deputy Commissioner expresses his confidence that the parasite will become firmly established in the Pajaro valley and throughout the northern part of the State, which will ultimately work the complete destruction of the pest. For years the growers have been compelled to spray their trees from three to eight times a year to get any kind of a crop. State Commissioner Elwood Cooper sent George Compere on a quest after the natural enemy of the destructive moth, with the result that the parasite was found and imported, and last season colonies were placed in every apple-producing county in the State. Mr. Ehrhorn says that good results are reported from the orchards of the foothills of Siskiyou and other northern counties.

Solano.

GRASSHOPPERS. — Solano Republican, July 14: During the past two weeks myriads of grasshoppers have made their appearance in the fruit orchards in the upper part of Suisun valley along the foothills, destroying tons of fruit and hundreds of trees in the orchards. The situation has assumed a serious aspect for the orchardists, and with a view of devising some effective means of destroying the pests, Supervisor Grant Chadbourne requested the authorities of the State University to send an entomologist to the scene of the trouble to investigate the situation and recommend, if possible, a means of eradicating the insects. Accordingly, Prof. Warren T. Clarke, field assistant in entomology of the State University, came from Berkeley and visited the infected orchards Wednesday. Prof. Clarke prescribes the following formula for the destruction of the grasshoppers: Common bran, twenty-six pounds; middlings or shorts, fourteen pounds. To this add five pounds of white arsenic. Mix thoroughly these ingredients while dry. Then wet the mixture to a wash, using two gallons of molasses and about five gallons of water. Then place the preparation on pieces of paper at the rate of two tablespoonfuls to each tree infested with the grasshoppers. The grasshoppers first made their appearance on the hills west of the valley, which is a natural habitation of the pests. The recent hot weather dried up all the green feed on the hills, causing the grasshoppers to seek food in the adjacent orchards. Prof. Clarke says that the natural place of breeding and habitation of grasshoppers is in uncultivated land, that they do not lay their eggs on land that is cultivated. Reasoning from this fact, he concludes that but few of the insects will make their appearance in this same locality next year, inasmuch as they have left the hills before laying their eggs.

APRICOT HARVEST COMPLETED. — Vacaville Reporter, July 15: This week has seen the completion of the work of picking, drying and caring for the apricots raised in the Solano and the Suisun valleys. The crop is considerably short of the estimate made earlier in the season. The prospects were extremely good for an immense yield, and while it has proved good, it is not by any means what was expected. The cause of this shortage is attributed to the hot weather of last week. It came at a time when the fruit was ripening as fast as it could be handled, and resulted in bringing the whole yield of the orchards to a ripe condition at the same time. With the labor at hand it could not be handled.

Sonoma.

CANNING BLACKBERRIES. — Santa Rosa Press Democrat, July 13: The Santa Rosa cannery of the California Fruit Canning Association began operations July 5 on blackberries. Superintendent Oliveria, who came here recently to get the plant into working order, is rushing the work. New machinery has been installed and the plant thoroughly overhauled. It is believed that there will be a big run on berries, as the yield is quite heavy. Peaches will be ready to start on the last of the week and next week the work will be in full swing. The cannery is paying $30 a ton for blackberries and from $25 per ton up for peaches, according to variety, size and conditions. The peaches will be handled in a new manner this year and it is expected that a large quantity will be canned. The Gold Ridge will furnish the greater part of the berries and peaches handled by the cannery.

Stanislaus.

GRASSHOPPERS DESTROY FRUIT CROP.—Oakdale Leader, July 14: Grasshoppers have destroyed the fruit crop on the three-acre orchard leased by W. H. Capps, known as the Howe place, 3 miles south of Oakdale. Mr. Capps says the pests have not only destroyed the fruit crop, but everything green, embracing leaves of trees and vines and vegetation of every description, has been consumed. We have heard of other farms in that locality whereon the depredators have put in their work of destruction to orange and other fruit trees.

WATERMELONS. — Modesto Herald, July 13: Prof. J. M. Martin has 100 acres of summer-fallowed land near Turlock in melons this year, and he says the crop is very good as a whole as to yield, and ranging from fine to medium in other respects. He has begun carload shipments.

Sutter.

GRAPE CROP.—Yuba City special to Sacramento Bee, July 12: The hot wave did minor damage in the peach orchards, but has hurt badly some of the vineyards. The vines which were not trellised are the worst sufferers. On these it is asserted that 50% of the crop is cooked. On the large vineyards of Stabler, Pease and Onstott no damage is reported. The vines are trellised and the heavy growth of foliage served to protect the tender grapes.

HAY LOADER. — Sutter Independent, June 29: Sheriff N. S. Wilson, who is a practical rancher, has applied for a patent on a hay loader. The machine will work on the principle of a header and take the hay right from the windrow and delivers it to a wagon for hauling to the stack. Unlike the header, the horses work in front instead of behind the machine. A rake attached to the loader runs along the windrow and picks up the hay, and over a system of belts and drapers delivers the hay at one side of the machine into a wagon which is to be driven along with the loader. The machine is calculated to save the time of six or seven men and does away with the necessity of throwing the hay into shocks. It is also claimed to deliver the hay in better condition for the stack than by the old method.

Yolo.

GRAIN CROP POOR.—Special to Sacramento Bee, July 14: The grain crop in Yolo county is turning out poor this year. The ranchers are getting from three to ten sacks per acre, and poor quality grain at that. A manager of one of the local warehouses, in speaking of the crop conditions, stated that the crops were as bad this year as they were in dry years.

Yuba.

SIEBER FARM SOLD.—The 500-acre farm of the G. Sieber Co., 10 miles north of Marysville, has been sold to a stock company recently organized between F. W. Aaron, R. Pozzi and C. Brown. The new company purchased the farm to engage in the dairy business, and 300 cows will be milked, a skimming station installed and the cream brought to the Pozzi creamery at Marysville. Three hundred acres of the farm is in alfalfa and the rest will soon be sown to the same feed. The dairy business will be engaged in in an extensive manner, and Charles Brown will be manager of the entire business. The Sieber farm is one of the finest in Yuba county and the purchase price of the land was close to $200 an acre, including the buildings and farm implements.

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The Home Circle.

Fish Stories.

MR. BLACK.

White and I went out for trout about a week ago—
White's catch wasn't very heavy—mine was great, you know.
One I hooked—a fine two-pounder—nearly got away,
Here's a picture of the beauty, taken yesterday.
White was pretty sore, I reckon, at my streak of luck,
Said I was the luckiest fisher he had ever struck.
Guess I'll go again next week if I can spare the time;
Last week's trip was elegant—the weather was sublime.

MR. WHITE.

Black and I went out for trout about a week ago.
I was lucky from the jump; Black didn't stand a show.
Sixteen speckled beauties, sixteen! Isn't that a few?
Poor old Black, he tramped all day and only landed two.
Here's a picture of a corker; two pounds flat he weighed.
Thought that I would lose him, though; a rattling fight he made.
Black and I went out for trout about a week ago.
I was lucky from the jump; Black didn't stand a show.

THE URCHIN.

Two swell guys came out for trout about a week ago,
All deir tackle it was great, and gee! dey had the dough.
See this paper dollar; well, dem fellars gave me two
Jes' fer givin' dem some trout I caught in Mason's slough.
One of dem was mighty fresh; he called me "little brat."
Jes' de same I got his dough, so let it go at that.
Two swell guys came out for trout about a week ago,
All deir tackle it was great, and gee! dey had the dough.

—Milwaukee Sentinel.

It's Up to You, My Son.

There are two trails in life, my boy,
One leads to height and fame,
To honor, glory, peace and joy,
And one to depths of shame.
And you can reach that glorious height—
Its honors can be won—
Or you can grope in shame's dark night—
It's up to you, my son.

One trail is strewn with labor's flowers,
With sharp thorns here and there;
One leads through wicked pleasure bowers
That to the eye are fair.
One trail ascends, and day by day
You climb—you cannot run—
And one is down hill all the way—
It's up to you, my son.

Stern duty guards the upper trail,
Exacts obedience, too,
And he who treads it cannot fail
To win, if he be true.
But fickle Folly, gay with smiles,
Rules o'er the other one,
And leads to ruin with her wiles—
It's up to you, my son.

At partings of the trails you stand,
At early manhood's gate;
Your future lies in your own hand—
Will it be low or great?
If now you choose the trail of right,
When you the height have won
You'll bask your honor's faded light—
It's up to you, my son.

—James Barton Adams in Denver Post.

Father's Luck.

Isabel could not sleep. A great beam of moonlight sifted through the open windows to etherealize with soft paleness the happy face upon the pillow, touching a teardrop glistening on the fresh young cheek.

Below, from the silent street, floated the strains of an old love ballad, as some belated soul, gifted beyond his fellows with musical expression, and doubtless animated by the cup, whistled clear notes in a sentimental rapture of feeling, as his irregular footsteps rang gently along the deserted pavement.

The girl listened in a half-dreamy delight. "It's lovely," she breathed. 'I wish he would stop and serenade me." Then, as the melody faded in distance, the long fringes of her eyelids closed in a sense of content and comfort as her thoughts wandered over the events of the hours just passed, and dwelt upon the brightness and beauty to be encompassed by the days to come.

For Theodore had asked her to be his wife and the fulfillment of her dream had begun. There would be no obstacles. Everyone would be pleased. He, rising in his profession, respected and worthy, she, Raymond Brightwood's daughter. And people would say: "How pretty Mrs. Spellman is! What a fine-looking couple!"

Isabel laughed softly. "I'm glad I have beauty, if it is 'only skin deep,'" she mused. "Glad for him, because he loves all beautiful things. Oh, I must get to sleep. To-morrow I shall have such a blissful awakening."

The fingers he had held were pressed against her lips, as the moonbeam shifted into shadow, and the little start and sigh proclaimed her slumber.

The roar of the city was well on as Theodore Spellman, full of the gladness of living, bought his morning paper. The new joy thrilling his veins gladdened his eyes, as he glanced over the pages. "Lots of trouble, but none for me," he thought, as he skimmed the columns of sensational disaster.

Suddenly the young lawyer gasped, as if from a blow. "Brightwood & Co. have failed!" he groaned. "It can't be!"

He backed to a railing and read hard and wretchedly, with frozen features, then crumpled the sheet in his hand and walked slowly through the crowd.

"Hullo!" a sharp voice met him. Can't you see anything? Oh, it's you, Teddy, is it? What's struck you?"

"Pardon me, Redway. I didn't see you. I was thinking. Is it true Brightwood's gone up? I'm on my way to the house."

His friend started. "Haven't you heard? The house is gone too?"

"Why, burned out. They are all over at Dawson's. Poor Isabel fell on the stairs and—Here! let go, you idiot, my arm is flesh and blood! What ails you, anyway? People are looking at us."

"Let 'em look. Come out of the crush. Now, tell me what you know, Dick. Is Isabel hurt?"

"Got her cheek laid open. Quite a wound, they say. Hold on! I'll tell you all about it." But Spellman had gone.

Mrs. Dawson herself came to the door. "Oh, yes! you can see Isabel, Mr. Spellman. She is on the sofa in the library. Perhaps an old friend like you will be some comfort. Awful for them, isn't it? Coming right on top of the failure, too! Do you hear that whistling upstairs? That's Mr. Brightwood. I declare, that man is absolutely without feeling!"

Spellman followed her directing finger and pushed through the portiers. The next moment he was kneeling with his lips on the poor bandaged head, in silent agony.

Isabel sobbed piteously, clasping her lover close. "I'm sure I don't know what we shall do," she moaned. "Such dreadful things never happened to anybody before. I'm going to release you, Theodore, dear. You can't go down with us—it isn't fair. No one knows of our engagement yet. I suppose I shall have a great scar and be a fright. You can't be tied to all this trouble and you musn't think of it!" In his mad jostle to reach her side the man had thought of all this too. Yes, it was madness, but he could not give her up.

"Don't talk so, darling," he whispered, "You will always be the same to me. We can wait; I know things look black, but nothing shall ever separate us now."

Yes, he loved her very dearly, it was his clear duty to forget everything else, but it meant—what?

Isabel stroked the bowed head and cried softly. "I was so happy last night," she whispered, "and now—"

"Ho! Ho! sounded a loud voice from the doorway. "Well, you folks look cheerful, failures and fires notwithstanding. That's right!"

Spellman scrambled to his feet and confronted the rotund figure and beaming countenance of Raymond Brightwood.

"I've been expecting this," chuckled the big broker, holding out a fat hand. "Sit down, Theodore! Sit down, my boy! Right there by Isabel. I'll sit here!"

"He hasn't failed after all," thought the young man, joyfully. "Yes," said he, "I'm going to take your little girl away from you, sir."

"Sorry I can't give you a big wedding," smiled Brightwood, "but I'll manage a nice little one somehow. What with busting and burning out, I expect to be short for a while."

"You've really failed then?" said Spellman, his heart sinking.

"Of course, of course! The papers all had it. Nothing but a square wind up. Nobody stuck! That don't bother me. I've been there before, my son." He stretched out his feet with a benign grin.

"I'm letting them mull over it at the office this morning," he went on. "That's why I'm here. Besides, I want to keep an eye on the ruins in the next block. If it wasn't for Isabel's scratch, I'd give thanks for that conflagration. Lost a lot of old truck, that's all, and I've got a big insurance."

"Scratch!" cried his horrified daughter, sitting up in wrath. "Why, father, it will leave a terrible scar."

"Don't you believe it! The doctor told me it was a nice clean cut, would heal finely, and he's got a new thing to use on it. A cunning little scar is a sort of a beauty spot anyway, dearie. Have a smoke, Theodore. I guess the Dawsons won't mind."

Spellman accepted the proffered weed, and regarded his prospective father-in-law with wondering eyes.

Brightwood puffed reflectively. "Good thing all 'round," he observed. "House old—didn't like the location—can get big price for the lot. Buy a nice little place further out, live a great deal cheaper and be a sight more comfortable. In six weeks I'll be on my feet again. Don't owe a cent, and if I can get Judge Minton interested I can start right away. My customers will stay by me. To be sure, I've lost a lot, but no one else did. I was getting fat and lazy, and hard work is just what I need. I like the prospect."

"You're a wonderful man!" burst out Spellman.

"Not at all— I'm a sensible man. I know just how you two and about everybody else look at these things and you're all wrong. I've all the time there is. I'll tell you a bit of a story. May have to hurry it some and not tire Belle.

"Sit closer, father," said the girl. "How easy you make things."

"Let's see—I'm only 54. I was 32 then," began Brightwood, rubbing his bald head and eyeing them approvingly. "You were about two, and Jennie a mite of a baby. I was doing business in St. Louis and I went up—Cincinnati crowd cornered wheat, and my folks didn't respond to margins. Carried 'em too long, like a fool. In those days I used to have the blues pretty easy and that evening I left my place about 6 o'clock. Well, indigo was bright red compared to my feelings. I had a mind to go down to the river, say 'Here goes nothing,' and jump in. I had just $48 in my pocket—all I had in the wide world, but I was square with the other fellows, I couldn't go home to Carrie and the babies. Said I, 'Do something, old man, you'll go crazy. Blow yourself off to a good dinner and do your thinking afterward.'

"So I went over to Guy's and ordered all the best I could think of, and a small bottle. Guess I had more than that, don't remember. I went out sucking on a Henry Clay, and feeling gala. Matters were looking more rose-colored, and I wasn't ready to go home; I couldn't. Now where do you think I went?"

"Theater!" put in his daughter.

"I went to a prize fight—a rattler too! No matter how or where, but I got there and it was a rough house. I felt like seeing some one get licked worse than I was. The boys were middle weights, but one seemed small beside the other chap. I picked him to go thrashed and he was, but he never knew it. Down he would go, and every time he would get up and laugh and sail in. He never let go of that grin. But the other man never cracked a smile—he was a surly looking brute—and when they had fought until we all thought the little one was gone, I got wild and jumped up.

"'He'll win out yet! I yelled 'What odds do I get?'

'Odds! Well, my $40 were up at five to one before I knew it, and a big sport holding the stakes. The crowd was jeering at me for a fool, when my lad with a smile got in a lucky blow and knocked his man clean out. I can hear 'em cheer yet, even the losers. I slid out with my money—two hundred and forty—and put for home. That lesson I never forgot. Say, is that a child screaming?"

The cheerful man of business rushed out without his hat, shouting loud warnings.

The others ran to the window. "They will both be killed," wailed Isabel. "There goes father right under the wheels—he's down. No, he's up! Oh! he's saved that baby!"

"The little rascal ran away from his nurse," panted Brightwood, returning. "I got him just in time. Confound that automobile drive! Did you see me roll over? I'm pretty dirty, but what luck, children! That was Judge Minton's boy!"

Creams and Ices.

Vanilla Ice Cream.—Take one quart of milk, one pint of cream, four eggs, two tablespoonfuls of cornstarch, one pound of powdered sugar, vanilla essence. Stir the cornstarch very smoothly with a little of the scalded milk in which is the dissolved sugar; beat the yolks of the eggs. Boil the rest of the milk, pour it over the cornstarch; then stir in the beaten yolks of eggs and add a pinch of salt. Stir this mixture over the fire until it is slightly thick and clings to the spoon; then allow it to cool. Beat the whites of eggs to a stiff froth, mix them with the custard and flavor with vanilla essence to taste.

Lemon Water Ice.—To make lemon water ice, take eight lemons, twelve ounces of loaf sugar, four eggs, whites only. Put into an enameled saucepan the thinly larded pared rinds of three lemons, add it to the syrup, which must also be strained from the peel. When cool, beat up the whites of the eggs and stir them in. Pour into the ice pail and freeze.

Orange Water Ice.—Orange water ice may be made by taking seven oranges, one lemon, ten ounces of loaf sugar, four eggs, whites only. Grate the oranges and lemon with the lumps of sugar until most of the yellow part is removed. Simmer the sugar with a quart of cold water five minutes. When cool, add the strained juices of the oranges and lemon and the whites of eggs beaten to a froth. Freeze according to directions given with the particular machine used. Whites of eggs give more body to water ices, but may be omitted if desired.

Fruit Ice.—To any fruit ice take the following ingredients: Three pints of fruit, twelve ounces of powdered sugar, two whites of eggs. Pick the stalks from the fruit, lay it on a flat dish and sprinkle it thickly with four ounces of the sugar. Simmer the rest of the sugar with a quart of water for ten minutes. Rub the fruit through a fine sieve with the back of a spoon. Mix this with the syrup, then stir into it the beaten whites of the eggs. When cool, freeze as before.

Chocolate Ice Cream.—To make chocolate ice cream, take one quart of cream, one pint of milk, three-quarters of a pound of sugar, two eggs and five tablespoonfuls of chocolate. Scald the milk and add the sugar, then the eggs, beaten together, and the chocolate, rubbed smooth into a little milk. Stir all together and place over the fire until it begins to thicken. When cool, freeze in the freezer.

Peach Ice Cream.—To make peach or any other fruit ice cream, put half of the cream on to boil; when hot add the sugar and stir until it dissolves. Take from the fire, add the rest of the cream, and when cold freeze this. Take the fruit, remove any skin or seeds,

and mash to a pulp which can be passed through a fine sieve. Stir quickly into the ice cream, turning the handle for five minutes longer. Then place aside or serving.

The Language of Colors.

According to tradition, sky-blue denotes amiability, gentleness and power; pale yellow, riches, knowledge and deceit. Orange is significant of splendor, intelligence and falseness, while rose-pink is emblematic of youth, gayety and affection; in a dark tone it reads joy, victory and love. Damask-red pertains to dignity, pomp and ostentation. Dark blue belongs to friendship and fidelity, combined with peace. White represents purity, innocence and refinement; gray, sadness, indifference and age; violet, nobility; maroon, if in very rich fabric, modest elegance, but more commonly it belongs to poverty and resignation. Tender silver-green is the accompaniment of youthful hope; deep green indicates vigor, strength, trust and plenty.

Colors are of great antiquity and frequent mention is made of them in the Bible. To the cochineal insect we are indebted for carmine and scarlet; ivory and bone black are produced from ivory chippings; the cuttlefish supplies sepia; and from the camel we have Indian gold. Turkey-red is procured from the madder plant, which grows in Hindoostan; Prussian blue is manufactured by fusing horses' hoofs with impure potassium carbonate; the natural earth of Sienna furnishes raw sienna and that of Umbria, when burnt, umber.

Every nation out of Europe employs a different hue as its sign of mourning. For instance, faint brown, to symbolize withered leaves, is worn in Persia; the Ethiopians and Abyssinians don smoke-brown as significant of earth; the Chinese array themselves in white, emblem of white-handed Hope; and sapphire blue is chosen in Bokhara. In Egypt and Burmah yellow indicates losses, the shade of the sere and faded leaf; and in Turkey we find violet fashions the garment of grief.

Pleasantries.

Wife — O, doctor, Benjamin seems to be wandering in his mind. Doctor (who knows Benjamin)—Don't trouble about that, he can't go far.

A little girl went into a neighbor's house one day and some apple parings lay on a plate on the table. After sitting awhile she said, "I smell apples." "Yes," the lady replied, "I guess you smell these apple parings on the plate." "No, no," said she, "'taint them I smell. I smell whole apples."

Mrs. Waldo (of Boston)—I have a letter from your Uncle James, Penelope, who wants me to spend the summer on his farm. Penelope (dubiously) — Is there any society in the neighborhood? Mrs. Waldo — I've heard him speak of the Holsteins and Guernseys. I presume they are pleasant people.

Little Tommy Ray quarreled with his sister and would not kiss and be friends. His aunt said, "Oh, don't you remember what papa read at family prayers this morning, that we were to forgive seventy times seven?" "Yes," replied Tommy, "but I tickerlarly noticed it was to your brother, not sister."

Little Margery, playing with her kitten, got a rather severe scratch from the animal. Her lip trembled for an instant, and then she assumed the commanding attitude and expression that her mother had assumed under somewhat similar circumstances toward her, and, extending her hand sternly, "Titty, dive me dat pin."

A Sunday school teacher asked her class if they knew where the Garden of Eden was. One little miss held up her hand and said, "I know." "Well, where is it?" asked the teacher. "West of the land of Nod." "But," objected the teacher, "how do you prove that?" "Because the Bible says the land of Nod was east of Eden. Then, of course, Eden must be west of Nod." Could anything be made plainer than that?

The Wonders of a Watch.

The watch carried by the average man is composed of ninety-eight pieces, and its manufacture includes more than 2000 distinct and separate operations. Some of the smaller screws are so minute that the unaided eye cannot distinguish them from steel filings or specks of dirt. Under a powerful magnifying glass a perfect screw is revealed. The slit in the head is two-thousandths of an inch wide. It takes 308,000 of these screws to weigh a pound, and a pound is worth $1585.

The hairspring is a strip of the finest steel, about nine and one-half inches long, one hundredth of an inch wide, and twenty-seven ten-thousandths of an inch thick. It is coiled up in spiral form and finely tempered. The process of tempering these springs was long held as a secret by the few fortunate ones possessing it, and even now it is not generally known

The strip is gauged to twenty-one thousandths of an inch, but no measuring instrument has as yet been devised capable of fine enough gauging to determine beforehand by the size of the strip what the strength of the finished spring will be. A twenty-thousandth part of an inch difference in the thickness of the strip makes a difference in the running of a watch of about sixteen minutes per hour.

The value of these springs, when finished and placed in watches, is enormous in proportion to the material from which they are made. A comparison will give a good idea. A ton of steel made up into hairsprings, when in watches, is worth more than twelve and one-half times the value of the same weight in pure gold.

Hairspring wire weighs one-twentieth of a grain to the inch. One mile of wire weighs less than half a pound. The balance gives five vibrations every second, 300 every minute, 18,000 every hour, 432,000 every day, and 157,680,000 every year. At each vibration it rotates about one and one-fourth times, which makes 197,100,000 revolutions every year.

In order that we may better understand the stupendous amount of labor performed by these tiny works, let us make a few comparisons.

Take, for illustration, a locomotive with six-foot driving wheels. Let its wheels be run until they are given the same number of revolutions that a watch makes in a year, and they will have covered a distance equal to twenty-eight complete circuits of the earth. All this a watch does without other attention than winding once in twenty-four hours.

Domestic Hints.

STRAWBERRIES PRESERVED WHOLE.—Cap the berries, saving all the juice that flows from them. Weigh the fruit and allow a pound of sugar to each pound of berries. Put sugar and juice into a preserving kettle and cook until the sugar is dissolved, then lay in the berries. Simmer for seven minutes, then pour the berries, and the juice with them, into broad, shallow plates or dishes, cover with panes of glass or pieces of mosquito netting and set in the direct rays of the hot sun, taking them into the house at night. Do this each day until the syrup is thick, then pour into preserve jars and seal.

FRIED TOMATOES.—Tomatoes are so good as a salad that it seems too bad to ever cook them. Still, fried tomatoes are delicious and sometimes may be made to serve in place of a meat dish at luncheon. Slice the tomatoes without peeling into rather thick slices. If the vegetable is overripe it will fall to pieces in the pan, so be sure that the slices are firm. Dip them in crumbs, brush with oil and again dip in bread crumbs. Fry in a little butter, and just before taking out pour into the pan half a cupful of sweet cream. Stir this quickly and pour the sauce over the tomatoes.

New Egg Test.

The purchaser of an egg has no ready guide by which he may judge of its age; and, as the term "new-laid," as employed commercially, has such elasticity that it may mean anything from a few days to many weeks, he is always at a disadvantage. A new and simple test has, however, been discovered by which the age of even a shop egg can be correctly gauged, the method being based upon its floating powers in brine.

Everyone knows that at the end of an egg there is an air space, and that while this is represented by a mere dimple in a really fresh specimen, the space increases with age, and that extremity of the egg naturally becomes more and more buoyant.

A perfectly fresh egg will assume a horizontal position in the brine; when it is from three to five days old the end tips up and its long axis forms an angle of 20°; at eight days old it will assume an angle of 45°, at fourteen days 60°, at three weeks 75°, and when a month old it will stand vertically upon its pointed end. A scale is attached to the glass vessel in which the brine is held, so that the angle assumed by the floating egg can be easily read off.



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The Markets.

San Francisco Produce Report.

San Francisco, July 19, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.		Sept.	
Wednesday	$ 90⅜@	89½	87¼@	85⅞
Thursday	89½@	88	85⅞@	84½
Friday	88 @	86⅞	84¾@	83⅞
Saturday	87⅛@	86¼	84¾@	83⅞
Monday	86 @	84¾	83⅝@	82⅝
Tuesday	85¾@	84½	83½@	82⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	56½@56	55½@54⅛
Thursday	56⅜@55½	55⅛@54⅛
Friday	56⅜@55⅞	54⅞@54⅛
Saturday	57⅛@56⅜	55⅝@54⅜
Monday	58½@56⅜	55⅞@54⅜
Tuesday	57⅛@56⅜	55¼@54⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 46½@1 45⅝	$ ——@——
Thursday	1 44½@1 43⅝	——@——
Friday	1 43¾@1 42⅝	——@——
Saturday	1 44¾@1 43½	——@——
Monday	1 43 @1 41¾	——@——
Tuesday	1 43⅜@1 42½	——@——

Wheat.

Local prices for cash wheat, aside from very choice old crop which is scarce, had an easier tone during the earlier part of the week, but prices have firmed up again and the market is now price stiff at the old figures. In the East the market has been more or less influenced by speculative buying. Liverpool prices were lower during a portion of the week but have now fully recovered. It is now predicted that there will be no movement from the East in wheat this year, as there will be some surplus on the coast from present indications. The market remains very short, Northern old wheat being especially well cleaned up. The mills are beginning to get a little anxious on account of the scarcity of the supply on hand and on account of the fact that about 40% of that now on hand is not millable. There has been some trading in December wheat at ruling prices. The English spot market is dull, with but indifferent operating. The grain tonnage at San Francisco and on the way is 16,887 as compared with 3050 at the same date last year. The disengaged tonnage is 37,757 compared with 79,865 at the same date last year.

California Milling	$1 55	@	1 65
Cal. No. 1 shipping, alongside	——	@	——
Cal. No. 1 shipping	1 50	@	1 55
Oregon Club	1 50	@	1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.43¼@1.43.

Flour.

Trading in flour has been fairly active during the past week with steady prices and light receipts. Prices remain firm but with no tendency to advance, although it is admitted that there is a scarcity of good milling wheat. The jobbing movement in old flour has been very small, the jobbers for the most part preferring to wait for the coming in of a large crop of Northern wheat.

Superfine, lower grades	$3 25	@	3 50
Superfine, good to choice	3 50	@	3 75
Country grades, extras	4 25	@	4 50
Choice and extra choice	4 50	@	5 00
Fancy brands, jobbing	5 00	@	5 25
Oregon, Bakers' extra	3 75	@	4 25
Washington, Bakers' extra	3 75	@	4 40

Barley.

The spot market for barley has been much easier during the last few days owing to heavy receipts. Spot feed prices show a decline of about 2½c. A good deal of off grade barley is now being offered here and is finding a very slow sale. There has been considerable activity in December barley, the price dropping as low as 92½c during a portion of the week. Prices are still too high for export, but shippers are counting on the heavy receipts to bring values down to an export basis.

Feed, No. 1 to choice spot	$1 00	@	1 02½
Feed, fair to good, to arrive	95	@	98¾
Brewing, No. 1 to choice old	——	@	——
Chevalier, No. 1 to choice	1 10	@	1 15
Chevalier, common to fair	1 00	@	1 07½

Oats.

Old oats are now pretty well out of the market owing to an increased activity in buying during the current week. Red oats show an increase in price, some holdings having brought $1.35 per cental for choice. The receipts were somewhat lighter than for last week and buyers are beginning to turn their attention to futures, as high as $1.35 being offered in the local market.

White oats, fancy feed	$ ——	@	——
White, good to choice	——	@	——
White, poor to fair	——	@	——
Milling	——	@	——
Black oats	1 45	@	——
Red, fair to choice new	1 22½	@	1 35

Corn

The receipts of corn have been small during the current week and the market is a little weaker. What movement there is is mostly in Eastern, for which the prices are quotably the same as last week, though probably a shade weaker.

Large White, good to choice Cal	$1 42½	@	1 47½
Large Yellow	1 40	@	1 45
Small Yellow	1 47½	@	1 52½
Egyptian White	——	@	——
Egyptian Brown	——	@	——
Eastern, sacked	1 35	@	1 45

Rye.

There has been some movement in rye during the current week. Receipts were somewhat heavier but not enough so to affect prices. It is expected that the old stock now held will be well cleaned up by the time the new crop is on the market.

Good to choice	$1 40	@	1 45

Buckwheat.

The movement in buckwheat continues very light. Scarcely sufficient stock can be secured by the mills for immediate wants. Prices quoted are largely nominal.

Good to choice	$2 25	@	2 50

Beans.

Buying in the local bean market has been good during the current week and stocks have been still further reduced, especially in black eyes and pinks. Large quantities of off-grade pinks and considerable lots of off-grades in other varieties have been received. These are selling at prices ranging, for pinks, from $1.75 to $2.50. No stock of strictly high-grade pinks can, however, be had at these figures. Limas, bayos, reds, red kidneys and small whites are now scarce. Large whites are more plentiful but are expected to be cleaned up before the new crop comes in. The outlook for the growing crop is good. So far, no future buying is reported and no extensive buying of futures is expected for some time.

Pea, good to choice, 100 lbs	$ ——	@	——
Small White, good to choice	3 30	@	3 60
Small White, damaged	1 50	@	2 75
Large White	2 50	@	2 90
Large White, damaged	1 50	@	2 40
Pinks	3 25	@	3 90
Pinks, damaged	1 75	@	2 75
Bayos, good to choice	3 65	@	4 00
Bayos, damaged	2 50	@	3 50
Red Kidneys	——	@	——
Reds	6 00	@	7 50
Limas, good to choice	5 65	@	5 75
Black-eye Beans	3 00	@	3 15

Dried Peas.

There have been some small receipts of new green peas but not of sufficient size to enable prices to be quoted and it will be some days before these are established. Some have been sold at from $1.50 to $1.75. The supply of old stock on hand has been materially diminished the current week. The stock of all kinds is very low and prices are being well maintained, though the demand has been only fair.

Green Peas, California	1 75	@	2 25
Garbanzos, Large	3 25	@	3 50
Garbanzos, Small	——	@	——
Niles	1 50	@	2 00

Hops.

The hop market has remained very weak during the current week, due to an unwillingness on the part of buyers to engage in handling the stock. The general conditions suggest that the near future will see a still further reduction in prices, owing to reported large stocks of 1904 hops still held in the hands of the growers. Hold over stocks are now coming in in considerable quantities, and these have a tendency to depress the market. Prices on 1904 hops are about as heretofore, although it is claimed that some sales were made this week at as low as 16½c. Future contracts for 1905 hops due to arrive in about sixty days have been closed at as low as from 15c to 16c on the ranches. It is estimated by buyers' interests that about 3500 bales of hops are now held in first hands in California, and that on the entire coast 23,000 bales are held.

Good to choice 1904 crop, nominal	16½	@	20

Wool.

The local wool market remains very quiet, in sympathy with the Eastern market, but with prices ruling firm as quoted, owing to the fact that the supply of wool now on hand is very limited. In fact, the market is almost clear of all grades, most of the spring clip having found a ready market in the East. A few light holdings of scoured wool are still to be found and are being sold as fast as offered at current prices. A few contracts have been made for fall wool but the trading in futures has been very limited and at varying prices. Most dealers have withdrawn from the market entirely and only a very desultory trade can be expected until the fall shearing commences, about the middle of September.

SPRING.

Humboldt and Mendocino	27	@	30
Northern, free	25	@	27
Northern, defective	22	@	24
Middle County, free	25	@	——
Middle County, defective	20	@	22
San Joaquin and Southern, free	20	@	22
San Joaquin and Southern, defective	15	@	18
Oregon, valley	26	@	28
Eastern Oregon	16	@	22
Nevada	20	@	24

Hay and Straw.

The hay market is very weak just at present, owing to heavy arrivals. There has been a tendency to decline in prices all along the line, and hay is still arriving at an average of probably 1200 tons daily. Monday's receipts were 1400 tons and Tuesday's 1000 tons. The bulk of receipts consists of medium wheat, and wheat and oat hay which is selling at $10 and $11 per ton. If the present run of receipts keeps up it seems probable that there will be a drop of $1 or $2 next week. The bulk of the crop is still unsold, as both dealers and consumers are looking for lower prices. It is estimated that this year's crop will run 25% larger than that of last year. Old hay is no longer quoted.

NEW HAY.

Wheat, good to choice	$ 8 50	@	14 00
Wheat and Oat	7 00	@	12 00
Tame Oat	6 00	@	11 50
Wild Oat	5 00	@	8 00
Alfalfa, prime	10 00	@	——
Alfalfa, poor to fair	6 00	@	7 00

OLD HAY.

Wheat, good to choice	$ 9 50	@	14 00
Wheat and Oat	9 00	@	13 00
Tame Oat, fair to choice	7 00	@	11 00
Wild Oat	6 00	@	8 00
Barley	7 00	@	9 00
Clover	6 00	@	9 00
Stock hay	5 00	@	6 50
Compressed	10 00	@	13 00
Straw, ℔ bale	30	@	50

Millstuffs.

The supply of bran and middlings now in the market continues very short and it now looks as though there might be an acute scarcity before a new supply comes in. The demand is reported good for the general line of millstuffs. Prices are generally firm at previous quotations.

Alfalfa Meal, ℔ ton	$18 00	@	20 00
Bran, ℔ ton	21 00	@	22 00
Middlings	25 50	@	27 50
Shorts, Oregon	21 50	@	23 00
Barley, Rolled	21 50	@	22 00
Cornmeal	30 00	@	30 50
Cracked Corn	30 00	@	31 00
Oilcake Meal	33 50	@	35 00
Cocoanut cake or meal	21 00	@	22 00

Seeds.

The seed market is a shade quieter than at last report, but with little appreciable changes in prices. There has been no movement in alfalfa for several weeks past and prices are merely nominal. Flax shows a slight decline since last quotations, $2.50 being the highest offered in the local market for choice.

Flax	$2 25	@	2 50
Mustard, Yellow	3 25	@	3 75
Mustard, Trieste	4 50	@	5 00
		Per lb.	
Alfalfa		—@—	
Canary		6¼@	6¾
Rape		2½@	3
Hemp		3½@	——
Timothy		5 @	5½

Honey.

There is now plenty of new honey of good quality on the market, but it is moving slowly and prices continue weak. Prices for all grades of both extracted comb honey are ruling lower than last year and even at the low prices there is a tendency for stock to accumulate.

Extracted, Water White	5	@	——
Extracted, White	4¾	@	——
Extracted, Light Amber	4	@	——
Extracted, Amber	3	@	3½
Extracted, Dark Amber	2½	@	——
White Comb, 1-frames	11	@	——
Amber Comb	8	@	10

Beeswax.

The market for beeswax is reported steady, with no change in prices and no great volume of business.

Good to choice, light ℔	27	@	29
Dark	25	@	26

Live Stock and Meats.

The market is very slow, but with prices on beef and mutton held firm at prices quoted. There has been a slight advance in the price of small veal, the price being now from 8@9c. The hog market shows up a little easier, owing to large receipts for the current week.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ℔	5	@	5¾
Beef, 2nd quality	4½	@	5
Beef, 3rd quality	3½	@	4½
Mutton—ewes, 6@7c; wethers	7	@	——
Hogs, hard grain, 130 to 200 lbs	5¾	@	6
Hogs, large, hard, over 200 pounds	5½	@	5¾
Hogs, small, fat	5¾	@	5⅞
Veal, large, ℔	5	@	7
Veal, small, ℔	8	@	9
Lamb, yearlings, ℔	8	@	——
Lamb, spring, ℔	8	@	9

Hides, Skins and Tallow.

Hide prices are very firm again this week, values going up about ½c in the leading varieties. The Eastern market is very firm for all sound hides and the local market has responded to a large extent. Tallow continues very low and the demand continues weak.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.		Culls.
Heavy Steers, over 56 lbs	12 @	——	11 @ ——
Medium Steers, 48 to 56 lbs	11 @	——	10 @ ——
Light Steers, under 48 lbs	11 @	——	10 @ ——
Heavy Cow Hides, over 50 lbs	11 @	——	10 @ ——
Light Cow Hides, under 50 lbs	11 @	——	10 @ ——
Stags	7 @	8	7 @ ——
Wet Salted Kip	10½ @	——	10 @ ——
Wet Salted Veal	12 @	——	11 @ ——
Wet Salted Calf	13 @	——	12 @ ——
Dry Hides	19 @	——	19 @ ——
Dry Kip and Veal, 11 to 16 lbs	16 @	17	15 @ ——
Dry Calf, under 4 lbs	20 @	21	19 @ ——
Pelts, long wool, ℔ skin	1 50	@	2 00
Pelts, medium, ℔ skin	90	@	1 25
Pelts, short wool, ℔ skin	60	@	90
Pelts, shearling, ℔ skin	20	@	50
Horse Hides, salted, large prime, each	3 00	@	——
Horse Hides, salted, medium	2 75	@	——
Horse Hides, salted, small	2 25	@	——
Horse Hides, dry, large	1 75	@	——
Horse Hides, dry, medium	1 50	@	——
Horse Hides, dry, small	1 00	@	——
Tallow, good quality	4	@	4¼
Tallow, poorer grades	2½	@	3½

Bags and Bagging.

The market for bags is in very good shape. The stock now on hand is very large and has been increased by recent heavy receipts, but the demand has been so brisk that prices are well maintained at the figures quoted. Wool sacks show an advance of 1c over last quotations, the ruling price being 33c.

Bean Bags	$	5¼	@——
Fruit Sacks, cotton		6½	@7¼
Fruit Sacks, jute, as to quality		6	@7½
Grain Bags, Calcutta, 22x36, spot		7½	@7¾
Grain Bags, Calcutta, buyer June-July		——	@——
Wool Sacks, 4-lb		33	@——
Wool Sacks, 3½ lb		30	@——

Poultry.

Receipts of both local and Eastern poultry continue quite heavy and the market is ruling rather easy—almost dull. Even at present quotations many sales are forced, as the trade is not overanxious to buy. Small squabs are neglected, there being no demand for them at present.

Turkeys, choice Young, ℔	$ 24	@	37
Turkeys, live gobblers, ℔	19	@	21
Turkeys, live hens ℔	18	@	20
Hens, California, ℔ dozen	4 00	@	4 50
Hens, large	5 50	@	6 50
Roosters, old	4 00	@	4 50
Roosters, young (full-grown)	5 00	@	6 00
Fryers	3 50	@	4 00
Broilers, large	2 50	@	3 00
Broilers, small to medium	2 00	@	2 50
Ducks, old, ℔ dozen	3 50	@	4 00
Ducks, young, ℔ dozen	3 00	@	4 50
Geese, ℔ pair	1 25	@	1 50
Goslings, ℔ pair	1 25	@	1 75
Pigeons, old, ℔ dozen	1 25	@	——
Pigeons, young	1 25	@	1 50

Butter.

Notwithstanding the fact that the past week has been rather a dull one, prices are firm, showing an advance of about 2c in all the better grades. For some reason there has been an acute scarcity of good butter for several days past. Operators in this market, however, look for a stationary market for some time to come, as prices have now reached a point where any further advance would lead to a pulling out of storage butter.

Creamery, extras, ℔	23	@	24
Creamery, firsts	21	@	22
Creamery, seconds	18	@	20
Dairy, select	20	@	21
Dairy, firsts	17	@	——
Dairy, seconds	17	@	——
Mixed Store	16	@	17

Cheese.

Cheese is still weak with continued large arrivals and no particular demand. Some poor cheese has come in again this week as a result of last week's hot weather, though, on the whole, the quality shows improvement. Some of the best fancy cheese is still quoted at 10c; but, on the whole, the market may be considered slightly lower than a week ago.

California, fancy flat, new	9½	@	10
California, good to choice	9	@	9½
California, fair to good	9	@	9½
California, "Young Americas"	10	@	12
Eastern, new	12½	@	13½

Eggs.

Eggs moved up 2c more this week and all available lots of good stock have cleaned up readily. There is a possibility of a further advance, although any notable upward movement in prices will undoubtedly be followed by the bringing of storage eggs into the market. Receipts are fairly large for this season of the year. Receipts of store eggs require careful assorting and are dull.

California, select, large, white and fresh	24	@	25
California, select, irregular color & size	21	@	22
California, good to choice store	16	@	17
Eastern firsts	17½	@	18
Eastern seconds	15	@	17

Potatoes.

Potatoes are coming in more freely this week and prices have receded accordingly. The quality is showing up well, the receipts this week being riper and generally of a better holding quality than heretofore. Salinas Burbanks are now in fair supply, the price being quoted at from $1 to $1.10. Some potatoes which were burned by the recent hot weather had been selling at low figures, but these have now been disposed of.

Cal. Early Rose, ℔ cental	50	@	60
Cal. Burbanks, ℔ cental	50	@	75

Salinas Burbanks	1 00	@	1 10
Chile Garnet, ℔ cental	50	@	60
White Rose, ℔ cental	50	@	65

Vegetables.

The vegetable market continues very dull, owing to the very unreliable state of the weather. There is practically no asparagus now in the market. Rhubarb is also nearly exhausted. Summer squash shows a slight weakness, only the very choice grades bringing the maximum quotation. The demand for tomatoes is very light and the receipts large, in consequence of which there has been a notable drop in prices, 50c per crate being the highest figure offered. It is getting very late for red onions, which will probably be entirely out of the market in a week or two.

Asparagus, No. 1 to choice, ℔ lb	5	@	6½
Asparagus, No. 2, ℔ lb	3½	@	4
Beans, Lima, ℔ lb	—	@	—
Beans, String, ℔ lb	1½	@	3
Beans, Wax, ℔ lb	2	@	3
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ crate	—	@	1 25
Egg Plant, ℔ lb	5	@	8
Garlic, ℔ lb	3	@	5
Mushrooms, ℔ lb	—	@	—
Onions, New Yellow Danvers, ℔ ctl.	1 15	@	1 25
Onions, New Red, ℔ ctl	60	@	75
Peas, Green, ℔ sack	1 00	@	1 50
Peppers, Bell, ℔ lb	8	@	10
Peppers, Green, ℔ lb	10	@	15
Rhubarb, ℔ box	50	@	75
Summer Squash, per large box	30	@	—
Tomatoes, ℔ box or crate	35	@	50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Fresh fruits have been coming in freely during the past few days and prices are generally lower. Most varieties show up better in quality than last week, although a good many off quality apricots are being received. Most of the apricots are coming in in bulk at prices ranging from $10 to $20, with but little of the fruit realizing the latter figure. Loganberries are quoted higher, with but very little stock in the market. Figs are also held more firmly than last week. Peaches are more plentiful and are lower in price, but are selling well. Pears are of good quality and are selling as high as $60 per ton in bulk. In 40-pound boxes pears are of even quality and are selling at from $1.50 to $1.75. Grapes are still scarce, those in the market being held at the same figures as last week. Bulk plums are now selling at from $10 to $15 per ton.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 25
Apples, good to choice, ℔ 50-lb. box	75	@	90
Apples, fair to good, ℔ 40-lb box	35	@	60
Apricots, in bulk, ℔ ton	10 00	@	20 00
Apricots, ℔ box	25	@	50
Blackberries, ℔ chest	1 25	@	2 50
Cantaloupes, pony crate	1 35	@	—
Cantaloupes, ℔ standard crate	2 00	@	—
Crabapples, ℔ large box	50	@	65
Currants, ℔ chest	4 00	@	5 50
Figs, ℔ one layer	50	@	75
Figs, ℔ two layer	1 25	@	1 50
Gooseberries, English, ℔ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ℔ crate	1 00	@	—
Huckleberries, ℔ lb	12½	@	—
Loganberries, ℔ chest	3 50	@	5 00
Peaches, ℔ large box	50	@	85
Peaches, ℔ small box	35	@	50
Pears, Bartlett, fair to choice, 40-lb box	1 50	@	1 75
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ℔ crate	40	@	60
Plums, ordinary, ℔ box	30	@	50
Plums, Simoni, ℔ crate	65	@	75
Prunes, Tragedy, ℔ crate	40	@	65
Raspberries, ℔ chest	3 00	@	5 00
Strawberries, Longworth, ℔ chest	2 00	@	4 00
Strawberries, large var., ℔ chest.	2 00	@	2 50
Watermelons, ℔ doz	1 00	@	2 50
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The movement in dried fruits continues to be very light. Growers are backward in selling their product at present prices and San Francisco buyers show no inclination to offer more. Some little interest is being taken in prunes, but so far no considerable transactions are reported. New crop dried peaches are just coming in, but prices have not yet been definitely fixed. Apricots of the new crop are arriving quite freely, but the quality is rather poor owing partly to the heat and partly to the presence of scale. Dried plums of the new crop are not yet on the market, but the first arrivals are expected shortly. Old crop plums are exceedingly dull and the market for these is weak:

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	6
Apples, extra choice to fancy, 50-lb boxes.	6	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	5	@	6
Apricots, Royal, fancy	7	@	7½
Figs, 10-lb box, 1-lb cartons	55	@	60
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	—	@	4½
Peaches, unpeeled, good to choice	5½	@	6½
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	—	@	—

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1⅞c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	3	@	3½
Figs, Black	2½	@	4

Raisins.

The raisin market is unchanged as to prices, although there is a steady demand, and there would probably be considerable business except for the uncertainty of the situation as to the coming crop. The new organization of growers is still undecided as to its future action, and pending the decision but little future buying will be done.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	3	@	—c
3-Crown Standard	4	@	4¼c
4-Crown Standard	4¾	@	—c
Seedless Thompsons	4	@	—c
Seedless Sultanas	—	@	3 c
Fancy, 16-oz. Seeded	6	@	6¼c
Choice, 16-oz. Seeded			4½c
Fancy, 12-oz. Seeded			4¾c
Choice, 12-oz. Seeded			3¾c

Citrus Fruits.

The orange market is without change since last week. All the leading varieties are held at precisely the same figures. Lemons are weaker and limes are stronger. Grape fruit is unchanged.

Oranges, Navels, choice to fancy, ℔ bx	2 75	@	3 00
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	—	@	—
Oranges, Valencias, ℔ box	2 25	@	3 50
Oranges, Mandarins, small	1 50	@	1 75
Lemons, California, select, ℔ box	2 75	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	1 50	@	2 50
Limes, ℔ box	5 00	@	8 00

Nuts.

There is no longer any doubt as to the cleaning up on the nut market before the new crop comes in. Almost all varieties of almonds are out of first hands, and of walnuts the only varieties held in first hands to any extent are number 1 and number 2 hard shells and number 2 soft shells. These are expected to clean up easily before the new crop comes in.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½

Wine.

The local wine market is in good shape. Prices continue very firm with a slight tendency to advance. Advices from Lodi say that the California Wine Association is offering $12 per ton for wine grapes in that locality and that some growers are signing at this price. A raise in price is expected, as all districts have not the same prospect for a big yield that the northern San Joaquin valley has. It is reported that the outlook in the dry wine districts is for a much heavier crop than last year, while in the sweet wine districts the crop will average somewhat less than last year.

ROCKY FORD MELONS.—Lindsay Gazette, July 14: Our first year's experiment in growing Rocky Ford melons has developed many points which will undoubtedly be better understood in the future. Only so far as a lack of knowledge as to just what is required in the work of planting, cultivating and irrigating has the experiment been a failure, while on the other hand many evidences show that thorough success may be realized in future undertakings. Out of quite a large acreage planted here the profitable bearing will not perhaps exceed thirty acres, from which regular daily shipments by express are now going to near-by markets. Many plantings failed because the soil was not tended properly during the rains just after the seed was planted; others had plants come up only to be taken by ground squirrels in localities where these pests should first have been poisoned off, and others who had good vines later in the season found themselves short on the irrigation question.

TO SOFTEN HARD WATER.—Hard water is injurious to the complexion and therefore should never be used for washing the face until it has been made soft through the use of an oatmeal or bran bag. This bag should be made of a couple of thicknesses of cheesecloth and large enough to use in the place of a wash cloth. Orange and lemon peel are also water softeners. Instead of throwing away the peel of the above fruits put them into the toilet pitcher, and it will perfume the water as well as soften it. An occasional face bath of rose water or elder flower water is excellent, and is especially useful for greasy skins or those which show a slight growth of down, and for which creams are not admissible.

THE KENNEL.

Dog Hints.

They call me Mike. I'm a thoroughbred, from nose-tip to tail-tip, and master says I know so much about dogs and men that I ought to tell a thing or two. So I'm going to.

For instance, if you were taking care of someone's property and a bad looking man came along, you'd ask what he wanted, wouldn't you? Well, if a dog does just that same thing in the best and only way he knows how, everybody says he is savage and dangerous. Now, if a stranger who smells evil (we dogs tell good from evil by our noses not by our eyes), I growl to see if it scares him, If it does, I just let him see that I am on to him, and he'd better keep out of the yard. If he keeps right on and speaks to me and goes to the door like an honest man, I bark and wag my tail to let him know it is alright.

Some fool men think that if a dog barks loud at them that they are dangerous. They don't know enough to look to see if he is wagging his tail. No dog ever bites a person at whom he wags his tail, but if I stick my nose and tail out on a line with my back it is about time to get over the fence. When a dog does that he means business.

A neighbor's dog was telling me how a friend of his master's could understand just what dogs mean by their bark, growl or actions. "He came into my yard," said the other dog, "and into the barn I was taking care of, to get something. I jumped at him, but all he did was to say: 'What's the matter with you? Go back in your box, quick, or I'll pull all your teeth out.' Now if he had stopped or looked scared, I'd have had a piece of his leg before he could wink."

Lots of people make a mistake by patting a strange dog on the top of the head. The way to make up to a strange dog is to stoop down, stick out your hand, palm up, and pat him on the chest between the front legs, or on the throat. A dog loves that. But before you touch him at all let him smell your hand for a moment. If the dog growls when he smells your hand let him alone; if he licks it he is your friend. You see it is this way: when a man wants to cuff a dog he does it on the top of the head or on the ears, with the back of his hand up. If your palm is up and under his jaw he knows you do not mean to cuff him. While the dog may not make friends, he will not bite you. No dog will ever bite a person who is stooping over or sitting on the heels. No matter how savage he is, he won't bite.

There are lots of fool persons in this world. Just because I am a bull terrier they think I am dangerous. My master has a small boss about five years old. I guess she's what they call his daughter, but he calls her "sweetheart." When she was a baby I was a puppy. We're true friends. Well, there is nothing she likes better than when I am gnawing a bone to put one of her fat arms around my neck and take the bone away from me with the other hand. I have heard some women who live near say, when they saw it, "How dare you let that child touch that horrid bull-dog when he's eating?" Now wouldn't that make you bark? Why, when she puts her arms about my neck and kisses my ear and says: "Me loves oo Mity," I tremble all over, and feel just like I do when I smell beeksteak cooking. You human's don't know how a dog longs to make you understand what he feels and means, and when a dog finds someone like my master and my master's little boss, who understands him to the least cock of the ear, he is just simply happy. —Our Dumb Animals.

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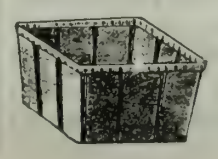
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FORESTRY.

The New State Forester.

As already stated in the Pacific Rural Press, the last Legislature provided for a new department of forestry. The Sacramento Union announces the appointment of Mr. E. T. Allen as State Forester and describes his duties and relations. He is to have a salary of $2400, and to operate in conjunction with and under direction of the State Board of Forestry, which consists of the Governor, Secretary of State and Attorney-General.

The Act creating the office was passed by the last Legislature. It provides that the appointee shall be a technically trained forester, his qualifications being determined by a certificate of the United States Department of Agriculture, which Mr. Allen holds. He is to be secretary of the Board of Forestry, and he has the appointment of two assistant foresters. The new board will have charge and supervision of Redwood Park and the Mount Hamilton and any other State parks. He is to co-operate with counties, cities and towns and individuals in promoting enforcement of the laws for forest preservation and in planting to that end.

What the Forester Must Do.—The new officer is to compile and publish the laws of forestry, and distribute abstracts of them to all fire wardens. He is to post cloth printed notices through forests containing warnings relative to fires in forests and the trespass laws, and is to post them also on highways, around lakes frequented by tourists, camping places and summer resorts and other points.

Mr. Allen will divide the State into fire districts, and any county or combination of four counties may be made a fire district. He may appoint as many voluntary fire wardens as individuals or counties may see fit to pay for, and all fire wardens and foresters are to have the powers of peace officers to arrest without warrant for violation of State or Federal forestry laws. Fire wardens have the power to call out citizens to aid them in putting out fires, only those between 16 and 50 years being subject to call, and only the able-bodied.

The Laws to Be Obeyed.—District Attorneys are to prosecute offenders to aid the Forester in his enforcement of the forestry laws. In times of stress the latter may organize and maintain a fire patrol. The forester has the right to require obedience to all forest regulations by loggers, campers and lumbermen, and to enforce observance of the "dry season" forest regulations provided by law.

Forester's Qualifications. — Mr. Allen comes fully qualified for his office by reason of technical education and six years' experience in the West under the Federal Government. In an interview with a Union reporter he said that he wished to be known not as a theorist come out from Washington as such, but as a man having practical knowledge of conditions in California, where he long resided—one familiar with the forests of all the State, with the irrigation systems and the needs of the State generally. He says that without such knowledge and experience he would have taken up the work with great reluctance.

What the Forester Will Do.—"I will have," said Mr. Allen, "the duty of advising the people concerning the forestry of the State. I expect that for some time my activity will relate most largely to the matter of prevention of forest fires. The endeavor will be to educate and persuade the people, first by disseminating information showing how profoundly their interests are involved in the forestry question. I shall strive to get the co-operation of lumber dealers, loggers, timbermen and millmen, hunters and all others, so as to enlist them cordially in the work the State is entering upon.

"Not much will be done, therefore, at first regarding promoting young growth, planting, reforestization, etc.; all that will come later."

In a sense he will co-operate with the Federal Government as to forest fires and their prevention, but only in an advisory capacity, and then only when time from his State duties will permit, for he is first a State officer. Mr. Allen has for several years been a forest inspector for the Federal Government in the West. He will in his new relation to the Federal Government have nothing to do with the public domain, but only advise regarding forest reserves, which are under the jurisdiction of the Department of Agriculture.

Wants to Be Practical. — Mr. Allen's idea is to endeavor to carry out a practical policy, one that the people will see to be to their immediate benefit, and which relates itself rather closely to the great irrigation question. He thinks that his duties will take him out of his office half, if not more, of his time, but at first, and until the preparation of working plans is completed, he will be confined to his office. He expects and asks the cordial assistance and sympathy of all the people in preserving the forests of the State, and thereby promoting all allied interests.

The New Forester.—Mr. Allen is a young man of agreeable presence, rather reserved, thoroughly in love with the calling of his life, but not an enthusiast—rather a man who takes his work seriously and who is backed by a determined disposition and just the necessary self-confidence to maintain him at the hard working point all the time. He was introduced to the State officers generally, and created among them a very favorable impression. He was highly recommended for the place by the Secretary of Agriculture and by Gifford Pinchot, head of the United States Forestry Department.

Forest Service.

From July 1 the Bureau of Forestry is to be officially known as the Forest Service. The change was made by Congress last winter, when it provided for the Government work in forestry during the coming year, and signalized an important advance in the scope of that work. The actual control and administration of the national forest reserves, formerly under the charge of the Land Office of the Department of the Interior, is now in the hands of the Forest Service, the only branch of the public service possessed of the scientific and technical knowledge necessary for the enlightened care and use of the forests. This means that the reserves are to be made to yield to the people of the country the largest benefits which intelligent management can get out of them. Use, not reservation from use, is the essential purpose for which they exist—but use under such conditions as shall make their benefits permanent.

Control of the reserves was turned over to the Bureau of Forestry last February, and the necessary reorganization is now well advanced. In taking up its new work, however, the Forest Service will not abandon any part of the old field of the Bureau. Its broad purpose will continue to be the furtherance by every possible means of the movement to introduce practical forestry everywhere. It will do its utmost to assist this movement among private owners and in the several States, not only by scientific investigations, but by advice and co-operation in the actual work of applying forestry. This is imperatively demanded if the general welfare is not to suffer profoundly in the future from a shortage of timber supply. The Forest Service will continue the studies of forest products, of methods of making timber more durable, of tree planting, and of all subjects which can promote wiser and more profitable use of our second greatest resource—for in the value of their total contribution to our needs there can be no doubt that forest products stand next to those of agriculture.

The field of the Bureau of Forestry has expanded remarkably in the past few years. The first Government recognition of forestry was in 1876, when Congress made an appropriation for a skilled man to prosecute a study of forest conditions, needs and uses, and make a report to Congress. This office was continued until the Division of Forestry was created, July 1, 1886. Then from a mere office of information the Division stepped suddenly into the field of actual operations, demonstrating by example how forestry could be made to pay, and thus furnishing the one argument needed to convert private owners from scepticism as to the practicableness of a theory to the acceptance of a proved fact. When this was accomplished a new epoch in the history of American forestry opened. Since that time no single step forward has been so important as that which the use of the new name, Forest Service, now marks. This the people of the country, and especially the people of the West, where the reserves are, will come to realize as they grasp the fact that, scientifically and efficiently administered, the reserves will soon reach their highest efficiency as contributors to the wealth and permanent development of the regions in which they lie.

Trained Foresters in Demand.

The demand for foresters is increasing rapidly both for State work and with private owners. Many States now have forest commissions, and several of them have State foresters. A trained forester at $2400 a year and two assistant foresters at $1200 each are wanted by California. Wisconsin wants an assistant forester at $1500, Indiana a forester to take charge of its State reserve, and Washington offers $1800 a year for a trained forester. In many other States the advisability of creating the office of State Forester has been under discussion this year, and it is only a matter of a few years when such an official will be considered a regular part of an efficient State government.

The demand for foresters by private timber owners is growing at a still more rapid rate. During the last twelve months seven of the Bureau of Forestry force have left to take up work with such owners and four have accepted public positions — two with Massachusetts, one with Connecticut, and the fourth with Ontario, Canada. A number of other requests from private owners cannot be met because men are not available. The year before there were less than half as many applications for trained men. But the demand for trained specialists in this line has only begun.

Large lumber companies, great wood manufacturing concerns, owners of extensive forests, railroad companies and others are taking a hitherto unknown practical interest in conservative forestry. They must have expert men to control their holdings. The result is that forestry is very rapidly taking its place as a recognized profession. A number of forest schools are training young men for this work, but the demand has outrun the supply.



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(From UNITED STATES CONSUL FRANK W. MAHIN, Nottingham, England.)

The British Board of Agriculture, through a recent order, requires the use of only such sheep dips as it shall first approve. The order contains the three following prescriptions for officially approved dips, which farmers may make for themselves:

LIME AND SULPHUR. — Mix twenty-five pounds of flowers of sulphur with twelve and one-half pounds of good quicklime. Triturate the mixture with water to a smooth cream and transfer this to a boiler of twenty gallons capacity. Make up the volume with water to twenty gallons, boil and stir during half an hour, when the liquid should have a dark red color. If yellowish, continue the boiling until the dark red color is obtained, keeping the volume at twenty gallons. When the liquid has cooled, decant off from any small quantity of insoluble residue, and make up the volume to 100 gallons with water.

CARBOLIC ACID AND SOFT SOAP.—Dissolve five pounds of good soft soap, with gentle warming, in three quarts of liquid carbolic acid (containing not less than 97% of real tar acid). Mix the liquid with sufficient water to make 100 gallons.

TOBACCO AND SULPHUR. — Steep thirty-five pounds of finely ground offal tobacco in twenty-one gallons of water for four days. Strain off the liquid and remove the last portions of extract by pressing the residual tobacco. Mix the whole extract, and to it add ten pounds of flowers of sulphur. Stir the mixture well to secure an even admixture, and make up the total bulk to 100 gallons with water.

Other dips may be used if approved by the board. The time of immersion recommended, in the use of the three dips, is not less than half a minute, but a much longer time would seem to be necessary to reach eggs and insects concealed near the roots of long fleeces or under hard scabs.

Nottingham, England, May 25.

Shropshires in California.

An apt illustration, says the Butchers and Stock Growers' Journal, that good mutton pays the grower and the butcher was brought to our attention during the past week, and goes far to confirm what was written on that subject in our last issue.

W. H. Noy of the W. H. Noy Co. of Alameda asked the writer to inspect some lambs in his refrigerator. These were found to be the handsomest, most level lot of lambs he had seen for years. Their average weight was about forty-one pounds and they cut up economically, the quantity of fine solid meat being found far greater in proportion to skin, fat and bone than is the case with the ordinary California lamb. The large refrigerator was full of them and Mr. Noy was made to confess how he had obtained a hundred of these superb mutton sheep from A. W. Maltby of Concord, Contra Costa county, and had them slaughtered by U. M. Slater. He maintained that they suited both retailer and customer, and at the rate they were selling he would soon have to draw upon his reserve fund of 150 lambs still on the ranch.

It appears that Mr. Maltby has a fine flock of thoroughbred Shropshires, and has been at heavy expense importing rams from the East. Certainly if the lambs seen in the Noy refrigerator are a fair sample of his output, his enterprise in this direction should be well rewarded. No retailer catering to a first-class trade can afford to overlook an opportunity to obtain good mutton, the consumption of which is rapidly increasing in this city and environs. This being the case, it becomes our duty—the duty of a journal published for the purpose of promoting the true interests of butchers and stock growers—to make a note of Mr. Maltby's address and see that the rest of the trade is put wise as to the quality of his lambs.

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The herd is rich in the blood of others in that test.

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Prize winning Berkshires.

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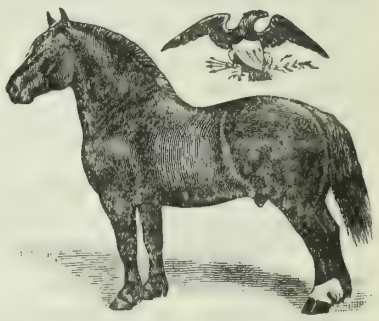
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California Sheep for Australia.

The repeal of the quarantine against American cattle and sheep, which has closed the ports of Australia to breeders and stockmen of this country, has resulted in a prompt and gratifying demand from the Australian ranchers for American stock.

C. E. Binnie of Sydney, Australia, arrived in Sacramento last week in company with J. H. Hoyt, sheep inspector of Solano county. The Sacramento Union says they visited the ranch of Henry Glide, south of that city, to arrange for the purchase of a number of registered French merino sheep, to be used for breeding purposes in Australia. Mr. Binnie stated that the owners of finer stock were aggrieved at the action of the Government, since the superior value of the French merino sheep has been recognized ever since the first exportation from the Glide ranch. This was several years ago, when J. F. Roberts, a rancher of Livermore, returned to Australia, taking with him half a dozen of the finest animals bred in this country. Mr. Binnie, it was stated, is also arranging for heavy purchases of registered cattle and will take to Australia the first steam harvester ever used on the island continent.

It is but a short time since Mr. Glide exported to South Africa sixty head of sheep, which were purchased at Capetown by the agent for General Cronje, one of the Boer war heroes, who has abandoned the sword for the sickle, and is now engaged in cattle raising on a large scale. Mr. Glide recently received a letter in the handwriting of General Cronje, expressing satisfaction with the results obtained.

Another large shipment will be made to Honolulu next week. Mr. Glide exports 500 head of sheep annually to France, England, Germany, Africa and Australia.

A New History of the United States.

A history of the United States, by William C. Doub of San Francisco and published by the McMillans of New York, is a most conscientiously prepared treatise in accordance with the thoroughly rational and commendable topical method. It enables the student or general reader to reach a clearer comprehension of the relation of things in the history of this country than any other work known to us. It is inspiring and helpful to the teacher and attractive to the pupil. It is an honor to California to produce such a book and all who are charged with the conduct of our schools should examine it carefully.

Gluten in Cereals. — Sacramento Union, July 16: L. A. Fitz, in charge of the wheat experiment work at Yuba City and Modesto stations, with the object in view of increasing the gluten contents of California wheats, was in Sacramento en route from Modesto, where he has completed harvesting, to the Yuba City station, where a few small lots of grain are still to be gathered. About two weeks will be required to complete the work at Yuba City, after which Mr. Fitz will go East to take up other work. The completion of the harvest at Yuba City will complete the first year's field work in the effort to improve the quality and yield of California wheat. He says that the past season has not been a favorable one for grain growing, and the lateness of the sowing has interfered with obtaining best results. Considerable knowledge of the conditions that obtain and something in regard to the behavior of many of the varieties has been obtained owing to the late seeding. Satisfactory results with regard to the winter wheat were not obtained, but many of the spring varieties have promised well in regard to yield, and it remains for the laboratory to determine as to their quality. Samples of the grains grown this year will be sent to the State University laboratory at Berkeley, where chemical analyses and milling and baking tests will be made. Sufficient seed for next year's planting will be reserved, with more favorable conditions this fall, to obtain more definite knowledge of many of our varieties. Some interesting facts have been obtained regarding the rust resistance and drought resistance of a number of the grains. The Durum, or macaroni, varieties promise well as to their resistant qualities, but their gluten content is doubtful.

THE DAIRY.

Dairy Products in China.

Since we always have an eye on the Orient as a possible market for California surplus products, the following account by United States Consul George E. Anderson of Amoy, China, is of interest:

Foreign residents of China who use butter sent out from Europe in tins are complaining generally that the quality of the product is decidedly deteriorating. In addition to this there is an abnormal, not to say dishonest, amount of water in the tins. One European product probably receives more condemnation than the rest. Some time ago American butter put up in this manner sold fairly well here, but some American manufacturers adopted tactics similar to those now complained of in regard to the European supply, and the result was a practical destruction of American trade in tinned butter. Some American butter is now shipped here packed in brine, and some people prefer it to all other kinds. The tinned butter trade generally, however, has been cut into greatly by shipments of fresh Australian butter of good quality and selling at the same price as the best tinned butters. This butter comes in refrigerator vessels and may fairly be termed a first-class product. It is not as good butter as the best American product, however, and I have no doubt that if American dairy interests would put up their goods in proper shape and offer a good grade of butter a large and profitable trade could be built up. Already some American butter in bulk and in pound packages is coming into the market. The complaints now made of the European product offer an opportunity for American shippers to recover lost ground. It will be a long time before fresh butter can be sold in other than the larger coast ports in this part of the world, there being no means of preserving such goods in warm weather during shipment inland. Tinned butter of the first grade sells in all ports which have come under my observation at about 85 cents Mexican per pound (about 40 cents gold).

The manner in which American condensed milk and evaporated cream dominate the market in China is ample enough demonstration that American dairy interests can meet the competition of the world in such lines. There ought to be an opening for American cheese. What cheese is shipped from the United States seems to be popular.

It is difficult to handle it in the Chinese market in the ordinary packages and the American cheese producers can probably experiment a little in the line of tinned goods with profit. Considerable European cheese, notably a Swiss product, is sold here in small tins. Any plans for such trade should contemplate small packages. It is difficult to preserve any such product in a hot, damp climate where ice costs 1½ cents gold per pound, if it is to be had at all, as is the case in ports like Amoy.

The experience of American butter makers, and of European manufacturers as well, is certainly such as to show the necessity of sending out first-class dairy goods and of giving full weight. It seems rather strange that it is necessary to urge upon the business world such common business principles and ordinary honesty, but there is abundant proof that they are needed, and this, too, without respect to nationality. Trade can not prosper here on a false foundation any more than it can in the United States.

Amoy, China, May 6.

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Our Metal Lined Plastic Composition Ring will outwear 25 rubber rings in a hand separator. It is unaffected by steam or hot water, tasteless and ordorless. Will remain in exact position and never needs to be removed. A large percentage of bowls running out of balance is caused by rubber rings not fitting and throwing cap out of position. Price 50c each. Three for $1.25. By mail post-paid. Give name of your separator.

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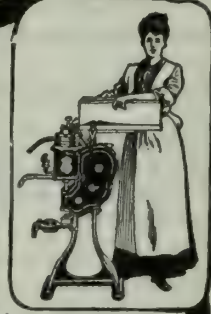
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Hours run	1,200	Hours run	2,150
Pounds separated	1,080,000	Pounds separated	1,935,000
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Oil used	8 quarts	Oil used	5¼ quarts
Time oiling	About 4 min.	Time oiling	About 7 min.
Time adjusting	None	Time adjusting	10 min.
Repairs	None	Repairs	75 cents

After 24 weeks, the balls in the frictionless bearing supporting the bowl showed wear. This was natural, for each had rolled over 32,000 miles. Renewing balls cost only 75 cents and ten minutes adjusting, yet made this Tubular as good as new. All Tubulars are equally durable. Catalogue P-131 tells about them. Write for it today.

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Tulare Grange.

TO THE EDITOR:—Tulare Grange convened in its hall on the 15th. The principal subject of consideration was the proposed abandonment of the United States experimental station for the San Joaquin valley at this place.

The subject gave rise to a general and animated discussion in which the points brought out were: That in 1888 the present station was established by Prof. Hilgard, it being admitted that, considering the vast extent of the San Joaquin valley, and of its soil and climatic conditions, a proper study of them could only be made at a station in this valley. This being the case, it was agreed between Prof. Hilgard, acting for the Regents of the University of California, that a grant of twenty acres of land, selected by Prof. Hilgard, should be made to the Regents for an experimental station, and the people of this section should erect suitable station buildings thereon. The twenty acres selected was on June 8, 1888, donated to the Regents of the University of California by J. L. Gould and B. F. Moore on the express condition "that the same shall be always held as an agricultural experiment station under and pursuant to the provisions of law therefor." On these conditions the Regents accepted and recorded the deed. The buildings were also erected at a cost of over $3000, made up by the citizens of this place, and were approved and accepted. Several of the contributors to the fund for erecting the buildings were present and made the claim, on behalf of the contributors, that they put up the buildings by reason of their contract with the Regents of the University; that they fully performed their part, and that they now have the equitable right to claim, and do claim, that the Regents have no moral or just right to default in their part of the contract, no more than they have to default in the payment of the salaries of the faculty or employes of the University.

The discussion was participated in by Bros. Barber, Wright, Styles, Tuohy, Forrer, Shoemaker, Fowler and others.

On motion, a committee of three, consisting of Bros. Fowler, Shoemaker and Styles, was appointed to draw up suitable resolutions, which, after due consideration, were approved and adopted by the Grange.

The Regents of the University are asked to give the Grange a proper hearing before approving the abandonment of the station, and Worthy Master Barber was appointed to appear before them and, on behalf of Tulare Grange, protest against the station's abandonment.

Bro. P. D. Fowler was appointed to appear before the county supervisors and solicit their favorable action towards the continuance and maintenance of the station.

It was claimed, and not denied, that the San Joaquin valley station has very materially promoted the agriculture of this valley. Its work is still needed as much as ever. J. T.

Mr. Tuohy makes a quotation from the deed but he stops too soon, for it also contemplates discontinuance and contains a reversionary clause returning the land to the grantees. All the substations established by the University were entered upon as temporary establishments to be maintained while they served a good purpose. As for other words in the quotation referring to "the provisions of the law therefor," it must be said that there is no law of the kind. The establishment was by the volition of the Director of the Experiment Station, and, as appears below, the maintenance of such permanent substation is in a sense against the law, for it contravenes the rulings of the U. S. Department at Washington based upon its interpretation of the law. We would much like to know from what source Mr. Tuohy took his quotation.

The Tulare Register of last week prints the following, which throws some light upon the general question:

The following letter was received today from Prof. Wickson in answer to one sent him by the committee appointed by the Tulare Board of Trade:

BERKELEY, CAL., July 12, 1905.

Messrs. John Tuohy, P. J. S. Montgomery, L. J. Haney, Tulare, Cal.

Gentlemen:—In reply to your esteemed favor of yesterday, I beg leave to state that I have recommended the discontinuance of the Tulare station on the grounds which may be briefly stated as follows:

First: The station, maintained as we have been obliged to do it during the last few years, is not yielding results commensurate with its cost of maintenance.

Second: The funds expended, even for such unsatisfactory maintenance, are urgently needed to enable the station to undertake other investigations which have been too long deferred.

Third: The maintenance of these permanent substations from the Hatch fund is disapproved at Washington and is likely to involve us in trouble, even to a possible withdrawal of a portion of that fund.

Fourth: The extension of special field investigations and experiments into problems at the points where they rise to pressing importance is a more direct and less expensive method of reaching valuable results.

Fifth: The desirability of permanent establishments in the various representative regions is not involved in the present question because we have no funds for undertaking this in an adequate manner. We must reduce maintenance cost to enable our investigators to answer the constantly increasing demand for immediate investigation and to move as rapidly from one problem to another as the results of such investigation will permit. — E. J. WICKSON, Acting Director.

Importance of the Manure Spreader.

The manure spreader is coming sufficiently into common use in the State of Michigan and throughout the country in general, says Prof. C. D. Smith of the Michigan Experiment Station, to demonstrate its importance to the farmer. On the college farm at the Michigan Agricultural College, one has been in use for some years, giving very satisfactory results. Here the manure is hauled out nearly as fast as made, the work being done daily except in busy seasons.

It is our theory that a barnyard is no place to sort manure, with the manure pile as a possible concomitant of a cow stable. We do not want our cows to go into the stable over a manure pile, dragging their udders through the mire. Besides the manure contains more plant food when first made than it ever does afterwards, and finally, the soil needs not alone the manure, but it needs the decay of the manure. For all these reasons we haul the manure as fast as made.

In work of this kind the manure spreader is simply invaluable since the heavy stuff is handled by the fork but once.

The manure is pitched directly from the stall on the spreader or from the stall on the wheelbarrow and dumped on to the spreader or from the stall into the manure carrier and dumper on the spreader. It is hauled directly to the field and the man has nothing further to do except to drive straight and push in and pull out a lever at the beginning and the end of the job. It is unfortunate that no records have been kept here as to the length of time taken in unloading it, but not much time is spent in this operation.

When the manure is allowed to accumulate in the yard or is piled and is then hauled to the field, another factor enters into consideration. Either two manure spreaders must be used where the haul is a short one or none. One must be loading while the team is taking the other to the field and unloading, otherwise the team must stand still while the load is being pitched on, and on most farms there is a dearth rather than a surplus of teams and hence the economy of their time must be regarded.

Unless the manure spreader will hold a full load, at least 3000 pounds to 3500 pounds, it is not adapted to the work of hauling the manure from the pile, but where it is large enough and where two of them can be used, it is good practice to have one man stay at the loading point and the other drive the spreaders to the field and spread the manure.

If no manure spreaders are used and there are on the farm hardly teams enough to do the work, it is a good plan to haul the manure to field and pull off with the manure hook in piles to be spread later, rather than to spread directly from the wagon, as this means a loss of time for the team. The trouble is that a man cannot spread it as evenly over the ground from the piles as the manure spreader nor can two men from the wagons distribute it as evenly or as quickly.

I have watched both methods pretty carefully and I know that I am safe in saying that the manure spreader gives a much more even spread than does the fork in the hand of the ordinary or superior laborer. Besides, by proper adjustment, the spreader will put on as much manure to the acre or as little as is desired. It is hard to get men to change their methods or regulate the thickness of the application.

Dr. Roberts, of the agricultural department of the Cornell University, was quite right in saying that it is better to apply eight loads of manure to the acre and apply once in four years than to put on sixteen loads per acre once in eight years. Little and often ought to be the rule where the quantity of manure is limited.

The manure spreader is just the tool to use where you want to put on a light coat. The tool can be used at any time during the summer when the soil is not too wet. It can be used in the winter if the snow is not too deep.

Prof. Jeffery of the Michigan Agricultural College reports that the cost of repairs is not excessive nor is there much danger of lost time by breakage or mal-adjustment. Some of the older machines were not carefully constructed and there was a loss when a stick or stone got in the way of the revolving teeth, but the newer kinds are simpler and more strongly made and little trouble of this kind is experienced.



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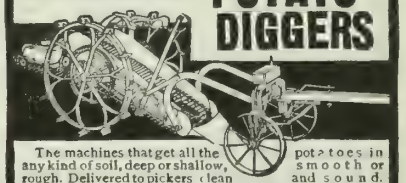
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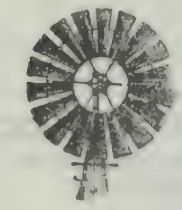
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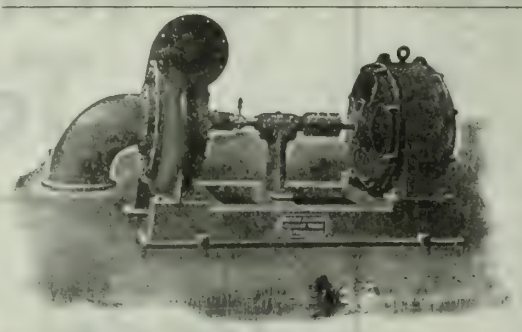
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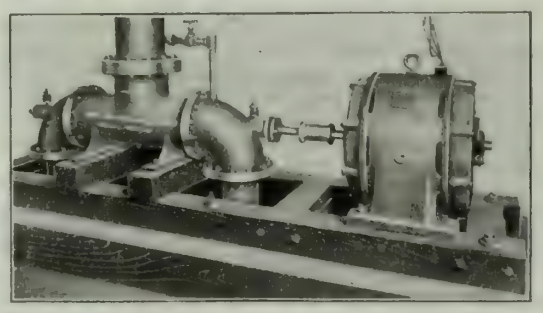
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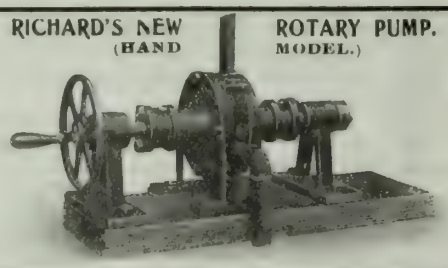
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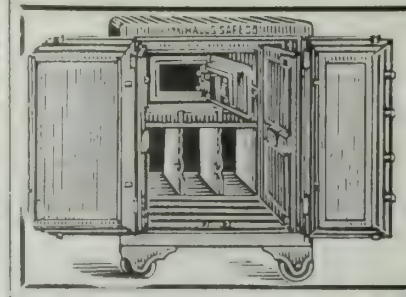
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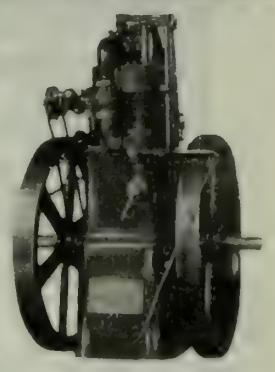
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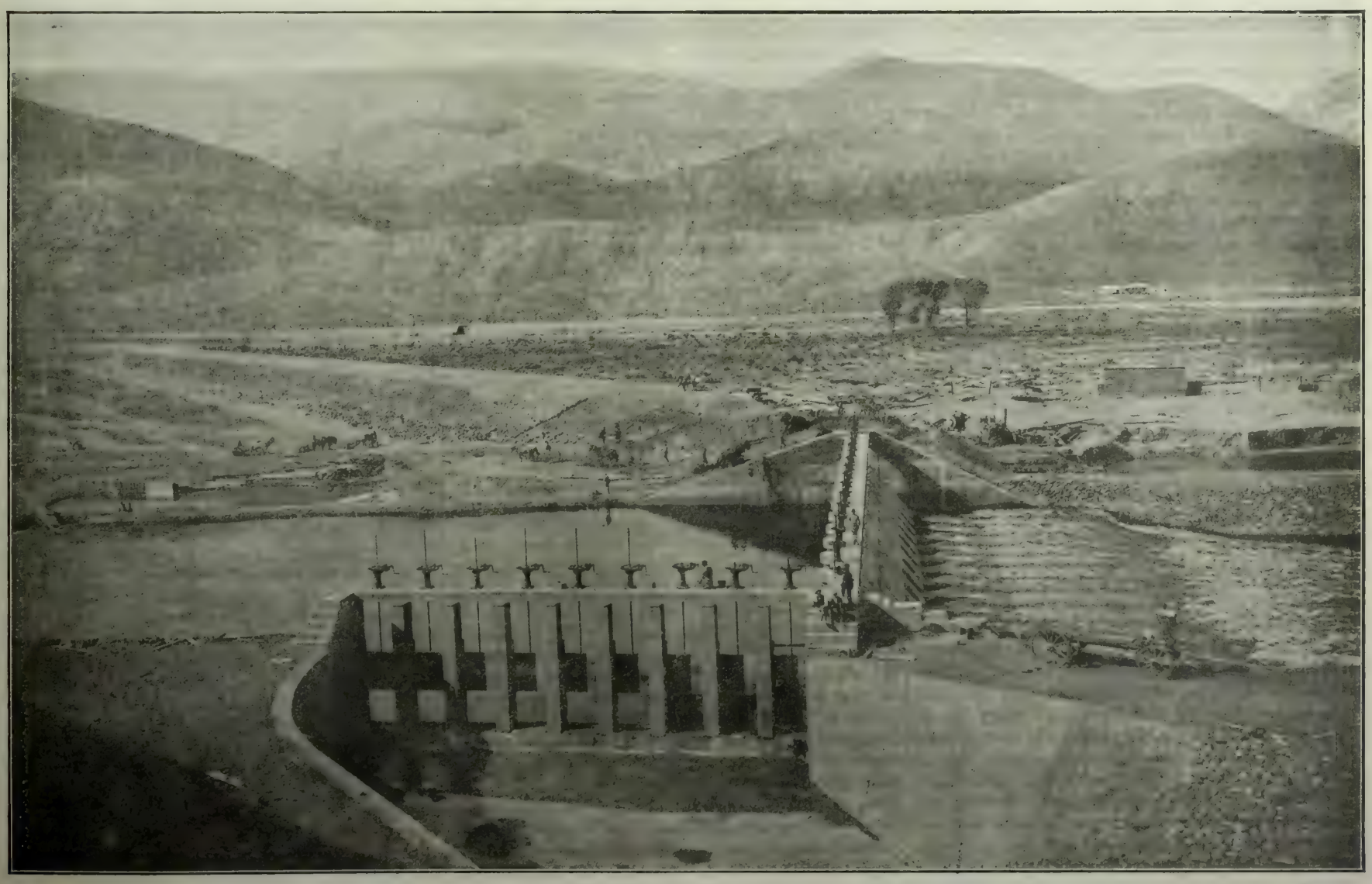
Vol. LXX No. 5. SAN FRANCISCO, SATURDAY, JULY 29, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Irrigation Development in Nevada.

We have often commented upon what we conceive to be the deep and broad significance of the national law which provides that money accruing from the sale of public lands shall be used for the construction of irrigation works to render arid public lands productive and saleable to settlers, and that this money, in its turn, shall extend irrigation to still other arid lands until the desert shall cease to exist, if water can be found in earth or air to moisten it. It is the grandest scheme this generation has conceived and will make it memorable in the history of the country. We desire that all our readers should realize this fact, so far as possible, and we shall give much space in this and the following issues of the PACIFIC RURAL PRESS to pictures and print for this purpose. It is, indeed, a grand sight to see these noble irrigation works, as true and enduring as engineering skill can make them, rising above the arid slopes and hollows of the desert. It is inspiring to imagine the verdure which will follow upon the distribution of the water and the prosperity and comfort which will result to thousands of people upon land which in its natural state is incapable of sustaining aught but desert flora and fauna. We doubt not a good measure of the realization of the bearings of such an enterprise may be gained from the accurate views and descriptions which are presented in this issue of our journal, and to this end the enterprise itself may be promoted, because its success will depend in the last instance upon the people who will accept the Government's invitation to take this irrigated land, turn it to productive account and return to the Government the cost of its reclamation in ten annual payments without interest. We have already had questions about the way this national irrigated land can be acquired, and in our next issue the details of the method will be described.



View on the Truckee River Near Derby, Nevada.



First National Irrigation District—The Dam and Gates on the Truckee River, Nevada.

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The Week.

We are on the verge of August and the harvest is well along. In most valley situations the grain harvest has been a short horse and soon curried, although barley in some sections has saved the day. We were up in the valley last week for a run of a few hundred miles and, for considerable distances here and there, had to polish our specs to see either sack piles or straw piles and at one place made a study of the tallest, thinnest, most translucent jack rabbit we have seen in thirty years of California observation. Still the people we saw at several centers were jolly enough, and the amount of fresh lumber there was set up in the form of new farm buildings was quite sufficient evidence that there has been something going on in the interior, even if the grain is, on the whole, short. The fruit and dairy districts are looking well, the area of new alfalfa is very noticeable, the local and through trains are crowded full of people and in spite of all rebates on the early outlook of the season California will have a notable year in 1905.

Eastern sensations about wheat have collapsed and reports of great outturns in the northern States of the Pacific coast have caused some little reaction from the wheat advance of last week, but the local supply is so short and the outlook so scant that local values are firm, though there is little doing. Barley, on the other hand, has been dulled by the large receipts and the fact that export buying does not reach present quotations. Yellow corn is scarce and in good demand, while white corn is abundant and neglected. Oats are in good supply and selling well. Rye is scant and higher. Bean buying has been active and some kinds are running short. Limas are, however, not in this class. Bran and middlings are strong and expected to advance, and choice rolled barley has improved. There have been heavy receipts of hay and all kinds except choice wheat are weaker. Mutton has improved a little and other meats unchanged. Butter has advanced, cheese unchanged and eggs advanced with a good demand for choice. Poultry is in large supply and slow. Potatoes are in better shape and some kinds advanced. Onions are lower, the expected export demand not materializing. New Lima beans are in; tomatoes have advanced. Oranges are unchanged and lemons a little weaker, as it has been too cold in San Francisco to look at a lemon. Dried fruit buyers are doing heavy trading in the growing regions. Apricots and peaches are being gathered up fast and prunes are in demand now at the 3-cent basis; so growers are taking a higher stand. Raisins are helped already by the new Association. Almonds are held to be a large crop and walnuts just the other way; futures are valued on this expectation. Honey is doing better. Hops are stationary and wool unchanged.

Fresh fruits are still going East in good quantity and outselling local supplies in the large markets of the Middle West. Some apprehension is expressed at the movement in New York City to rule out the pushcart street peddlers, to whom over 6000 licenses have usually been issued. This is held to indicate that the people will have to go after fruit instead of having the fruit go after them. This is a very important proposition, for it is very necessary that the fruit should be held up to the eyes of the million of small buyers all the time, and probably no arrangement of permanent fruit stands can do this as the pushcart artists do it. There should be some way in which growers' interests could support these venders in their issue against the people who would suppress them because they have places to rent. For such purposes a good, forceful national association of fruit growers and wholesale dealers should be secured and maintained.

The coming State Fair seems likely to revive the old county exhibit, which a few years ago added much to the interest of the display of State products. As the State Fair this year covers Admission Day and as the Native Sons' convocation will be in Sacramento at that time, there is possible a combination which the directors of the society are wisely doing much to promote. It is reported from Sacramento that space has already been reserved for county and sectional exhibits of resources and products to be brought to this city by over a score of Native Sons' parlors from different sections of the State. Among the counties that have already signified intention of installing a display are Placer, Shasta, Yuba, San Joaquin, Santa Clara, Alameda and San Francisco, who have already engaged space. Many other counties are awaiting action by boards of supervisors or improvement organizations, and it is believed that the entire State will be most creditably represented.

To our way of thinking, the best thing that has been said about Luther Burbank was spoken by President Woodward of the Carnegie Institution at an address in Berkeley this week. It was as follows:

Mr. Burbank of Santa Rosa is a truly wonderful man. The greatest boon he could be given now, I think, would be to be left alone. Also, do not call him wizard, which means a male witch. The use of that word in this connection is debasing. Mr. Burbank, I believe, owes his success to industry, to assiduity, to the ability to see things as they are and not to be deceived by appearances.

There you have it in a nutshell. Above all things, Mr. Burbank should be left alone by the bunch of hare-brained sycophants who are publishing exaggerated and misleading accounts of what he does and what he thinks, committing him to all sorts of misstatements, wrong inferences, vagaries and nonsense in thought and deed—in short, making a holy show of him for the delectation of the ignorant. President Woodward is right; the greatest boon which could be given to Mr. Burbank would be to be left alone long enough to get his bearings and steady himself a little.

California is apparently declining in the wool product to give newer parts of the coast a chance to advance. The United States Consul at Vancouver says that British Columbia has her hand on the opportunity. He says the rearing of sheep for their wool may soon become an important industry in the province. The farmers of the New Westminster district have for a number of years raised a greater or less number of sheep for the butcher, but little wool has been exported. A change seems impending. Recently a gentleman from Scotland visited the agricultural districts and made a large contract for wool to be shipped from Chilliwack to Montreal, and thence by steamer to Glasgow, for use in the mills there. It is stated that the Glasgow agent made contracts with several farmers, and it is expected that the trade, of which this is the beginning, will increase from year to year.

QUERIES AND REPLIES.

Lamb and Peas.

TO THE EDITOR:—I am looking into the early lamb business. Where can I get portable fences for feeding stock on parts of fields, of alfalfa? Is it cowpeas or something else which is recommended for green manuring, and can I turn under the peas as well as the vines? Which is the best State for early lamb growing: California, Oregon, Washington or New Mexico? What part of California is best for this product? Can I feed peas or pea vines to sheep? Will alfalfa alone be a good feed for lambs?—INVESTIGATOR, San Francisco.

For portable fences you should consult the agents of the woven wire stock fences, which are now becoming quite popular—not the fine chicken wire fences, but those made of strong wire for stock purposes. By using iron posts and rolling up the fence, it can be readily moved from place to place and supersedes all kinds of panel board fences.

The peas which are commended for winter growth in California are not cowpeas. Cowpeas will not stand frost. It is the common field pea which you can get from the seedsman in any quantity, which is best for your purpose. It will certainly add to the fertility of the soil to turn under both peas and vines.

We cannot judge as to the relative desirability of the various States which you mention for an "early lamb product," but our impression is strongly in favor of California, for the local market is short of this product and the population is great enough to make it desirable. In the case of the other States you mention, the product would have to be shipped to California or to the East.

We believe that the alfalfa district is the best for this line of product.

Cowpeas, both green and dried, are available for sheep feeding, but you can only grow them in California in moist places during the summer time—generally in places where alfalfa will yield better returns at the same season.

Alfalfa alone is too rich in protein for lamb feeding and should be accompanied by something which would balance the ration and this would be any kind of grain, or grain hay, or straw, or corn fodder—anything which is rich on the carbohydrate side. Peas and beans are rich in the same line that alfalfa is.

These answers are hastily drawn. Before undertaking an enterprise you should, of course, give time enough to properly inform yourself by the literature on the subject and by inquiry and observation among California sheep breeders.

No Vest Pocket Fertilization for Grain.

TO THE EDITOR:—I have been told that a fertilizer could be obtained that could be mixed with the grain and sowed at the same time. I want to know if you could give me any information in regard to it—the pounds necessary for an acre and the cost of it. The land to which I refer is in San Joaquin county and has been sown to rye for the past six years.—FARMER, Stockton.

We presume that you have read in the daily papers or popular magazines about the desirability of mixing a small amount of bacterial germs with the seed of leguminous plants in order that these bacteria might assist such plants to obtain nitrogen from the atmosphere, which would increase their growth. This fact has been so misused in the public print that many people have obtained an idea that there is some sort of material which one might carry in his vest pocket for the fertilization of all kinds of plants. The introduction of these bacteria will have no effect upon the growth of grain, because grains are not leguminous plants, and even in the presence of bacteria have no power of taking nitrogen from the atmosphere. So far as grain growing is concerned, there is no escape from the old way of applying barnyard manure, or buying commercial fertilizers in sufficient quantity to accomplish the result. When the lands of which you speak are enriched by the growth of alfalfa and other leguminous plants, and by manure which results from keeping stock, they will return to their old ability and produce large crops of grain. If it is not possible for you to proceed in this old-fashioned way, you can buy commercial fertilizers containing nitrogen, phosphoric acid and potash, making first an application to a part of the field, so that you can judge what the results will be. You can buy such fertilizers of any of the parties who are advertising fertilizers in our columns.

Crop Failures Following Kafir Corn.

TO THE EDITOR:—We planted eighty acres in barley last fall on ground that had been used for Kafir corn and failed to secure a stand. We find that many others failed and think that the corn is the cause, but we are inclined to believe that it was the wet weather together with the pasturing. This spring I tried alfalfa on forty of this and failed again. This is the first failure I have had in alfalfa. I want to put this eighty in alfalfa this fall. It will have to follow corn again. Give us the benefit of your advice. We planted fifteen acres in alfalfa at the same time as this forty on salt ground where we were only experimenting and got a good stand.—FARMER, Imperial.

Some months ago we discussed the reported difficulty in getting a stand of barley and other crops on land which had been used for Kafir corn and conjectured that possibly rubbish remaining from the Kafir corn had dried out the soil to such an extent that failure could be attributed to this cause, but from your letter it appears that the weather was very wet at the time of your failure. Under the circumstances we venture the further conjecture that during the growth of the Kafir corn there was so much evaporation from the surface that alkali was drawn up and deposited in sufficient quantity to interfere with the germination of the small seed, or to kill the germ when it appeared. If this should be the case the proper method would be to give a very full flooding to dissolve and wash down the alkali before preparation of the land for the barley or alfalfa.

When we were in Imperial last month we were interested to find that in many places which had been designated by the chemists as strong alkali there had been a very satisfactory stand of alfalfa, and this it seemed to us must be due to the fact the alkali had been dissolved and distributed through a considerable mass of the soil, leaving too little at the surface to interfere with the starting of the new plants from the seed. It is common experience that alfalfa will grow in the presence of considerable alkali, providing it is not attacked when the plant is very small. We, therefore, suggest that before you seed the land that you make an effort by flooding to overcome the surface concentration which would naturally follow the evaporation while the ground surface was carrying a crop of Egyptian corn and not cultivated.

Summer Cultivation of Corn.

TO THE EDITOR:—I have a corn field in adobe soil. It has a loose surface, but the adobe is hard and cracking below. Is it necessary to continue cultivation later in the season?—GROWER, Santa Clara valley.

Where there is a loose layer above, and hard, cracking adobe below, we doubt very much whether you can do anything more for this corn by continuing cultivation, because the adobe is too hard, probably, to be cut by the ordinary cultivator. Manifestly the previous cultivation has not been deep enough, or thorough enough, or else you would not have hard, cracking adobe under the pulverized layer, and although you could arrange for a better cultivation another year, it is perhaps too late to do anything more for the present crop, unless possibly you could deepen the loose layer with a disk cultivator. The advantage of summer cultivation is that it prevents the lower layer of the soil from drying out, and to do this a proper depth must be secured early in the season.

Looking for a Homestead.

TO THE EDITOR:—As a friend and I propose going up country to look for a homestead to grow fruit, we would feel obliged if you would give us any printed matter on same. Can you tell us the best way to locate a homestead in California or Nevada? We wish, if possible, to get one which would grow walnuts and almonds.—NEW COMER, Oakland.

We cannot be quite sure from your letter whether you mean to seek a homestead in the broadest sense—that is, a place for a home—or whether you mean to homestead a piece of Government land in the restricted sense of the word. If the intention is to take up Government land you have first to actually find the land which is suitable for your purpose, and then apply to the nearest United States Land Office to see whether it is open to entry and, if so, comply with conditions which the Land Office will describe. This is the only way to get Government land, unless you deal with agents who have such locations previously made. There is exceedingly little Government land, suitable for fruit, open to entry in California, and it is for the most part in remote places, mountains, deserts, etc. In Nevada it is possible now to locate land under the new Reclamation Service, whose work is described elsewhere in this issue, and information concerning this can be furnished by addressing the Chief Engineer, L. H. Taylor, Reno, Nevada. You have to be very careful, indeed, in locating land for walnuts and almonds, because these trees are rather exacting in their requirements.

Bermuda and Johnson.

TO THE EDITOR:—Are Bermuda and Johnson grasses proven of value as pasture grass and which is supposed to be better? Where nothing better will grow, which will stand drought the better? I have always heard of their bad qualities, but as I have in mind an experiment on some land in the Mojave desert, which will grow nothing else excepting wire grass and salt grass, would Bermuda or Johnson grass be better feed than the salt grass? Will these grasses grow on adobe land that has so much alkali that alfalfa and even barley will not grow? My experimental ground is covered with white crust of alkali or soda and is heavy cement-colored adobe, with water from 3 to 5 feet from the surface. Nothing but salt grass grows on it now, so there could be no harm to plant even such pests as above mentioned if they will succeed and have any feed value.—EXPERIMENTER, Ventura county.

Bermuda grass endures much drouth and will grow upon pretty strong alkali, and is favorably regarded as a pasturage grass on alkali lands by the stock growers of the San Joaquin valley. It is supposed to be better than the salt grass which grows in that valley on alkali, although the salt grass which they have is pretty good pasturage plant. Johnson grass will not endure severe drouth, nor will it grow in alkali. It is always on the lookout to get into good, moist land and, because it is almost impossible to eradicate it from such places, it has fallen into disrepute and is widely condemned. There are, however, some places in this State where Johnson grass is held to be of some account. Both Bermuda and Johnson will be inactive during the frosty season in places on the desert where the temperature falls to 20° or lower.

Shy-Bearing Cherries.

TO THE EDITOR:—We have an orchard of about five acres of Tartarian cherry trees on a sandy loam with clay subsoil. They have not borne fruit for two years, and we have surmised that it may be due to a deficiency of some element in the soil. Is it desirable to undertake an analysis of the soil? We are very desirous of restoring the fertility of our orchard and should greatly appreciate any suggestions you may be kind enough to offer.—GROWER, Santa Rosa.

It is not necessary to analyze the soil to determine why your cherry trees do not bear. If the trees are growing satisfactorily and have good, new shoots and strong leafage, it is evident that the soil is doing its part, and the failure to bear is probably due to some undesirable atmospheric condition prevailing at the blooming time. The cherry crop, for example, this year was greatly reduced by the unfavorable weather at blooming, and our own Tartarian cherries have failed for two years just as yours have. If your trees are growing strongly and well, it is an evidence that you do not need fertilization at present. There are cases in which, in case of excessive growth, the application of potash is held to be effective in promoting fruit bearing. You can easily demonstrate this in your own case by making a free application of wood ashes to a few trees and noting any effect which may be produced thereby.

Heat-Struck Prune Trees.

TO THE EDITOR:—My prune orchard had good care and more water than usual this year, looked well and had a good crop on the trees. The hot weather wilted the leaves and turned a great many yellow or brown last week, more so than surrounding orchards in a less good condition. I now would like to ask if you think it possible that the crude oil contained in the whitewash, under the influence of excessive heat, could have done the damage, though it had been on the trees near two months.—A. M., San Jose.

We should think not. If you find the tissue under the outer bark of good color you need not apprehend injury by the oil. Just why the heat struck your trees hardest, or why it has injured some branches in trees we have lately seen, more than others on the same tree, we cannot tell. Theoretically it should be attributed to the particular condition of the leaf at the time, but what was that condition? Do not some readers desire to reason about it? It would be entertaining.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 24, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather prevailed during the week and conditions were favorable for crops. In the southern part of the valley the temperature continued slightly below the normal, but high temperature prevailed nearly all the week in the northern section. Several hundred acres of grain were destroyed by fire in Glenn county. Harvesting, thrashing and hay baling are progressing rapidly, and there is no change since the last report as to yield and quality. Hops made good growth and in some places there is a prospect for a large crop. Beans and corn are looking well and will yield fair crops. Fruit picking, canning and drying are in progress. Early peaches are nearly all gathered; the crop is light and of poor quality. Pears are ripening rapidly and Bartletts and Early Crawfords are in market. Plums are yielding a good crop in some sections, but were damaged by heat. Grapes are ripening and give promise of a large yield. Oranges, lemons and olives are in good condition.

Coast and Bay Sections.

Clear, warm weather prevailed during the week in the interior, and cool, cloudy and foggy weather along the coast. Conditions were generally favorable for the growth of crops and fruit drying. Wheat harvest is completed in some sections and progressing rapidly in others; the yield is better than expected, but below average. Barley is yielding a good crop and oats are light. The hay crop is very large and of excellent quality; baling is progressing. Hops are in fair condition, but the outlook is that the yield will fall below average in some places. Beans, corn and vegetables are doing well. Grapes were somewhat damaged by recent hot weather, but there will probably be a large crop in most places. Bartlett pears are ripening; they are of good quality and the yield will be about average. The peach crop is light. Prunes will be light in some sections and nearly average in others. Almonds and walnuts were slightly injured by heat. Oranges at Cloverdale are in good condition.

San Joaquin Valley.

The weather during the past week was clear and warm. These conditions were very favorable for harvesting grain and maturing and drying fruit. The grain harvest is about completed; the yield was light and the quality below the average. Several thousand acres of grain and feed were destroyed by fire in Calaveras county. Peaches are ripening rapidly and being shipped in large quantities to the canneries and driers. The prune crop will be light. Heavy shipments of watermelons continue. The grape crop will be good; table grapes are ripening and small shipments are being made. Raisin grapes are making good progress. Almonds will yield a good crop. Citrus fruits are in good condition. Feed is plentiful and live stock are healthy and in good condition.

Southern California.

Clear days and cloudy or foggy nights prevailed in the coast districts and generally clear, warm weather in the interior. The temperature continues somewhat below normal and the cool weather is unfavorable for growing crops except beans and sugar beets. Beans are in bloom at Santa Maria and the outlook is good for a heavy crop. Sugar beets are yielding unusually well and factories are running night and day. Barley is a full average crop. Oats are light and of poor quality. Wheat is above average and the hay crop is the best for several years. Small fruits and melons are backward, owing to cool weather. Apricot drying is progressing. Grapes are in good condition and give promise of an average crop. Orange trees are making satisfactory growth. Walnuts have been somewhat injured by blight.

EUREKA SUMMARY.—Farmers are in the midst of haying; crop never better. Oats are ripening and some fields are almost ready for harvest. Potatoes are poor; other vegetables are doing well. Apples will be about an average crop. Grass in the interior is drying rapidly.

LOS ANGELES SUMMARY.—Corn and beans are looking better than last year, but the weather is unfavorable for drying fruit. Oranges are dropping some. Bee men are busy slinging the second honey crop; the yield is heavy and of fine quality.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, July 26, 1905, are from official sources and ar furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.01	.01	75	.12	60	50
Red Bluff	.00	.00	.11	.02	104	64
Sacramento	.00	.00	T	T	88	52
San Francisco	.00	.00	.02	.02	60	50
Fresno	.00	.00	00	T	104	64
Independence	.00	.00	T	.04	100	54
San Luis Obispo	.00	.00	T	T	78	50
Los Angeles	.00	.00	.00	.02	82	58
San Diego	.00	.16	.00	.04	70	60
Yuma	.00	.00	.05	.14	108	66

HORTICULTURE.

California Coachella Cantaloupes.

We have kept pace with the progress of the cantaloupe industry of the Colorado desert districts, which are no longer desert by the way, by frequent statement of the facts in the Pacific Rural Press. During the present year, however, the business has made unusual progress and some account of it, as prepared for the Riverside Press, is of wide interest:

The Coachella Valley Crop.—The Coachella valley crop is 300 to 350 carloads, of which 200 to 300 carloads will come from Coachella, 80 or 90 carloads from Thermal, the rest from Indio and Mecca. The crop is worth anywhere from $300 000 to $350,000. And besides this, there will be $12,000 or $15,000 worth of watermelons.

The first carload was shipped on June 14, and since that latter date things have been rushing at a great pace, the shipments reaching the maximum on the 26th, when fourteen cars were loaded, iced and sent on their Eastern journey.

The biggest improvement which has been made at Coachella since last year is the $50,000 ice factory and refrigerating plant, which has come into complete operation. The refrigerating plant is a large and substantially built building, admirably planned and arranged. The ice plant at one end, where the ice is frozen in 300-pound blocks, is connected by elevator with the four big storage rooms on the second floor, from which the ice is shot out onto a platform and then down into the cars just beneath.

There are four refrigerating rooms on the first floor, into which the cantaloupes are placed in stock and thoroughly chilled before they are loaded into the cars. The cold air is sent down into the chutes from the pipes above the second floor, and a system of ducts has been devised, so that the cars can be cooled in the same way before they are loaded. This cold storage was only commenced Saturday night, but the melons stored were thoroughly chilled by Sunday morning, proving the system good under a thorough test. There is storage capacity for about thirty carloads of melons. Once chilled, the melons are not allowed to come in contact with the warm air, a connecting telescoping system of passage ways being devised which close clear out to the car and tight around the door.

With the melons cooled in this way it will be possible the remainder of the season to ship by slow freight, and cut out the expedited service, which will reduce the cost of shipping from $2 to 90 cents to Chicago. The Southern Pacific gives a good freight service for the associations of the valley, making practically a seven-day run to Chicago. Chicago is made the general distributing point, and the market there for the melons is better than in any other city in the East.

The Growers.—The Japs at Coachella are proving to be the most efficient cantaloupe growers in the valley and will make more money off of their crop, probably, than any other growers. They are working in companies, the largest of which is the Coachella Nason (Development) Co., of which G. T. Misaka is the head. They have ninety-five acres into cantaloupes and estimate the crop at 15,000 crates. The other companies are known as Hamamoto's and Yamagata's, and these each have about thirty acres. There are 800 acres under the Coachella Valley Producers' Association, divided mostly into small holdings of five, ten and fifteen acres. As a rule the smaller acreage owners are the most proficient, and get the best results proportionately, as it has been found that the needed attention cannot be given to large tracts.

R. D. Smith is one of the most successful watermelon growers, and is selling his crop f. o. b. in the Los Angeles market at $15 a ton. His patch is going to average him from $100 to $125 an acre. Another crop Mr. Smith had particular success with was a half dozen rows of tomatoes across forty rods. For these he found a ready market and the tomato crop netted him $150. That crop has long since been harvested and the vines are dying out.

Misaka's company, with ninety-five acres under cultivation, is one of the most cleverly managed cantaloupe ranches in the entire valley. During the recent rush Misaka had 125 Japs working in the field, in the packing sheds and on the wagons. They have now cut down this number to about seventy-five or eighty, but may need them again if the rush comes on again, as is looked for. A large portion of the big ranch is supplied with water by one large compressed air steam pump, which operates seven wells and pumps about 125 inches from them. They have another pump, a centrifugal, pumping about 40 inches onto another part of the ranch. But the Japs are willing, conscientious workers, anxious and quick to learn, and entirely willing to be advised and to use advice to some advantage.

The Thermal Association.—The Thermal Cantaloupe Growers' Union this season shipped the first special crate of sixteen melons, picked by J. S. Glenn, on May 21. The first carload shipment was made on June 15; and it is figured that the first three carloads in New York City sold for over $6000.

Thermal up to the first of July had shipped forty-four cars, and has been shipping since and for the week before at the rate of three, four and five cars a day. The bulk of the melons this season have been sent by "expedited" service, ninety hours to Chicago, although the first car sent by slow freight arrived in New York in excellent condition. It was shipped on Monday, June 19, arrived in Chicago at 1 A. M. on the following Monday, and in New York Thursday morning, the 29th, ten days en route. Next year, when the refrigerating facilities are further developed, the Thermal Union expects to send at least three-fourths of the crop through by slow freight.

The Cooling.—The cooling process used at the Thermal plant is one of the simplest imaginable, yet from reports of the condition of the melons arriving in New York it is thoroughly effective. By means of a simply operated suction force the warm air arising from the cantaloupes as they are stacked into the car hot from the field is pumped out, and a cold current drawn in through an iced vent. In this way the temperature of the car and its contents can be reduced from 90° and 100° to 40° to 50°. At this lower temperature, with the cars solidly iced, the melons carry easily and in fine shape to the Eastern market.

This process is the invention of L. M. Lyon, who expects to perfect and elaborate the method and erect at one of the three California points next season a large plant in which he can cool off six carloads at once. By this process Mr. Lyon says he absolutely takes all the heat out of the cantaloupes, leaving the melons cold, firm and full-sized.

Some of the larger cantaloupe growers at Thermal are J. S. Glenn, with twenty acres; Gordon Bros., twelve acrces; F. M. Young, thirty acres; J. H. Magill, twenty acres, and W. H. Harris, seventeen acres. Besides these there are about sixty growers with from three to ten acres apiece.

Imperial Valley.—Cantaloupe growing at several points is being extended and arrangements made for the best handling of the crop.

Codlin Moth Destroyer Has a Heavy Name.

The Acting Chief of the Bureau of Entomology, Marlatt of the United States Department of Agriculture, referring to this parasite, writes to John Isaac, Secretary of the California Commission of Horticulture, and says that Mr. Ashmead, the specialist in such matters, has reported to him relative to the Ichneumon fly, which California imported for work against the codlin moth. The species sent by you agrees fairly well with Ephialtes Messer: Gravenhorst, described nearly a hundred years ago, and he identifies it as this species, the small points of difference which he notes not being of any special importance.

The species does not belong, however, to the genus Ephialtes, but to Mr. Ashmead's genus, Calliephialtes, separated from the former. (See classification of the Ichneumon flies, Proc., U. S. National Museum, Volume XXIII.) He states that all of the parasites of the genus Ephialtes are parasitic on beetle larvæ, and do not attack the larvæ Lepidoptera.

The species therefore is, according to the best information obtainable, Calliephialtes Messer: Gravenhorst.

Pacific Coast Nurserymen's Association.

The third annual meeting of the Pacific Coast Association of Nurserymen recently held at Portland was well attended and very interesting. The following officers were elected for the ensuing year: President, A. Eckert, Detroit, Wash.; vice-presidents—F. W. Settlemier, Woodburn, Or.; A. W. McDonald, Toppenish, Wash.; A. Hartley, Caldwell, Idaho; C. W. Howard, Riverside, Cal.; P. A. Dix, Salt Lake City, Utah; Richard Laritz, Victoria, B. C.; secretary-treasurer, C. A. Tonneson, Tacoma, Wash.; executive committee—J. A. Stewart, Christopher, Wash.; C. Malmo, Seattle, Wash., and A. C. McDonald, Toppenish, Wash. Next place of meeting Tacoma, second Wednesday in July, 1906.

THE GARDEN.

Tomato Growing in Washington.

For parts of the coast which have a short growing season, owing to extreme elevation or otherwise, the description by E. G. Grindrod of Washington of how he has grown tomatoes in Kittitas valley will be interesting, where the climatic conditions for successfully growing and ripening tomatoes are not the most favorable in the world. He says:

Our nights are too cool, the seasons too short, and danger of late frosts in the spring makes it very risky to set tomato plants out in the open before the first of June. And they can be set as late as the first of July, in most seasons, and ripen a crop, provided the plants are properly grown and handled.

Growing Plants.—I have never found it advisable to use what are commonly called seedling plants. The plants should be transplanted several times under glass, with plenty of room, so that they will not be drawn up tall and spindling, but be strong, stocky and well branched, and at least 1 foot tall, with an abundance of bloom at the time of transplanting out of doors. Some of our plants this season had young tomatoes set on them when we put them out.

The plant bed should be thoroughly wet some hours before taking up the plants, so that it will not be muddy, but just wet enough for the most dirt possible to adhere to the roots of the plants when taking them up. We usually do our plant setting in the afternoon or evening, although it can be done any time, but the plants will start to grow more quickly, and will feel the shock less, if done in the evening and when the wind is not blowing. Wind is worse for newly set plants than heat and sunshine, so, although we have made our plans to set plants at a certain time, and everything is all ready, if the wind should begin blowing much, we usually defer the operation for a more suitable season.

Culture.—Tomatoes will grow in almost any good soil, but will amply repay for the trouble and expense of having enriched the soil and put it in a thorough state of cultivation. I have not used any commercial fertilizers, but have always depended entirely on stable manure.

We usually plow our tomato ground in the early spring and, if possible, the fall before also, working it over several times with the harrow and cultivator before time for planting the tomatoes. It is then in a fine state of tilth, with plenty of plant food available for the young plants to go right to work on. When ready to begin setting plants we plow furrows with the shovel plow 4 feet apart and run water the full length of each furrow. One man does this while the others are taking up the plants and getting them to the field.

The plants are now carefully lifted from the bed with the aid of a trowel or shovel, with as much soil as possible adhering to the roots (some of them as we take them up will weigh as much as two or three pounds each) and placed in boxes. We use apple boxes, because we have them and they are handy, but any boxes not too large for one man to handle when filled with plants will do just as well. The boxes of plants are put in a spring wagon and driven to the field with as little jolting as possible.

The plants are now carefully lifted from the boxes with all of the wet soil adhering to the roots and placed directly in the wet furrow, from which the water has just been shut off, and held in an upright position by one man, while another one fills in the soil with shovel or hoe. If the furrow should not be deep enough at any place, it is deepened with the shovel.

This is all there is to planting—simple, yet sufficient. Of course, the furrows must be filled in between the plants, but this can generally be done quickest and cheapest with the horse cultivator.

We generally set our tomato plants 4 feet apart in the row, and it is better to put them farther apart rather than closer.

I have found all pruning after the plants are set in the field to be useless and unprofitable. Just let the plants go their own sweet way and cover the ground all over. Cultivate at least once a week and after each irrigation and rain. Irrigate as often as needed. No specific rules can be given for this. One must use common sense. The water should not be kept on too long at a time, but should be taken off before the soil reaches a state of thorough saturation.

Too much or too little water seems to have a tendency to promote blight, that terrible scourge of the tomato grower in the Northwest.

THE POULTRY YARD.

More Against Frozen Fowls.

Local producers of market fowls will be interested in the action of the State Board of Health against undrawn frozen Eastern stock, to which we have previously alluded. It seems that a Sacramento market man declared that Dr. Foster, of the State Board of Health, was wrong and that, as reported in the Sacramento Union, there is not only no danger in the use of frozen imported undrawn fowls, but that they are preferable in many respects, and that the crop wherein (if there is any danger) it resides, is removed.

Dr. Foster replied, when a statement of the market man's views had been communicated to him, that if such a position is taken, it is erroneous and flies in the face of agreed sanitarians and the medical faculty.

These, said Dr. Fowler, have no interest to promote in condemning undrawn fowl food, except the public good. Yet at the recent National Convention of Boards of Health, held in Washington City, with but one dissenting voice frozen undrawn poultry was condemned as unfit food because of the known danger resident in it. That is not to say that every undrawn fowl and every frozen fowl is disease infected or dangerous, but it is to say that every one may be.

Regarding the statements of Marketman Murphy

that the crop is removed, Dr. Foster said "that is incorrect of my personal knowledge. I have purchased fowls with the crop full of whole and partly digested food in place."

Dr. Foster said, in addition, that any brief thinking ought to convince anyone that the faculty is right in this matter. It may be that no particular harm would ensue from use of fowl kept frozen from the start to the time it is cooked. But it is a fact that such food is taken from the refrigerators and placed in windows and on hooks in markets. The moment this is done thawing sets in, and with the very least of thawing decomposition begins.

Moreover, said the doctor, when these Western refrigerated fowls are shipped, in crossing the dry, heated plains, the ice sometimes gives out, and a higher temperature obtains before it can be renewed, and at that moment decay begins.

The physician added that every one knows what chickens eat—they will eat almost anything. Now, when the excretia of killed fowls remains in the viscera, it is simple reason that it will contaminate the flesh. It is not in the slightest degree exaggeration to say that typhoid germs are communicable in the viscera of undrawn fowls. Freezing the fowl does not kill the typhoid germ—it simply suspends its viciousness—and just as soon as thawing sets in, as it must before used for food, the typhoid germ is restored to activity. It is therefore a great mistake to suppose that freezing destroys disease germs. That it does not has been demonstrated, so that market men cannot be reasonable and defy demonstration.

There is also, said Dr. Foster in response to a question, liability of infection of the flesh of fowls transported long distances, from the handling to which they must be subjected in being prepared and forwarded.

Dr. Foster can conceive of no reason for retention of the viscera of fowls killed and frozen for food, except it is to make gain by selling it at weight. Some people like the gizzard and the liver, but, if need be, these can be removed and still kept with the fowl. Those engaged in the business of shipping undrawn frozen fowl object to removing the viscera, because the process exposes the flesh of the interior to germs. But, if so, the opening to remove the craw is equally objectionable

In short, says Dr. Foster, physicians know precisely what it means when they condemn the undrawn frozen imported fowl, and which no one knows how long it has been in cold storage. They understand this matter, and will not be disturbed in their position. The State Board of Health in condemning such food simply followed in the line of scientific demonstration.

THE STABLE.

Breeding and Care of Colts.

A writer for the Rural New Yorker gives some things learned in twenty-five years in the breeding and care of colts:

THE BROOD MARE.—First of all, every prospective horse breeder should have a definite idea of what he wants to raise, whether draft, carriage or trotting stock. I should say it would be better for the farmer of small means to leave the latter for the wealthy or gentleman farmer to lose money on. Everything else being equal, I would prefer brood mares of good size, but beauty, style, ambition and nerve should come first. Often a regular "cranky" one makes a first-class brood mare, and I have raised many colts ranging in height from 15½ to 16 hands from 15-hand mares. These mares were old-fashioned Morgans of a type seen every day at all kinds of work 50 years ago, but now as scarce as "hens' teeth." I would not use a genuinely broken-down animal for brood purposes, no matter how well bred she might be; neither would I condemn one for lameness caused by accident. A spavined or ringboned one I never owned. It goes without saying that both sire and dam should come as close as possible to the type you have in mind to raise. Although my large colts from small mares had, of course, large sires, I prefer extra size in the dam if either must be larger, but quality and finish in the sire always. Several years ago I bought an imported Hackney mare about 15½ hands, 1100 pounds, with a big slashing gait and ability and will to road 10 miles an hour easily. She has brought me three colts and two fillies, all sired by a Morgan horse much smaller than she, and each having a great deal of the beauty and finish of the sire, with size and action of their dam, suitable for carriage, gig or saddle. For several years I bred to an imported French coach horse, hoping to raise matched pairs. I was disappointed in this, but had one in the lot which brought a fancy price at the New York Horse Exchange.

CARE OF THE MARE.—If the mare is turned to pasture before foaling she is always taken to the barn at a little past the tenth month, where she can be looked after. I have had strong, healthy foals born at ten and a quarter months. I never give the mare heavy work, and keep her out of snowdrifts and off slippery places. She has a roomy box stall, well bedded, and in winter the liberty of a large field except on stormy days; all the good hay she will eat and occasionally apples, potatoes or carrots, and always kind words. Her confidence is worth having. During the last month or two she gets a good feed of bran and perhaps a few oats. If she is groomed every day so much the better.

HANDLING THE COLT.—The foal is handled every day, has the halter on as early as the third day, and often before he is 24 hours old; is taught to have his feet lifted and to be groomed with a good brush, never neglecting the tail. I have known three or four-year-old colts positively to refuse to allow the tail to be combed, but I did not raise them. These lessons are easily learned now, and never forgotten, and saved lots of trouble later. At two weeks he should be perfectly halter-broken and understand the meaning of "whoa" and "back;" also accustomed to have ropes or straps wound about his body and legs, and in place of the crupper; this may save a kicking scrape later on. He is made thoroughly to understand that man's strength—and woman's, too, for that matter—is superior to his, but the children are not to attempt to coerce him, for fear that he should escape from them and lay the foundation of a bad habit in future. In teaching to lead we do not find it the best way to attempt to drag him along by the head, but walk by his side and coax or even push him along, turning to either side until he learns to follow the halter. If he wishes to try his strength at the line once or twice hold firmly until he is satisfied that it will not give way. Sometimes a little touch of whip at his heels works well, but never for a minute lose your temper; always pet and praise him. Remember the best horse is always companionable and friendly, with perfect confidence in his master. In his early days, when any leading is to be done, the halter goes on the baby and the mother follows. After the foal is two or three days old he is allowed plenty of exercise in a large yard or nearby field, but never allowed to lie down on cold or damp ground after becoming heated. Like all young things, he must be kept warm, or trouble will follow. Even after turning to pasture he is not left out through a cold rain—it is neither human nor safe.

WEANING TIME.—If the mare keeps in good condition, which she should do on good pasture, she runs with her colt until stabling time in the fall; it saves trouble, and the colt makes better growth. Even if she is worked it pays to feed her an extra grain ration, and not wean the colt until six months old. When at any time the mare and colt are separated each is put in a box stall which has no nails, splinters or sharp corners to injure them. Colts will sometimes attempt to crawl through impossible holes, or over partitions which are not built to the top. For the first few days of weaning time the colt is allowed with the mare for a short time at morning and night; then once each day, gradually making the visits less frequent until he is kept away entirely. The best of hay—preferably clover rowen to begin with—is kept before him all the time, also a pail of bran and oats mixed, equal parts by measure, with a little salt; plenty of water at least twice a day. You can't winter the colt on the north side of the straw stack and expect him to "do you proud" in the spring. He gets apples and potatoes often, and sometimes a nubbin of corn, and is never expected to clean up his hay. What he leaves is given to the older horses.

THE COLT'S EDUCATION.—He is taught to stand tied while his hair is straightened every day; we find an ordinary cattle card the best for this purpose when the hair is long and thick. His feet are cleaned often, and kept level, with toes short. This requires very little time, and helps him to grow up right. Of course he has exercise with the others in the field, although he is not let out when there is ice covered with a little snow. Sometimes, when he is taken out to be groomed, a bridle is slipped on over the halter, and he soon becomes accustomed to the bit. He is easily taught to drive this first winter, and often his first lessons are taken with a pair of lines snapped into the halter ring and passed back through loops well down on the sides of a surcingle. After he has learned, on the barn floor, to go before, to turn to right or left and to stop at the word, he is taken into the yard, to the carriage house among wheels and all sorts, put between the shafts and made acquainted with nearly everything but drawing the carriage. Being handled by one in whom he has perfect confidence, he will show little if any fear. When spring comes again we find it a good plan to keep the yearlings in the barn for a few days after the older ones go to pasture. The excitement and too strenuous exercise of the first few days before settling down to business is apt to set them back in growth. They are salted once a week, and looked over to see that there are no cuts or sprains, which they are liable to get in pasture, and which may need attention. Contrary to the ideas of many, this method of teaching does not turn out dead-heads, but honest, willing, reliable animals, trained, not broken.

LOOSE earth when piled in an embankment invariably shrinks, the shrinkage being from 3% to 15% dependent upon the character of the material in the embankment. The liability to shrinkage is reduced somewhat if the embankment be built in thin layers, placed one above the other. Rock dumps shrink in the same manner, but in a somewhat less degree.

THE FIELD.

Barnyard Manure and Green Manure.

From a Bulletin on "How Can We Maintain the Fertility of Our Soils?" by PROF. W. P. HEADDEN, of the Colorado Experiment Station.

Our climate does not seem to be especially favorable to the formation of that form of organic matter known as humus, which favors the retention of nitrogen until it can be converted into a form fitted for its taking up and assimilation by the plant. The moderate supply of plant food, our climatic conditions which favor the complete destruction, the burning up of the organic matter in the soil rather than its humifaction, and every other condition which tends to lessen the fertility of our soils, admonishes us to vigilance in the preservation and enhancement by every means within our power of the intrinsic value of our lands, which is their power to produce.

This view is supported by the experience of ranchmen or farmers throughout Colorado, and while it is in perfect agreement with the theoretical views held regarding the fertility of the soil and its durability, it is simply a plain matter of fact, not fully appreciated as yet, but one which is coming to be more and more generally acknowledged, even by the most careless and indifferent.

The necessity of carefully considering this question can not be too strongly urged upon all classes of our agricultural population. This will undoubtedly seem a self-evident fact, even a trite one, to many persons, but a very little observation of the practices of our farmers will convince any one that it can not be repeated too often.

CAN WE PROFITABLY REPLACE THE PLANT FOOD REMOVED?—There is a very important question confronting us, i. e., can we, by any available means, restore the plant food removed by our crops? In the past, even up to within a very few years, not more than three or four years ago, but little or no use was made of the manure accumulating about our towns and the corrals where hundreds of animals had been fed. Within the past year it has been possible for us to find piles of manure five, ten and even twenty years old, which have lain there just as they were piled when the corrals were cleaned out.

At the present time this is one of the most important and, at the same time, available means for the maintenance of the productiveness of our fields, i. e., the careful husbanding of all the products of the farm which can economically be converted into a fertilizer—say, into barnyard manure.

Our former practice was, in cases where the alfalfa was fed upon the ranch where it was grown, to neglect the refuse or perhaps haul it out to dump it in some boggy place; if it were sold off of the farm no further account was taken of it—another crop would grow. So little appreciation of this subject, which is of the very greatest importance to the agriculture of this section, has heretofore been evinced that it has been possible within the three years last past to obtain at the corral a four-horse wagon load of well-rotted manure for a consideration of 25 cents. This time is past—it lasted altogether too long.

WHY SAVE THE BARNYARD MANURE?—I intentionally chose alfalfa as an illustration to show that it cost a great deal to raise a crop, which I endeavored to make evident by converting the elements of fertility into their respective money values, which for a four-ton crop of alfalfa per acre amounts to $30.28, assuming that only one-half of the nitrogen present in this amount of alfalfa hay was obtained from the soil. I realize that it is difficult for the average ranchman to appreciate this fact, for it represents money value which he has never had represented in his bank account, nor has he ever seen the materials in mass, nor can he miss them from the place whence they have been taken. They are, nevertheless, no longer there, but have been embodied in the hay and removed with it. There is less plant food by this much in the soil than there was before.

It costs less, not in the labor of plowing and preparing the seed bed, or of irrigating and harvesting, but in soil fertility, to grow a ton of wheat, or oats, or rye straw; still, it can not be grown except at a cost, and, after it has grown and produced its crop of grain, it still has a value which is of too much importance to be permitted to, in any degree, go to waste. Thousands of tons of this material are left in the fields where stock has access to eat what it may; but very large quantities of it are removed before the next plowing by the ready means of the match, whereby the nitrogen and the organic matter, both beneficial to our soils, are dissipated in the atmosphere, while the ash constituents would have been far more valuable if applied jointly with the other constituents of the straw. The glow of the burning straw pile is, even in this year of 1905, not an unusual sight. This, too, has been a wanton waste of fertilizing values which the future will teach us to utilize in a rational way.

Cattle feeding in the vicinity of Fort Collins has given place to lamb feeding, at least, to a large extent. The number of lambs which have been or are being fed in this immediate neighborhood during this season—the winter of 1904-05—is about 250,000 head.

In order to get a clear idea of the important bearing of the question of barnyard manure upon our agriculture, I will estimate the manurial value of the voidings of 250,000 sheep, using conventional but conservative data.

First, we will assume the feeding period to be 100 days; second, we will take the daily consumption of alfalfa at 3 pounds; third, we will assume the manurial value of alfalfa hay to be $11.90 per ton; fourth, that the voidings of the sheep contain 95% of the manurial values of the hay; fifth, that no corn has been fed.

On these assumptions, the total weight of hay consumed will be 37,000 tons, with a manurial value of $431,300. The voidings equal 95% of this value, or $409,735. I do not mean to say that this full value can be realized or that no losses will occur, but it is a fact that if our community should desire to purchase the amounts of potash, phosphoric acid and nitrogen contained in the voidings of these 250,000 lambs for 100 days, each lamb consuming three pounds of alfalfa per day, it would cost them not less than $409,735.

Is it feasible to preserve the whole of the voidings? Very nearly all, and the straw, which is still burned in considerable quantities, could be used to good advantage as an absorbent and would thereby be converted into an excellent form for application as a manure. We know that no one man in the community would reap the benefit of this great value, but the community as a whole should. While I have singled out the sheep feeding as an example, the principle applies to every individual, whether he keeps only one horse or a cow, or is a feeder on a large scale.

Every one ought not only to try to preserve and utilize all of the barnyard manure naturally produced on his farm, but he ought to use every practicable means to increase the amount. While this is particularly applicable to the farming districts, it applies in a less degree to the towns and cities as well.

In using barnyard manure which is produced upon the farm, we preserve, in a large measure, the plant food originally present, but we do not add any to the total originally present; on the contrary, a little goes off of the farm in various forms — in the increased weight of the lambs, in the case which we have already used as an illustration. The exception to this statement is in the case of the nitrogen, provided alfalfa, clover or pea vine hay has been fed, when, owing to the fact that these plants obtain a considerable portion of their nitrogen from the air through the agency of certain organisms, we may actually return more than we took away from the soil with the crop.

The use of barnyard manure is pre-eminently a method of maintaining the fertility of the land, but is in a measure a method of increasing it by improving the conditions of the soil, also by adding organic matter, and in our case by increasing the supply of nitrogen.

GREEN MANURING.—The next best method is probably that of green manuring, and for this purpose we have no better plant than alfalfa. I know that there are some who may think it too big a sacrifice to turn under a good growth of alfalfa for the sake of its manurial effect upon the soil. The writer has a great deal of sympathy with this view, but it is not well supported by any facts which we can produce. There seems to be no plant which could be grown here for this purpose. Crimson clover is, so far as I have seen, a failure with us; red clover is by no means a pronounced success, though it will grow; pea vines do not make a sufficiently early growth. Some of the vetches might be better, but they, too, are not early enough. Rye might be used if we aimed at adding succulent organic matter, which would easily decay, but would add no nitrogen or other fertilizing substance.

In green manuring we take nothing away from the soil, nor do we use the crop grown for any other purpose, but simply return it to the soil in its succulent and easily fermentable condition, together with the total content of plant food which it has gathered from the soil. The effects produced may be marked, but they are not due to actual addition of plant food, as in the case of the addition of mineral manures, but are due to the availability of the plant food contained in the crop, the effect of the fermenting material upon the soil and probably to the humus substances produced.

I have stated that alfalfa is our best plant for this purpose. It is out of the question to use this plant for this purpose, except in some systems of rotation, which is, under all circumstances, advisable, whether the last crop is to be potatoes or sugar beets. I am not prepared to even suggest what rotation will prove to be the most advisable; some of our practical men can work that out in detail.

I fully appreciate the fact that a good plantation of alfalfa which will yield 3½ to 5 tons of alfalfa hay per acre is a valuable asset on a farm, but some of our people are coming to realize that it is a good thing to plow under, too, though it is not the easiest task to perform, especially when it is in full growth in the spring time.

ALFALFA OUR BEST PLANT TO USE AS A GREEN MANURE.—There are several considerations which lead me to think this the best plant which we possess for this purpose.

Our soils are only fairly rich in nitrogen, and an addition of this element from time to time is very advisable. Alfalfa is an energetic gatherer of this substance, largely from the atmosphere, the young alfalfa shoots being relatively very rich in this element. There are but few plants, even among the legumes, by means of which we can add nitrogen to the soil so cheaply as by means of alfalfa.

Alfalfa is not only an energetic gatherer of nitrogen from the atmosphere, but it is also an energetic gatherer of other plant food from the soil, so much so that a ton of alfalfa hay made from plants cut in May before any blossom buds had appeared, contained about 60 pounds of potash, equivalent to 111 pounds of the pure sulphate of potash, and whose value would be $3 at the price prevailing last year, while the nitrogen in the same would be worth $8.50, nearly.

EFFECTS OF ALFALFA DUE TO DEEP FEEDING.—I will here digress a little to discuss a fact which I have made rather prominent and one which may seem to some as an objection to the alfalfa. I have stated that the alfalfa plant is an exceptionally heavy feeder, which I have shown to be the case by showing that the market value of the food constituents removed from the soil by 1 ton of alfalfa hay, assuming one-half of the nitrogen to have been derived from this source, was $7.57 at the prices which potash, phosphoric acid and nitrogen commanded in 1904 Some persons have before now asked me how it is possible to harmonize this fact with the observed improvement produced by putting land down to alfalfa for a few years.

Both facts are well established, i. e., that a piece of land which once produced 50 bushels of wheat per acre and had been so far exhausted that it would produce only 18 bushels, may be so far restored in its fertility by being put down to alfalfa for a few years as to produce 35, 40 or even more bushels per acre.

In the meantime it is very probable that an average yield of 4 tons of alfalfa hay has been cut annually. This land was no longer able to produce 50 bushels of wheat per acre, which, with the straw, would require not more than 143 pounds of potash, phosphoric acid and nitrogen taken together, but it would very probably yield 4 tons of alfalfa hay during the season, which would require 469 pounds of these ingredients. The alfalfa crop of 4 tons per season removes a trifle over three times as much of these elements of plant food as a 50-bushel crop of wheat, together with its straw, and that from soil which has been so far depleted of its supply of plant food as to no longer yield more than 18 bushels of wheat.

I would not be too sure that I can fully explain this great difference. It is, however, no less certainly a fact than it is that such land will again produce wheat at a greatly increased rate after it has been in alfalfa for a few years.

While I may not explain the facts in the case, I will suggest some things which are apparent. The root systems of the two plants are entirely different. The wheat plant has a fibrous system which, under favorable conditions, may penetrate the soil to a depth of 4 feet, but the conditions obtaining in our soils are not favorable to their attaining this depth. It is a fibrous system, one admirably adapted to gathering sustenance for the plant from rich, mellow ground, especially at no great distance from the surface, but not to penetrate hard soil to more considerable depths.

The 4 feet mentioned as the maximum depth to which the wheat roots may penetrate is probably very much deeper than they, in fact, penetrate our soil, unless it be in very exceptional cases.

The alfalfa has a simple tap root system, at the best only slightly branching, but able in our soils to attain a depth of from 9 to 12 feet, even through soil so firm that a pick is necessary in order to remove it. The largest, most branching portion of this root system is at the point of its depth or nearly so. This system is marvelously free from fibrous roots, though under special but easily explained conditions there may be a fair abundance of what may be termed fibrous roots. For our present purpose we may waive the question of the relative ability of these two plants, the wheat and the alfalfa, to obtain food from sources which may yield it slowly or with great reluctance, and simply consider the amount of soil which they respectively lay under tribute, considering that the whole of the soil from the surface to the maximum depth attained by the respective root systems is involved. Using this assumption as our basis, we see that no part of the soil would be laid under a relatively heavier tax by the alfalfa than by the wheat, because the alfalfa feeds to a depth at least three times as great as the wheat plant. Our assumption, however, is not justified by what we know of the roots of the alfalfa, which form a cone-shaped system whose base is from 9 to 12 feet from the surface. The first few feet of the root may consist of a single tap root and cannot possibly come in contact with more than a small fraction of the soil reached by the smaller roots of the deeper portion of the system. The larger portion of the tap root near the surface, even if it is as active in gathering food as any other portion of the root system, can only gather a comparatively small portion of the food used by the plant. This justifies us in using the term so frequently heard, characterizing the alfalfa as a deep feeding plant. These considerations also justify the popular expression that the alfalfa rests the land, meaning, of course, that portion of the soil previously exhausted by the wheat. The correctness of this assertion is not in the least affected by the apparently contradictory fact that a 4-ton crop of alfalfa hay removes from the soil a trifle over three times as much plant food as a 50-bushel crop of wheat, including the straw.

There are some interesting facts relative to this question, and, while certain reservations ought to be made, we can still, with a fair degree of accuracy, state that the alfalfa obtains its food very largely below the depth to which the wheat root can penetrate. This explanation may not be a complete one, but it answers two questions which are frequently asked: First, Is alfalfa a heavy feeder? To which the answer is, yes. Second, How does it rest the soil? To this we offer the following answer: By feeding below the depth had in mind by the questioner.

EFFECTS OF ALFALFA DUE TO OTHER CAUSES.—We will now turn to some other facts which cannot be omitted in considering the question of alfalfa as a green manure. Alfalfa is not a plant which can be sown in late summer or early fall with the expectation of obtaining a growth of desirable material to plow under the following spring. We can only use it as a green manure at the end of a rotation in which alfalfa is one of the crops, and involves a longer rotation than can advisably be used under Eastern conditions, consequently it is necessary to take other factors into account.

We have assumed that our alfalfa has yielded 4 tons of hay annually and we have removed from the soil a total of 469 pounds of plant food in the form of potash, phosphoric acid and nitrogen, or 369 pounds, considering that only one-half of the nitrogen came from the soil. The loss in making alfalfa hay ranges from 20% to 66%; in other words, a 4-ton crop of hay gathered represents, even under the most favorable conditions, 5 tons cut, not counting the stubble. This ton lost is composed of leaves and the fine stems, portions richer than the average sample of hay in nitrogen and ash constituents, and representing a total of 117 pounds of plant food. This, owing to our practice of irrigating after each cutting, especially after the first and second cuttings, is almost wholly incorporated into the soil, for the moisture will facilitate its decay and the strong stubble will prevent its being washed away to any considerable extent. The stubble proper is not considered in the preceding statement, on account of which we are justified in increasing this amount—117 pounds—to 150 pounds, which alone is as large an amount of plant food as is required to raise a 50-bushel crop of wheat. It is further to be remembered that, as we have assumed one-half of the nitrogen added came from the air and the rest of the substances from portions of the soil beyond the reach of the wheat plant, the amount of plant food added is practically a clear gain.

So far two important points have accrued to our soil by simply being put down to alfalfa, a practical resting of the surface soil, which would be still further benefited, as I firmly believe, if we could give alfalfa a cultivating, and, second, by an addition of plant food. These are not the only points which we will gain if at the end of our rotation we turn under a good growth of succulent alfalfa, rich in nitrogen and potash. Our soils need organic matter, but coarse manure or such as has been firmly matted do not readily pass into decay under our conditions, but the green alfalfa ferments easily, exercising a very beneficent influence upon the soil, not only adding its own available plant food, but possibly acting quite vigorously upon the soil itself, greatly improving the mechanical as well as the chemical conditions. Some of our farmers have already discovered that these things are facts and do not hesitate to turn under a fine growth of alfalfa, though some still look upon it as a doubtful practice.

Some other facts at which we have arrived are of interest in this connection, i. e., the actual manurial value of the stubble. On an acre of alfalfa taken to the depth of 6 inches it is worth, estimated in the same manner that we have estimated the manurial value of the hay, not far from $20 an acre, while the roots below the depth of 6 inches possess a value of $16, or the stubble and roots together have a value of about $36 per acre. It may be a rather difficult task to turn under a growing crop of alfalfa in middle or late spring, but it is also difficult to correctly estimate the great manurial value of the excellent material thus added to the soil. It is certainly very much in excess of the figures given above.

There is still another respect in which alfalfa is probably our best crop to use as a means of benefiting the soil. It has been intimated, though not explicitly stated, that our soils are often very firm at shallow depths, so much so that it is very probable that scarcely any cultivated plant may be able to reach the greatest depth to which it can and would feed under ordinarily favorable conditions. A good stand of alfalfa, say three years old, will probably have 500,000 plants to the acre, or more than 10 plants to the square foot, every one of which penetrates the soil to a depth much greater than the usual feeding depth of such plants as potatoes, beets, wheat, etc. They not only in this way open up the

soil to the attack of less vigorous roots, but fill these channels with a supply of plant food, accompanied by a mass of organic matter that by its decay may bring still more plant food into available form.

Our alfalfa is an excellent plant to turn under asa green manure, but owing to facts which are evident to every ranchman this involves a certain rotation of crops, at the end of which a good, vigorous growth of alfalfa can profitably be added to the soil.

Agricultural Review.

Fresno.

RAISIN GROWERS FORM COMBINE WITH PACKERS.—At a meeting of the California Raisin Growers' Co., a joint stock concern, which has succeeded the old Co-operative Association, the proposition submitted by the directors of forming a joint stock company with the big packers was indorsed by a vote of 8647 to 3191, each voter representing one acre. There are about 40,000 acres subscribed to the company. The new joint concern is to be known as the Central California Raisin Packing Co, It is to be controlled equally by the growers and the packers, the balance of power to be held by a neutral director. The packers are to get $5 a ton for selling the crop and the assurance of 40,000 tons. The estimated acreage of raisins in the State is 70,000.

Merced.

CROP OUTLOOK.—Merced Sun, July 21: H. J. Hinds reports that tomatoes have been shipped from Merced in bountiful quantities and that they are much in demand, owing to the blight suffered in other localities. The prices have averaged 5 cents a pound and the early shipments were far in advance of other localities. Some apprehension has been felt by the sugar beet growers as to the disposal of their crops, owing to a report that the shortness of the season's crop will not justify the operating of the sugar factory at Crockett. Notwithstanding the blight, the beet harvest around Merced will be fairly good, and the quality of the product is said to be very good. C. S. Baxter will have 150 tons of the beets and his fields present a thrifty appearance. The wheat harvest in Merced county is nearly closed. Contrary to early expectations, the crop will not be very profitable. Barley will also fall below the average. Many fields which presented a fine appearance did not yield in accordance with their looks.

Monterey.

HOT SPELL BENEFICIAL TO BEETS.—Salinas Index, July 20: Farmers who have been interviewed relative to the effect of the recent hot spell on the crops say that sugar beets have been greatly benefited on the irrigated land; also beans for the most part, although in a few instances they have been slightly damaged by the hot wave.

FRUIT BURNED.—San Francisco Chronicle dispatch from Salinas, July 22.—County Horticultural Commissioner D. C. McLain reports that the recent hot spell burned the fruit crop in the Salinas valley badly, particularly south of Soledad. The summer apples were cooked on the trees and the apricots totally destroyed, while in the zone between Soledad and Gonzales all the fruit is useless. The Newtown Pippins have suffered worst, all the winter apples being baked on the south side of the trees. In Carmel valley and Corral de Tierra the fruit escaped damage. The codlin moth is being gradually wiped out, but a new pest, a red spider, is found, which is now being fought with some success.

Placer.

PROCESS FOR COOLING FRUIT.—Placer Republican, July 26: The invention by A. R. Sprague, manager of the California Fruit Exchange, of a process of cooling fruit before it is placed in refrigerator cars will work a revolution in the shipping of fruit. A lot of peaches, containing 1108 boxes, fully ripe, were subjected in Oleander, Fresno county, to Mr. Sprague's process of cooling before being loaded into the cars. They arrived in Chicago firm and hard and sold for $1132, a little over $1 a box. Heretofore, unless peaches were shipped partly green, they rotted before arriving at their destination. Experts who examined the fruit at Oleander when it was placed in the car state that if it had not been cooled first by Mr. Sprague's process it would have been rotten before it had gone one-third of the way across the continent. A plant is being installed at Loomis and will be ready for business this week. A car of hot fruit can be cooled in four or five hours, instead of three days as formerly.

Riverside.

HONEY CROP.—Perris Progress, July 20: The California National Honey Producers' Association of which J. W. George is one of the directors, has sent out a circular to its members containing some matters of interest to the honey producers of this section. Mr. George states that the Association represents about 25,000 colonies of bees or about one-fourth of the bees in the seven southern counties of the State. The crop reports for the honey producing States of the southwest are all below par. Southern California is reported as having about one-tbird of a crop, with prospects for a fair crop in the central part of the State. Colorado will have about 60% of a crop while Arizona will have the lightest in years. The Association has not fixed an arbitrary price on honey, but its members are advised to hold their crop for the following prices: White 5 cents, light amber 4¾ cents, amber 4 cents. Arrangements can be made for storage in Los Angeles for $2 per ton per year for extracted with 50% addition for comb honey, and there insured for $100 per ton at a yearly rate of 50 cents. The estimated crop for southern California based upon the reports received and the number of cases and cans sold is placed at 125 cars of twenty tons each.

Sacramento.

CROPS AT ANTELOPE. — Sacramento Union, July 20: Some wheat was so poor that it didn't pay to harvest it, while the best went seven sacks to the acre. The oats went all the way from five to fourteen sacks. The fruit crop was badly burned by the spell of hot weather. J. W. Pruett has purchased an almond huller.

San Joaquin.

BOULDIN ISLAND.—Lodi Herald, July 22: Bouldin Island, it may be recalled, was some time since mostly submerged by waters from the Sacramento river, has been reclaimed and considerable land planted to crops, which it is to be hoped will prove a paying proposition. A large portion of the land is used for pasturage, and 12,000 sheep are now grazing there.

GRAIN HARVESTING. — Lodi Herald, July 22: Ten big combined harvesting machines are taking care of the large grain crop on the San Joaquin ranch. According to the estimates of the ranch managers, a total of 18,000 acres has matured a crop of grain this season, and this will yield from twelve to fifteen sacks to the acre. The whole crop will aggregate in the neighborhood of 250,000 sacks, an average yield for the ranch. From present indications the barley will be of good quality.

THE DAMAGE TO GRAPES BY HEAT.—Stockton Independent, July 22: George Mosher, who has vineyards 6 miles north of Stockton, reports that his wine grapes have suffered 25% damage from the excessive heat of the first week of July. Were it not for the heat he would have had the largest crop he ever gathered. The young vines were so full that they had to be double roped to keep them off the ground. His Tokays have suffered 50% from shrinkage.

FLAX MILL.—The Stockton Mail reports that a company is to be formed to build a flax mill on the San Joaquin river.

San Luis Obispo.

CROP WILL BE GOOD. — San Luis Obispo Tribune, July 21: A. Phillips of Arroyo Grande stated yesterday that the bean crop in that valley this year will be far above the average.

Santa Barbara.

OLIVE CROP.—The olive crop in this section of the State promises to be one of the most extensive that has been gathered in several years. It is reported that on the Ellwood Cooper ranch the yield will be heavier than it was two years ago, when the crop was a record breaker. It is estimated that this season's output on the Cooper ranch will yield about 70,000 bottles of olive oil, a product which, because of its very fine quality, is in demand in the principal markets in the world.

WALNUT OUTLOOK IMPROVES. — Weekly Press, July 20: While the walnut crop of the Goleta ranches will doubtless be not more than half the usual yield, the conditions are more encouraging than earlier in the season, when it was thought that the trees had suffered. Dr. Yates, the county horticultural commissioner, visited the Goleta district yesterday, and reports that, while the trees leaved very late, they appear in excellent condition, and there is no indication of blight, which has caused the growers much uneasiness, owing to its appearance in groves in counties farther south. The peculiar seasonal conditions of the past few years are held responsible for the strange state of the nut and fruit trees of the locality.

ALFALFA.—Goleta farmers are following the example of the Los Alamos ranchers, and are beginning to experiment in the culture of alfalfa as a hay product. A number of new wells are being drilled in different parts of the valley and the water thus produced will be used to water alfalfa fields. The farmers believe that the crop will be a paying investment and will be good feed for dairy cows and other stock.

Santa Clara.

GOAT DAIRY.—Of interest to dairymen is the goat dairy of Dr. H. S. Warren Johnson, near Los Gatos, Cal. Dr. Johnson established this goat farm some time ago, and has now fifteen milkers. Among them are some fine imported stock, one of which was imported from the Island of Malta. Its value, it is claimed, is $150. It is understood that Dr. Johnson is going into this business on a very large scale, and is going to start a dairy in San Jose, as well as in Los Gatos. There is quite a demand for this milk and the Los Gatos dairy has been doing a good business.

Solano.

TULE LAND RECLAIMED.—Napa Register, July 21: One of the largest reclamation projects in this section of the State is under way on Napa creek, north of Vallejo. Seven Eureka dairymen have formed a company with $50,000 capital and have a dredger at work reclaiming several thousand acres of tule land. The work starts at the Slaughter House point and extends up Napa creek for 2 miles. Mrs. A. M. Belt, who owns several thousand acres of land in the tules, is reclaiming 800 acres as an experiment, and if the project is a paying one will spend several thousand dollars additional in the work. It is the plan of the company of Eureka men to cut up their tract of land into 200-acre farms and lease it to a colony of Hollanders. Cross Island, upon which 10,000 tons of hay was produced this season, is being leased out in 200-acre tracts to another company of Dutch dairymen. There are 60,000 acres of tule land between this city and Napa which experts say contain some of the richest loam in California. With the establishment of the big asparagus cannery at Napa Junction a ready market will be provided for profitable crops.

Sonoma.

NEW WINERY. — Santa Rosa Press-Democrat: Work is progressing on the new Hallengren winery on upper Dry creek, and everything will be in readiness when the grapes are gathered. The building is 80x64 feet, half of which will be set aside for the storage of 100,000 gallons of wine in 10,000-gallon tanks. The fermenting tanks will contain about 150 tons of grapes at a time. It is expected the yield this year, which will be handled, will be 600 tons.

Stanislaus.

WHEAT FROM JERSEY.—Modesto Herald, July 20: At the office of the H. & K. Warehouse Co. in Modesto are heads and the harvested grain of a new wheat known as "Gold Coin," from the ranch of W. W. Hall, in the Montpelier district. The heads are deep brown, the grain a clear white. Mr. Hall obtained the seed from New Jersey and planted it on the outside lines of a half section of Club wheat. The Gold Coin took the rust, like the other variety, but it seems to have largely resisted the effects of this grain destroyer. Though on the outside of the field, it turned out nine sacks to the acre, while the Club, inside, hardly yielded three sacks, and the best summer-fallow on the place did not exceed five sacks.

Sutter.

WOOL CLIP.—Some of the sheep owners have commenced shearing, and, from all reports, the fall clip will be good. The present price of wool in this section is from 20 to 22½ cents per pound. A wool sale will probably be held in Marysville this fall, and most of the growers will hold their wool until that time.

NEW CANNERY.—Special to Sacramento Bee: The Golden State Packing Co., incorporated at $1,000,000, has absorbed the large fruit-drying establishment of Rosenberg Bros. of Yuba City and will shortly equip, in addition to the dried fruit packing department, one of the largest fruit-canning establishments north of Sacramento. Manager C. A. Rand of the local plant of Rosenberg Bros. states that the plant will be in readiness for operation next season. The capital at the back of the enterprise is represented by Castle Bros., the Phœnix Raisin & Seeding Co., Guggenheim & Co., and Rosenberg Bros. & Co. The $1,000,000 capital stock is all paid up. It is learned further that this company contemplates establishing a number of other plants in this part of the State, but the plant at Yuba City will be the first to be equipped and made ready for next season.

WAY TO PREVENT SCABBY POTATOES. —Sutter Independent, July 20: C. L. Wilbur is delivering potatoes to the market that are unusually clear of scab. In reply to a question as to how he managed his crop, he stated that he sprinkled sulphur in the rows on top of the potatoes just after planting and before covering. On 2½ acres he used 3½ sacks of sulphur and the result of the experiment is shown by the condition of the potatoes. He says the sulphur also prevents the active work of the wire worms.

GRASSHOPPERS ATTACK VINES.—It is reported at Yuba City that the grasshoppers, which have been doing damage to trees and vines near the Sutter Buttes, are migrating eastward and have gotten as far as the Pease and Frisbie vineyards. Wyman Pease, who farms the old Frisbie ranch, states that the hoppers have practically taken his brother's young vineyard and were eating the leaves on his vines. They strip the vines of foliage and leave the bunches of grapes exposed to the hot sun. Efforts will be made to check the advance of the insects and prevent them reaching the large vineyards nearer town. Horticultural Commissioners Stabler and Kells have taken the matter in hand.

Tulare.

PACKING ORANGES.—Lindsay Gazette, July 21: The Citrus Union commenced yesterday noon to pack out three cars of Valencia oranges, which are the last of this summer's crop grown on the Camilla ranch. The fruit was slow in coloring for some reason and was not ready to pick in the regular Valencia season, which ended in this district over a month ago. It will take about four days to dispose of the fruit with the small force working.

Ventura.

THRESHING BARLEY. — Oxnard Courier, July 21: Eight threshing outfits are at work in the valley and all of them have plenty of work. The yield is not up to the expectation in a good many places, but better in others, so that the average will be well up. Several fields have been reported at forty sacks per acre, but this is quite exceptional and half that amount for barley is considered very good. From the best reports obtainable, though, it is thought that the grain crop will be less than it has been estimated at any previous time. Little or no wheat has been threshed yet, so that there is no estimate to be placed on that crop. Farmers are bid from 85c to 90c per hundred for their barley and from $1.30 to $1.40 per hundred for their wheat, but no wheat sold. O. A. Waldeigh has his machine running on the Conejo and reports the barley making from ten to fifteen sacks per acre. M. V. Carr's machine is in the valley and his report of the yield is some better, running from twelve sacks up. Scott Saviers, Louis Maulhardt and the Ventura Agricultural Co. are all in the valley, but no report has been received in regard to their threshing. Up in the Simi there are two machines running, Joe Lewis and Chas. Cook, and the average is reported fair and the grain good.

Yuba.

HOPS AND GRASSHOPPERS.—Four Corners, July 21: Grasshoppers are making matters very unpleasant for some of the Wheatland hop growers at present. Wm. Muck, who has charge of the Drescher yards, says the hoppers are unusually numerous there, and they are fast stripping the vines of leaves. He has inaugurated a crusade against the pests and for several days has been carrying on war with hopper dosers and crude oil. Up to date he has destroyed nearly a hundred bushels of the pests, and they seem to be as numerous as in the beginning. It is stated that they breed in the alfalfa which adjoins the hop yards. So far the hops have not been damaged to any extent, as only the leaves have been attacked. But it is feared that should the hoppers remain for an indefinite period the leaves will be consumed and an attack made on the burr. Should this occur the consequence can be foreseen.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

The Legend of Evil.

This is the sorrowful story
Told when the twilight fails
And the monkeys walk together
Holding each other's tails.

"Our fathers lived in the forest,
Foolish people were they;
They went down to the cornland
To teach the farmers to play.

"Our fathers frisked in the millet,
Our fathers skipped in the wheat,
Our fathers hung in the branches,
Our fathers danced in the street.

"Then came the terrible farmers,
Nothing of play they knew;
Only they caught our fathers
And set them to labor, too.

"Set them to work in the cornland
With plows and sickles and flails,
Put them in mud-walled prisons
And cut off their beautiful tails!

"Now we can watch our fathers,
Sullen, and bowed, and old,
Stooping over the millet,
Sharing the silly mould.

"Driving a foolish furrow,
Mending a muddy yoke,
Sleeping in mud-walled prisons,
Steeping their food in smoke.

"We may not speak to our fathers,
For if the farmers knew,
They would come up to the forest
And set us to labor, too."

This is the horrible story
Told as the twilight fails,
And the monkeys walk together,
Holding each other's tails.

—Rudyard Kipling.

A Sinner Unrepentant.

"My, but your mornin' glories do look nice, Miss Phemey! Wish you'd save me some seed offen that white one." It was Mrs. Ridley coming up the walk.

"I will, Mis' Ridley. Come in and set down. There's a pa'm leaf on the lounge, an' mebbe you'll take a glass of cool water. It's a scorchin' morning," said Miss Phemey.

"I would like a drink, thank you," responded Mrs. Ridley. "Seems like when anybody's fat as I am, they just get he't' up like a coal stove. My, that tastes good. You got a grand well, Miss Phemey."

The hostess smiled a flattered smile, but before she could speak Mrs. Ridley went on: "I brought over three of Mr. Ridley's vests, Miss Phemey, to get you to mend 'em. He's bu'sted 'em ever' one right down the back, f'r all the world like a seven-year locust, I tell 'im, an't seems like I got no time to fix 'em, with Emma May gittin' married next week. We're just livin' in a regular whirlwind, an' sorry as I'll be to see Emma May go—not that I don't like Charlie Foote, but you know what I mean—I cert'ney shall be glad when all this fuss is over."

"I expect it is trying," sympathized Miss Phemey. "But Emma May's always been a good daughter, an' she deserves a fine weddin'."

"'Tain't that I don't want her to have it," said Mrs. Ridley, hastily. "But I'm just dog-tired this mornin'—for the land sakes, it's half-past ten o'clock a'ready; I got to go. You bring them vests over when they're done, Miss Phemey, an' I'll pay you f'r 'em. I'd send one o' the boys over, but Emma May wants you to come perticular an' see her presents, so 't'll be killin' two birds with one stone." She chuckled comfortably as she stepped outside the door.

Miss Phemey looked after her departing form with resentful stare. "Yes," she muttered, "she can get Miss Maxwell to make Emma May's weddin' clothes, but I'm good enough to mend up Jim Ridley's old vests. I'll charge her 15 cents apiece, see 'f I don't; that'll be 45 cents. Does seem a good bit to charge f'r mendin' three vests."

Miss Phemey went in and shut out the glare of the summer day. As she picked up the package of vests her thin little hands trembled. Tears sprang to her eyes and she burst out fiercely: "'Tain't right! I made Emma May Ridley's dress to be christened in, little teenty baby as she was, an' I made her a dress to be confirmed in, an' I made her a dress when she graduated at the high school, an' she'd always said I should make her weddin' dress. That flauntin' city thing's got all my trade! I've sewed here all my life and dealt honest by all, an' it's not fair." The tears rolled down her withered cheeks and fell unheeded upon Mr. Ridley's second best pepper-and-salt vest. Presently her wrath flamed anew.

"Emma May wants you to come pertickler to see her presents! 'Tain't no hint; oh, no? Sally Ridley needn't 'a' troubled herself to say that. I got a present for Emma May, an' I'm going to give it to her. I'd like to get even with them, the whole kit of 'em. Jest as if I couldn't 'a' made Emma May's weddin' clo's. They tell me Miss Maxwell uses a chain-stitch machine. I always did say chain-stitch machines was made for the careless, an' I don't see no reason to change my mind. Well, 'pon my word, this vest ain't on'y bu'sted, but frayed int' the bargain." Miss Phemey fell briskly to sewing.

The next day, despite the threatening rumble of a distant storm, Miss Phemey dressed in her best and started toward the Ridleys, carrying two packages. She was graciously received by Emma May, a fat, fair girl of pleasant mien and placid disposition.

"I brought home them vests," explained Miss Phemey; "and here, Emma May, is a little present I brought for you. It'll be nice f'r your dining room table, I thought." She held out a small white pasteboard box, with an expression of the heaping-coals-of-fire kind.

"Ma," called Emma May, "come here; Miss Phemey's brought me a butter knife; Wisht you'd look. That cert'ney is beautiful."

"It's solid silver," said the donor, proudly. "My niece down to New York got it for me." She received the thanks, delivered a trifle embarrassedly, of mother and daughter, with polite coolness.

When the bride-elect invited her to an inspection of the presents, Miss Phemey looked them over and made few comments. She turned the set of silver spoons, "presented by the groom's parents," so that the plate mark was visible, and she tapped the globe of a gaudy china lamp with the remark that they were just $2.35 down to Beedham's. When she had looked at all, she said, cheerfully:

"Now I want to see your clothes, Emma May."

Mrs. and Miss Ridley exchanged glances of annoyance, but the latter led the way to the spare room, where, on the bed and chair, lay the creations of Miss Maxwell, "City Modiste."

There was the white silk wedding dress, the tan traveling dress, some odd waists, a black satin, stiff with jet, and a "tea gown." No girl in a country town marries without these last indispensable garments; they are the real backbone of the trousseau.

Miss Phemey looked at the display, felt the quality of the material, and examined the despised chain-stitching, without a word. At last she said, pleasantly conscious of paying old scores:

"If I might persoom to criticise, I really do think it's a pity you got your wedding dress made with a p'inted overskirt. All the latest fashion books say they're not worn at all this season; and box-pleats, too, is a kind of droppin' out. I was readin' only yesterday that 'twas just the cheapest goods was made up so any more. That black satin's real pretty, though. Did you see Lena Sullivan's black satin? Hers was a beauty—finest piece of satin I ever cut into, an' all made up with these here pleated ruffles. Why, Emma May, seems if you'd be more afraid to leave all these fine things in here with the winder open, this room on the ground floor like it is. It's been a real treat to see such elegant clothes, an' I hope your married life'll be happy. The Footes have all got terrible unreasonable tempers, they say; but I hope you'll be able to manage Charlie. Good-bye, all."

Miss Phemey walked home slowly. Even the thought of the darts she had planted in Mrs. Ridley's capacious breast brought her no real comfort, when the vision of the snowy wedding dress rose before her.

"Things ain't edge even yet," she murmured. A low growl of thunder startled her and she hastened into the house to shut out the cutting flare of the lightning. When the kettle boiled she set her lonely table and made tea. The quick thump of heavy rain-drops on the roof made her start nervously. Night had come with the storm, and after her supper was over, Miss Phemey sat in the dark and meditated. About 10 o'clock the rain ceased, and she flung the shutters open. The stars were shining now. The air outside was cool and damp and fragrant. She looked over toward the Ridley house, and as she did so their last light went out. Miss Phemey strained her eyes to no avail. All was darkness there.

"I'm a-going to do it," she said aloud, determinedly. Rummaging over the table, she found a pair of scissors. She took a match from the box beside the window and unlocked the door. The moon was creeping up, a flat disk of pale yellow. Miss Phemey looked down at herself and saw that she still wore her best dress. "It'll be all drabbled," she thought; then recklessly, "I don't care, nohow."

She brushed against the dripping flowers beside the garden path, and held her breath as the gate gave a whining cr-e-ak. Out on the road, walking noiselessly, she went. Once she heard a team coming and crouched in a corner of the worn fence, behind a little sweet-gum sprout, till it was past. She recognized the doctor's rig and her heart came up in her throat and beat there, with great frightened leaps; but he passed by safely and she crept on.

At last, after a seemingly unending journey, she reached the Ridleys' gate. Round to the left wing—slowly—slowly—and the window was still open! She stopped and looked in. The moonlight lay in patches on the floor, the dresses spread upon the bed, and there, within reach, it fell upon the wonderful pearl beading of the wedding dress and made scintillating lights. Miss Phemey saw all this and slowly—slowly—her hand went out toward the glistening beads. A quick jerk, and the waist of Emma May Ridley's wedding dress lay across her knees. She sought the seam in the middle of the back. She could feel the despised chain-stitching and she slipped her fingers deftly along toward the collar. What was this? A loose end of thread—a little pull—r-i-i-i-ip it was done! In a spasm of fear Miss Phemey hustled the waist through the window, back into place, and ran into the concealing shadow. Out to the gate, down the road again—she was almost home. Suddenly she stopped and gave a little chuckle.

"Them bastin's'll hold it together so nobody'll s'spect—lucky she left 'em in. But when Emma May puts it on, big an' fat as she is, it'll bu'st square up the back like a frog." She couldn't help laughing at the idea; it tickled her fancy so. She forgot her wet feet, her draggled, muddy skirts, and went to bed with a smile still pulling at the corners of her mouth.

The next morning the exposure had done its work. She was hoarse and feverish, and there was a sharp pain that stabbed her at every breath. "Threatened with pneumonia," the doctor said, and commanded her not to stir from her bed, though she could not have done so had she so wished. The neighbors were very kind and attended her faithfully, and the tenth day found her sitting up, very weak and frail, but with life in her eyes and voice.

Mrs. Emerson, the town gossip, came in and brought a bundle.

"Just as soon as you git able, Miss Phemey, I want you to make me a dress. It's one Mr. Emerson got me over to Bristol, an' he showed real good taste for a man, I must say. Look-a-here, ain't that fern leaf real pretty?"

"It's just beautiful," assented Miss Phemey. "Seems if you'd have Miss Maxwell make it up, bein' she's from the city and all."

She'll never cut into a piece of goods f'r me, I c'n tell you," said Mrs. Emerson, with emphasis. "Ain't nobody told you how she made Emma May Ridley's weddin' dress and never sewed up the back, an' Emma May, not suspicionin', put it on an' bu'sted it clean wide open? O' course you was sick an' didn't git to the weddin'; but I was there, an' the weddin' party was nigh an hour late jest on that account. Nothin' but a bastin' thread to hold it together; such shif'lessness? Course, bein' bad luck, Emma May never tried on the dress after it come home, like she did the others, an' I c'n tell you she was hoppin'. People at the church didn't know what on earth was the matter. No 'ndeed, Miss Maxwell makes no clo's f'r me."

After her visitor was gone, Miss Phemey lay back on her pillows and looked out of the window a long time.

"'Twas an awful mean trick, I know," she said at last. "'Twas right; but I got this spell o' sickness to pay up fer it, an' that butter-knife was solid silver and real expensive. I'm evened up all 'round—an' somehow—I jest can't care."—Ladies' World.

Pimples and Their Cure.

Probably there is no one affection of the complexion that causes more anxiety to women than pimples. And despite the nauseous doses which they take in the endeavor to purify the blood they will continue to have pimples until they realize that they are not caused by the blood, except in rare instances, but come from germ infection of the skin itself.

If the skin is healthy the germs that find lodgment there will not flourish, but if the skin, which you must remember is an organ of the body just as much as the liver or heart, is too weak for resistance, the germs take root and grow and pimples are the result.

They can only be cured by killing off the germs and restoring the vitality of the skin, and internal medicine is of use only in so far as it may improve the general health and thus affect the skin.

People may inherit a weak skin, just the same as the weak heart or a weak stomach; but, although one's skin may thus be susceptible to germs, it is not possible to inherit eczema.

One case has come under observation in which a college athlete, whose health in other respects was perfect, had a bad case of ache, which yielded only to a rigid course of treatment. Any one troubled with pimples should consult a specialist. Many a girl spends years experimenting with powders and pastes and all kinds of nostrums, but her face does not recover its beauty, and is constantly showing the effects of the disease by the scars it leaves.

The prescription that has cured one person may be of no use to another, and should never be used without medical advice, for skins vary just as much as stomachs, and what is sauce for the goose is not by any means always sauce for the gander.

Any person unable to consult a physician should follow the general plan of washing the face often — at least twice a day — and squeezing out the blackheads at least once a week.

If any of the pimples contain pus great care should be taken in emptying them, as the pus is likely to infect other blackheads if it finds lodgment in them. If it enters any other pores of the face a fresh crop of pimples may be expected.

Most people who have pimples have also the bad habit of fingering the face. This should at once be stopped, for it infects the tips of the fingers, and they in turn distribute the infection to other parts of the face.

Remember that a pimple is an infected blackhead, because if germs had not lodged in the skin pus would not form.

The only true way to rest is to lie down in a darkened room, with closed eyes, and think of nothing. Even five minutes of such rest is valuable; the muscles of the face relax and one does not get a hard, set look which adds many years to the appearance.

The Pessimist.

What's the good o' anything
In this world o' ours?
What's the good o' summer time?
What's the good o' flowers?
What's the good o' winter time?
What's the good o' spring?
Is there anything to gain
Hearin' robins sing?
What's the good o' whistling tunes?
What's the good o' jokes?
Don't yer hate to git around
Where there's singing folks?
What's the good o' shakin' hands
Every time yer meet?
Ain't there lots o' bitter things?
What's the good o' sweet?
What's the good o' happiness,
Kin yer tell me? Say—
Don't yer think it's wastin' time
Watchin' children play?
What's the good o' working hard?
Put it to the test!
What's the good o' gettin' tired?
What's the good o' rest?
What's the good o' havin' brains?
What's the good o' health?
What's the good o' bein' poor?
What's the good o' wealth?
What's the good o' anything
Yer hear, er do, er see?
Where's the good in any man
That thinks an' talks like me?

—Herbert Flansburgh, in Boston Transcript.

Domestic Hints.

STEWED CUCUMBER SAUCE SUPREME.—Pare three green cucumbers of medium size and cut in quarters crosswise. Cut each quarter into halves lengthwise and take out the seeds. Cook slowly half an hour in a quart of boiling water salted. Drain in a colander and then on a cloth and reheat in a cup of sauce made of two tablespoons each of butter and flour, three-fourths cup of chicken or veal broth, one-fourth cup cream, one teaspoon lemon juice, and salt and pepper to taste.

CONSOMME WITH STUFFED CUCUMBER.—For three quarts consomme prepare three cucumbers. Pare the cucumbers, taking a thicker paring from the ends than the sides. With an apple corer remove the seeds, inserting the corer at both ends if needed. Parboil two minutes, rinsing in cold water, and drain on a cloth. Fill the opening with chicken or veal force meat, using any sauce to mix the force meat. Let simmer half an hour in white broth with a dozen bits of salt pork, salt and pepper. When cooked cut in crosswise slices half an inch thick. Serve three or four in each portion of soup.

TOMATOES.—To can tomatoes whole, select tomatoes that will pass through the mouth of the jars. Put four or five into a wire basket and plunge the basket into a kettle of boiling water. Then remove the skins and cut out the hard parts around the stem ends. Repeat until the jars are filled. Dissolve a tablespoonful of salt in four quarts of boiling water and fill the jar on the top. Put the rubbers in place and the covers on loosely. Set on a rack in a steam kettle filled with water nearly to the height of the rack. Cover and let boil nearly half an hour. Add boiling water, if needed, to fill the jars. Screw down the covers and set aside.

SLICED TOMATOES.—Remove the skins and hard portions, as directed above, and cut in slices. Bring to the boiling point in a granite or white-lined saucepan. Add one teaspoon of salt to each quart of fruit. Fill the jars, put on the rubbers and covers and cook in the steam kettle about half an hour. Fill from one of the jars, if needed, and make the covers tight. If a steam kettle be not at hand, let the tomatoes cook in the saucepan covered ten or fifteen minutes. Have the cans and covers standing in boiling water. Fill the cans to overflowing, then adjust the covers and rubbers and set aside. Tighten the covers when the jars are cold. The size of jars is immaterial, save that a pint of tomatoes is all that is required for use in a small family at one time.

STRING BEANS.—The starch in vegetables as they mature ferments quickly and renders it impossible, save by the use of chemicals, to can other than young, green and tender products. To insure tenderness can only such vegetables as are known to be freshly gathered. On no account use such as are known to have stood more than an hour. When possible, use a canner, as it simplifies the process. Wash young and tender string beans and remove the ends and strings. Keep green beans about 2 inches in length whole Cut butter beans in two or three pieces each. Pack in glass cans and set in a folded cloth on a rack in a steam kettle or canner, in which there is boiling water nearly to the height of the rack. Dissolve a tablespoon of salt in four quarts of boiling water and pour the water slowly over the beans in the jars, filling each to overflow. Put the rubbers and lids in the kettle to be sterilized, not on the jars. Cover and cook from an hour to an hour and a quarter, then adjust the covers and cook fifteen minutes longer. Tighten the covers when the jars are cold.

Telling Fortunes by Tea Grounds.

First, the one whose fortune is to be told should drink a little of the tea while it is hot, and then turn out the rest, being careful not to turn out the grounds in doing so, and also not to look at them, as it is bad luck.

Then she must turn the cup over, so that no water remains, for drops of water in the tea grounds signify tears.

Next, she must turn the cup around slowly, toward her three times, wishing the wish of her heart as she turns it.

After this she must rest it a minute against the edge of a saucer—to court luck.

Then the fortune teller takes it and reads the fortune.

Three small dots in a row stand for the wish. If near the top it will soon be realized; if at the bottom some time will elapse.

If the grounds are bunched together it signifies that all will be well with the fortune seeker; but if they are scattered it means much the reverse.

A small speck near the top is a letter; a large speck, a photograph or present of some kind, what it is depending on the shape of the speck.

The sticks are people—light or dark, short or tall, according to their color and length. A small one means a child; a thick one a woman.

If they lie crosswise they are enemies; if straight up, intimate friends or pleasant acquaintances to be made.

If a large speck is near them it means they are coming for a visit, bringing a valise or trunk.

If there is a bottle shape near a stick it means a physician; if a book shape, a lawyer; if many fine specks, a married man.

The sticks with a bunch of grounds on their backs are bearers of bad news, or they will "say things" about you.

A long line of grounds with no openings between foretells a journey by water; if openings, by rail.

A large ring, closed, means an offer of marriage to an unmarried woman. To a married one it means a fortunate undertaking; to a man, success in business.

A small ring is an invitation.

Dustlike grounds bunched together at the bottom or side is a sum of money.

A triangle signifies good luck; so does an anchor or a horseshoe.

A half-moon or star to married people means a paying investment; to unmarried, a new lover or a sweetheart.

A pyramid is extremely lucky.

A square or oblong, new lands.

Flowers, a present—what it is depending on the shape—or the present may be flowers.

Leaves, sickness and death.

Fruit of any kind, health.

A hand, warning if the fingers are spread; if closed, an offer of friendship or marriage.

A cross signifies trouble. Any musical instrument, a wedding; bird, suit at law; cat, deception; dog, faithful friend; horse, important news; snake, an enemy; turtle, long life; rabbit, luck; house, offer of marriage or a removal; flag, some surprise or a journey to another country.

A heart is the most propitious sign of all, as it means happiness, fidelity, long life, health and wealth.

It is quite impossible for any insect to penetrate within the brain; but it might succeed in getting up inflammation within the ear passage. Pouring tepid water into the passage while the person lies on one side will bring the invader to the surface, when it can easily be removed. Travelers say that when water is not available it is a good plan to blow tobacco smoke into the ear passage. This will stupefy the insect and allow it to fall out when a suitable position is assumed.

Senator Depew praises the wit of women, and tells the story of a man who found that his wife had bought a few puffs of false hair. This displeased him. He hid in the hall one day, and, just as the lady was fixing the puffs upon her brow, he darted in upon her. "Mary," he said, reproachfully, "why do you put the hair of another woman upon your head?" "Why," his wife answered, "do you put the skin of another calf on your feet?"

"Tommy, did you give your brother the best part of the apple, as I told you to?" Tommy: "Yessum; I gave him the seeds. He can plant 'em and have a whole orchard."—Youth.

Passenger on the way to India: "Why do the stewards come in and open or shut the portholes at odd times during the day and night?" Second and better informed passenger: "My dear sir, they shut or open them when the tide rises or falls."



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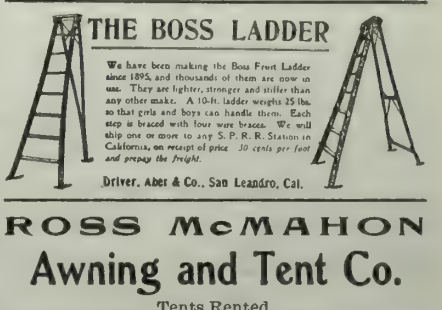
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The Markets.

San Francisco Produce Report.

San Francisco, July 26, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	July.	Sept.
Wednesday	$ 87⅛@ 84⅞	84⅞@ 82⅞
Thursday	90¼@ 87⅜	88 @ 85¼
Friday	93¼@ 90	—@—
Saturday	93¼@ 91⅞	90⅝@ 89
Monday	89½@ 87	89 @ 78
Tuesday	89 @ 87⅛	88⅛@ 86⅝

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	July.	Sept.
Wednesday	57½@57⅞	55⅞@54⅞
Thursday	57⅞@58	55¼@54⅝
Friday	58⅜@57½	56 @54⅞
Saturday	58¼@58⅜	55⅞@55¼
Monday	58 @58¼	54⅞@54⅝
Tuesday	57⅝@58½	54⅞@54⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 43½@1 43	$ —@—
Thursday	1 45 @1 44⅛	—@—
Friday	1 47 @1 46	—@—
Saturday	1 47⅜@1 46¾	—@—
Monday	1 46½@1 45	—@—
Tuesday	1 46½@1 44⅜	—@—

Wheat.

The black rust scare which sent the price of wheat up 4 or 5 cents in the Eastern market, for a short period during the current week, also made itself felt in the local grain market. December wheat went up to $1.47½ at one time, but has backed down again to the neighborhood of $1.45. There has been considerable trading about the latter figure and the general condition of a market for December wheat is firm. The spot market has been still further cleared up and it is now predicted that there will be very little remaining on hand in the local market. Late reports from the harvesting fields show that the wheat crop of Oregon, Washington and Idaho will be about 56,000,000 bushels. In every instance where cutting has begun the yield has been much heavier than that of the previous year. Expert opinion is to the effect that the wheat crop in these sections has never before been in as good condition as at present. Reports from California wheat sections are not so good. In some of the best wheat-growing sections of California crops with a fine growth of straw, which promised well earlier in the season, will not be cut at all. Other fields show a very poor quality. Quotations now given in California spot wheat are practically nominal, as there is very little left in stock.

California Milling	$1 55	@1 65
Cal No. 1 shipping, alongside	——	@——
Cal. No. 1 shipping	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.44½@1.43½.

Flour.

There has been some trading in flour in the local market and prices are ruling very firm at unchanged quotations. Receipts show a still further falling off and a slight advance was looked for early in the week, when the sharp rise in the price of December wheat took place. The reaction which occurred later left the market steady.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The spot market for barley has been very easy—almost dull—during the current week, with receipts coming in quite heavily. This creates a tendency for stocks to accumulate. Off grades have been selling for from 95c to 97½c, while No. 1 feed sold at from 97½ to $1.02½. At this price it is still above export value for brewing barley. There has been considerable speculation in December, a maximum figure of 98¾c being reached before a reaction occurred. December option is now 97½c and fairly steady. There is some talk that the next few weeks will see the price of spot barley sufficiently low to make it available for export buying, and at the rate stocks have accumulated during the past few days this is very probable. The quotations given on Chevalier are largely nominal, as there is little or no trading in this article.

Feed, No. 1 good to choice spot	$ 97½@1 02½	
Feed, fair to good	95 @ 97½	
Feed No. 1, December	97½@—	
Brewing, No. 1 to choice old	——	@——
Chevalier, No. 1 to choice	1 10	@1 15
Chevalier, common to fair	1 00	@1 07½

Oats.

Oat receipts have been fairly liberal, but a good local demand has kept stocks pretty well cleaned up and prices are being well maintained as quoted. Some holders continue to ask as high as $1.35 for choice reds, but there has been very little trading over $1.30. No new blacks have yet made their appearance, and for this reason quotations on blacks are nominal. Trading in futures has been fairly heavy during the current week at prices ranging around $1.35.

White oats, fancy feed	$ ——	@——
White, good to choice	——	@——
White, poor to fair	——	@——
Milling	——	@——
Black oats	1 45	@——
Red, choice new	1 30	@1 35
Red, fair	1 22½	@1 27½

Corn

Stocks of white corn are quite liberal, and as there is no further export demand there is but little call for this article. All local millers have stocks on hand. Yellow corn, however, is rather scarce, with a good demand for local consumption. Western receipts continue to be very light. The weakness in the corn market has become more apparent this week and prices show a decline of about 2½c.

Large White, good to choice	$1 40	@1 42½
Large Yellow	1 40	@1 42½
Small Yellow	1 47½	@1 52½
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	——	@——

Rye.

Receipts of rye show a considerable falling off. The demand, however, has been fairly good and stocks have been sufficiently reduced to cause an advance of 5c on the price paid for new rye in the local market. There is practically no old stock in the market at this time, the prices quoted being on the new crop. All arrivals up to this time indicate that the crop is of excellent quality but something under last year in quantity.

Good to choice	$1 45	@1 50

Buckwheat.

Trading in buckwheat continues very light, there being scarcely sufficient stock in the market to permit of any transactions. The mills have been the only buyers, and they are taking all that is offered at ruling prices. No change is anticipated until arrivals of new buckwheat begin to come in.

Good to choice	$2 25	@2 50

Beans.

Stocks of beans have been still further reduced by the active buying in the local market during the current week. Off grade pinks continue to change hands on the street and some orders are in for carload lots. Choice beans of all varieties are very scarce. Bayos are cleaning up rapidly and it is now foreseen that there will be none of this stock left in the market by the time the new crop matures. Blackeyes, kidneys and reds are practically out of the market. The movement of Limas has been rather slow at quotations.

Pea, good to choice, 100 lbs	$ ——	@——
Small White, good to choice	3 30	@3 50
Small White, damaged	1 50	@2 75
Large White	2 50	@2 85
Large White, damaged	1 50	@2 40
Pinks	3 25	@3 75
Pinks, damaged	1 25	@2 75
Bayos, good to choice	3 65	@4 00
Bayos, damaged	2 50	@3 50
Red Kidneys	3 50	@4 00
Reds	6 00	@7 50
Limas, good to choice	5 50	@5 65
Black-eye Beans	3 00	@3 15

Dried Peas.

Small shipments of new green peas continue to arrive in the local market, but their size is scarcely sufficient to warrant changes in prices. No new Salinas have as yet shown up. The old stock is very low and trading is light. Prices, however, continue firm at quotations. Prices named on some varieties are, however, practically nominal.

Green Peas, California	1 75	@2 25
Garbanzos, Large	3 25	@3 50
Garbanzos, Small	——	@——
Niles	1 50	@2 00

Hops.

The hop market remains without change nor is any change expected until the new crop commences to come in. Trading in old stocks has been very light, though it is now estimated that as many as 2500 bales are in first hands in California and about 23,000 bales throughout the entire coast. Some sales in futures are reported from Oregon this week and a few developed in local jobbing circles at 15@16c on the ranches. It is also claimed that a few spot sales were made in the local market at 16c.

Good to choice 1904 crop, nominal	16	@ 20

Wool.

The wool situation remains about the same. The spring shearing is now almost sold and the quotations given are merely nominal. There is practically no movement of a jobbing character, though an odd lot comes in occasionally and is quickly picked up at about the price quoted. There has been some buying in futures, but this movement has been very limited, most jobbers having retired from the active market to wait till the fall shearing commences.

SPRING.		
Humboldt and Mendocino	27	@30
Northern, free	25	@27
Northern, defective	22	@24
Middle County, free	25	@—
Middle County, defective	20	@22
San Joaquin and Southern, free	20	@22
San Joaquin and Southern, defective	15	@18
Oregon, valley	26	@28
Eastern Oregon	16	@22
Nevada	20	@24

Hay and Straw.

Receipts for the past week have been heavy, showing a total of 5600 tons in comparison with 5000 tons last week. These arrivals greatly exceed the consumption and heavy accumulations have resulted. Choice wheat hay holds its own fairly well and though weaker is quotably unchanged. Other varieties are weaker. The rush of receipts is expected to continue, though it will hardly increase, owing to lack of railroad facilities. Naturally the outlook is for a depressed market for some time to come.

Wheat, good to choice	$ 9 50	@ 14 00
Wheat and Oat	8 00	@ 12 00
Tame Oat, fair to choice	6 00	@ 10 00
Wild Oat	5 00	@ 8 00
Barley	6 50	@ 9 00
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 10 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	30	@ 50

Millstuffs.

The market is very firm on nearly all kinds of millstuffs, with the demand especially strong on bran and middlings. Stocks of these are very short, as are also stocks of rolled barley. A 50c advance is quoted for choice rolled barley, and from all indications an advance in the price of bran will take place within the next few days. Extra choice bran cannot now be had under $22.50.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 50
Middlings	25 50	@ 27 50
Shorts, Oregon	21 50	@ 23 00
Barley, Rolled, choice	22 00	@ 32 50
Cornmeal	30 00	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	33 50	@ 35 00
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

There has been a very light movement in seeds of all kinds during the current week. Stocks of most varieties are very light and Alfalfa and Trieste mustard are out of the market entirely, the quotations given being merely nominal. The new crop of mustard is now being threshed and prices are expected to open at about given quotations, but an advance is looked for later on, as the acreage in the Lompoc valley is not heavy and worms have attacked the plant in some sections.

Flax	$2 25	@ 2 50
Mustard, Yellow	3 25	@ 3 75
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa	——	@—
Canary	6¼	@ 6¼
Rape	2½	@ 3
Hemp	3½	@—
Timothy	5	@ 5½

Honey.

The receipts of honey continue to be large, but owing to a somewhat improved demand the market is slightly firmer though still far from active. The arrivals of new honey are of an excellent quality, and this, together with a slightly improved buying activity, has had a tendency toward advancing prices. Quotations given are for honey in this market.

Extracted, Water White	5	@ 5¼
Extracted, White	4¾	@ 5
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½	@ 4
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	9	@10
Amber Comb	7	@ 8

Beeswax.

There is practically no movement in wax, though quotations are claimed to be steady at former figures.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Live Stock and Meats.

The market generally is very easy, but with a slight strengthening in mutton. Prices on all varieties are being well maintained at quotations given.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	4½	@ 5
Beef, 3rd quality	3½	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@ 6
Hogs, large, hard, over 200 pounds	5¼	@ 5¾
Hogs, small, fat	5¾	@ 5⅞
Veal, large, ₱ lb	5	@ 7
Veal, small, ₱ lb	8	@ 9
Lamb, yearlings, ₱ lb	8	@—
Lamb, spring, ₱ lb	8	@ 9

Hides, Skins and Tallow.

The hide market is again very strong this week in response to the unusually stiff market East. Heavy native steers have been selling in Chicago at 15c, the highest price known for many years. In the local market dealers are talking of unchanged quotations, though prices are certainly up at least ½c on heavy and medium steers. There is some doubt about the permanence of the advance in Chicago: but, if the present situation continues East, prices on the coast will advance still further next week.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12½@—	11½@—
Medium Steers, 48 to 56 lbs	11½@—	10½@—
Light Steers, under 48 lbs	11 @—	10½@—
Heavy Cow Hides, over 50 lbs	11 @—	10 @—
Light Cow Hides, under 50 lbs	11 @—	10 @—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

The bag market continues very firm, though receipts are still coming in freely. Both prices and demand favor the seller. The stock on hand, though still very large, saw some reduction on account of brisk buying during the current week. Prices are ruling strong at the figures quoted.

Bean Bags	$ 5¼@—	
Fruit Sacks, cotton	6½@7½	
Fruit Sacks, jute, as to quality	6 @7¼	
Grain Bags, Calcutta, 22x36, spot	7½@7¾	
Grain Bags, Calcutta, buyer June-July	—@—	
Wool Sacks, 4-lb	33 @—	
Wool Sacks, 3¼ lb	30 @—	

Poultry.

Receipts of young stock continue heavy and prices are correspondingly low. Large hens and large young roosters are in good demand, but the price continues to be depressed, being affected by the low values of young stock. Appearing quotations show actual market sales.

Turkeys, choice Young, ₱ lb	$ 23	@ 25
Turkeys, live gobblers, ₱ lb	18	@ 19
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	5 50	@ 6 50
Roosters, old	4 00	@ 4 50
Roosters, young (full-grown)	4 50	@ 5 50
Fryers	3 00	@ 3 50
Broilers, large	2 50	@ 2 75
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	3 00	@ 3 50
Ducks, young, ₱ dozen	3 00	@ 4 00
Geese, ₱ pair	1 50	@—
Goslings, ₱ pair	1 50	@ 1 75
Pigeons, old, ₱ dozen	1 25	@—
Pigeons, young	1 25	@ 1 50

Butter.

The butter market is firmer at the advance noted. There have been rather light receipts for several days past, with a somewhat exceptional demand for this season of the year. It is not probable that there will be any further advance in butter for some time, as the stiffness of the market is having the effect of moving some quantities of storage butter also at an advance of 1c.

Creamery, extras, ₱ lb	24	@25
Creamery, firsts	22	@23
Creamery, seconds	20	@21
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	17	@18
Mixed Store	16	@17

Cheese.

Cheese is plentiful with arrivals showing up rather better than last week. The demand continues slow, though probably up to that of last week.

California, fancy flat, new	9½	@10
California, good to choice	9	@ 9¼
California, fair to good	9	@ 9¼
California, "Young Americas"	10	@12
Eastern, new	12½	@13½

Eggs.

The egg market continues very firm with a good request for selected stock. Prices show a still further advance. Receipts are fair and a good many storage eggs are making their appearance in the market. An advance of 2c is quoted on these grades.

California, select, large, white and fresh	25	@27
California, select, irregular color & size	23	@24
California, good to choice store	18	@20
Eastern firsts	20	@22
Eastern seconds	17	@18

Potatoes.

Receipts have been fairly large and of good quality. Prices are ruling firmer, however, owing to a steady demand. The last day or two there has been less activity owing both to easier buying and to lighter receipts. An advance is noted in California Burbanks and in Chile garnets.

Cal. Early Rose, ₱ cental	50	@ 60
Cal. Burbanks, ₱ cental	75	@ 1 00

Salinas Burbanks	80	@	1 00
Chile Garnet, ℔ cental	50	@	60
White Rose, ℔ cental	65	@	75

Vegetables.

The vegetable market is somewhat stronger than at last report. There is no asparagus in the market. A few new Lima beans are to be had at 4 cents per pound. Tomatoes show a considerable gain in price and onions a loss. The large amount of the latter, which were grown with a veiw to the export trade with Australia, now seem likely to become a drug on the market, owing to the fact that exporters in order to place their goods in the Australian market must compete with Japanese traders.

Asparagus, No. 1 to choice, ℔ lb	—	@	—
Asparagus, No. 2, ℔ lb	—	@	—
Beans, Lima, ℔ lb	4	@	—
Beans, String, ℔ lb	1½	@	3
Beans, Wax, ℔ lb	2	@	3
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ crate	—	@	1 25
Egg Plant, ℔ lb	5	@	8
Garlic, ℔ lb	4	@	5
Mushrooms, ℔ lb	—	@	—
Onions, New Yellow Danvers, ℔ ctl	90	@	1 10
Onions, New Red, ℔ ctl	60	@	75
Peas, Green, ℔ sack	1 00	@	1 50
Peppers, Bell, ℔ lb	8	@	10
Peppers, Green, ℔ lb	10	@	15
Rhubarb, ℔ box	50	@	75
Summer Squash, per large box	30	@	—
Tomatoes, ℔ box or crate	50	@	80

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross

Fresh Fruits.

The market has been considerably strengthened during the current week. The weather has been very favorable and the improved market is the result. Receipts have been large, but owing to the increased demand prices have been well maintained and have even shown slight advances in some varieties. Apricots in boxes show a good advance, now ranging from 40 cents for off grade to 90 cents for choice. Currants are now out of the market entirely and watermelons are very cheap; the last quotations being 75 cents @ $1 per dozen.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 25
Apples, good to choice, ℔ 50-lb. box	75	@	90
Apples, fair to good, ℔ 40-lb box	35	@	60
Apricots, in bulk, ℔ ton	10 00	@	20 00
Apricots, ℔ box	40	@	90
Blackberries, ℔ chest	1 25	@	2 50
Cantaloupes, pony crate	1 35	@	—
Cantaloupes, ℔ standard crate	2 00	@	—
Crabapples, ℔ large box	50	@	65
Currants, ℔ chest	—	@	—
Figs, ℔ one layer	50	@	75
Figs, ℔ two layer	1 25	@	1 50
Gooseberries, English, ℔ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ℔ crate	1 00	@	—
Huckleberries, ℔ lb	12½	@	—
Loganberries, ℔ chest	3 50	@	5 00
Peaches, ℔ large box	50	@	85
Peaches, ℔ small box	35	@	50
Pears, Bartlett, fair to choice, 40-lb box	1 50	@	1 75
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ℔ crate	40	@	60
Plums, ordinary, ℔ box	30	@	50
Plums, Simoni, ℔ crate	65	@	75
Prunes, Tragedy, ℔ crate	40	@	65
Raspberries, ℔ chest	3 00	@	5 00
Strawberries, Longworth, ℔ chest	2 00	@	4 00
Strawberries, large var., ℔ chest	2 00	@	2 50
Watermelons, ℔ doz	75	@	1 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The market for dried fruits is now in active state and heavy sales are reported from all interior valleys where drying is now under way. The pack of apricots is about sold and growers have received from 6c to 6½c choice basis. Peaches are selling freely and 6½c choice basis is being secured with a premium for Muirs. Prunes are in demand at the 3c basis for the four sizes Santa Claras, and some growers are asking 3½c. The 1904 pack is being cleaned up at a 2½c rate and some heavy exports to Germany are being made. Dried apples are in demand, but are very scarce; choice sun-dried are selling at 2½@2¾c.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	6
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	5	@	6½
Apricots, Royal, fancy	7	@	7½
Figs, 10-lb box, 1-lb cartons	50	@	55
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	—	@	4½
Peaches, unpeeled, good to choice	5½	@	6¼
Peaches, unpeeled, fancy to extra fancy	7	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	4	@	5

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4¼@4½c; 50-60s, 3@3¼c; 60-70s, 2½@2¾c; 70-80s, 2@2¼c; 80-90s, 1¾@2c; 90-100s, 1⅝@1¾c; small, 1¼@1½c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	1½	@	2½

Raisins.

The raisin market has been greatly affected by the organization of the Association, which went into effect Friday, July 21st, and which comprises a combination of growers' and packers' interests. The effect has been to make a stronger market, with firmer prices on both old and new crop. There has been some inquiry for spot, but no extensive movement has developed. The prices given are those now ruling at Fresno.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	3¾	@	—c
Fancy, 16-oz. Seeded	6	@	6¼c
Choice, 16-oz. Seeded	5	@	c
Fancy, 12-oz. Seeded	5½	@	c
Choice, 12-oz. Seeded	4½	@	c

Citrus Fruits.

There is little change in the Orange market since last reports. Mandarins are unquotable, there being none of any grade in the market. Lemons and Grape Fruit are slightly weaker and Limes are steady at quotations given.

Oranges, Navels, choice to fancy, ℔ bx	—	@	—
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	—	@	—
Oranges, Valencias, ℔ box	2 25	@	3 50
Oranges, Mandarins, small	—	@	—
Lemons, California, select, ℔ box	2 75	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	1 50	@	2 50
Limes, ℔ box	5 00	@	8 00

Nuts.

Reports indicate that the coming walnut crop will be considerably short of the average and that the total yield will probably not exceed 500 cars. The crop of almonds promises to be larger than usual. Reliable judgments as to the quality of the coming crops of both walnuts and almonds do not seem to be at hand. Stocks of nuts now on hand are running very low and holders are very firm as to prices. The new crop of soft-shell almonds is expected to open up at about 9@10c and the crop of hard shells at 5@7c.

Chestnuts, Italian, ℔ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	11	@	14
Languedoc Almonds	8	@	11
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½

Wine.

There is but little movement in old wine, the tendency being to await the coming vintage. Conflicting reports are coming in in regard to the wine grape crop, the general idea being that it will be below the average. The large wine makers are, however, talking low prices on the ground of a large carryover of wine.

THE VETERINARIAN.

Answers to Queries.

By E. J. CREELY, D. V. S., Dean of San Francisco Veterinary College.

THAT CASE OF ACUTE INDIGESTION.

TO THE EDITOR:—I wish to thank Dr. Creely for the excellent advice he gave in answer to my request in the PACIFIC RURAL PRESS of July 15, to which we may thank the recovery and present good condition of our sick mare. Will he kindly complete the good work by telling us if we must continue giving the medicine when the first twelve powders are used? Can we safely feed green cornstalks? Can we do something to prevent a relapse? Can the mare do some work daily?—E. C. W. MACDONALD, Aptos.

RESPONSE BY DR. CREELY.

Continue the medicine for about one month, also the powdered gum acacia. Continue feeding indefinitely one kind of hay and the dry rolled oats, a bran mash once or twice a week in which has been placed a tablespoonful of granulated saltpeter. Continue feeding salt plentifully, not only to this mare but to whatever stock you may own. Regarding the safe feeding of green cornstalks, avoid it as you would poison, for this mare only. The continuation until recovery of this treatment will prevent a relapse. The mare should be put to work at once.

TREATMENT FOR NEEDLE WORMS.

TO THE EDITOR:—Will you kindly tell me, through Dr. Creely, what I should do to rid my mare of "Ascaris, or needle worm"? She is falling off in flesh, although I feed her all she can eat. I am led to think it is the needle worm, because she rubs her tail on the fence half the time she is in the corral. Also, what is good for chronic kidney trouble? She passes thick scanty urine.—OWNER, Vacaville.

ANSWER BY DR. CREELY.

Take quassia chips one-half pound, water one gallon; boil about twenty minutes and inject one pint of the mixture daily for pin worms.

After starving twenty-four hours, give raw linseed oil one pint, turpentine three ounces, santonine one drahm. For thick scanty urine, give one tablespoonful of saltpetre each night for a week, also one teaspoonful of powdered buchu leaves each morning.

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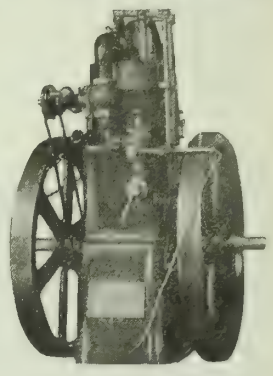
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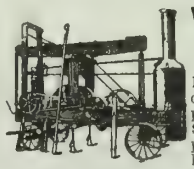
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THE IRRIGATOR.

Reclamation of Arid Lands in Nevada.

It was long since recognized that in most instances the arid valley lands of the great basin, and those of the Pacific coast States, which were dry and apparently sterile, only required artificial irrigation to render them productive, and that they really were wonderfully fertile lands, if this artificial irrigation could only be applied. In many instances the matter has been taken up by the citizens of certain counties and the so-called irrigation districts formed. The lands within these districts were bonded, or the necessary financial aid was provided in some other manner, and irrigation systems, some of them of considerable magnitude, were built. Dams costing hundreds of thousands of dollars were constructed, behind which artificial reservoirs were formed, the waters of winter and spring being impounded, thus creating a supply for irrigation during the long dry summer months. Some of these great dams have been doubly useful, the water being first utilized to gener ate power, which has been distributed electrically to mines and to other industries, and the water later used on the ranches, orchards and vineyards of the valleys.

Although some of these irrigation schemes were of considerable magnitude, there were other similar propositions of undoubted merit, but which could not be handled in the manner above referred to, for the reason that no settlers occupied the land and few would be willing to make their homes there and pledge themselves to pay for the improvements necessary to impound large amounts of water and to convey it many miles in pipes, flumes and ditches to the arid land. The proposition was too large for a district, a county or even a State. Consequently the Government has taken up a number of these larger projects in Arizona, California, Nevada, Colorado, and also east of the Rocky mountains. One of the most important of these is the reclamation of a large area in western Nevada. L. H. Taylor, engineer in charge of this great enterprise, has contributed an interesting account of the work to "The Progressive West" of Reno, Nev.—a new publication devoted to Nevada's interests—from which the following as well as the illustrations are taken:

The passage by Congress of the Act of June 17, 1902, provided Nevada's opportunity. In the early part of September, less than three months after the approval by the President of the United States of the National irrigation law, the engineers of the U. S. Geological Survey were in the field in Nevada making exploration for, and studying the feasibility of, an irrigation system, which should utilize the great volume of water flowing to waste through the rivers of the western part of the State, for reclaiming the adjacent deserts.

The first investigations of the engineers were directed to the upper portion of the Truckee river, and the valleys to the north and northeast of the city of Reno, embracing some 73,000 acres of rich land.

Exhaustive surveys were made in this district during the fall and winter, and close estimates of the cost of the requisite canals were made. It was found, however, that the cost of construction, while not prohibitive, would be relatively high, and it was deemed inadvisable to initiate work at a point where the unit cost, or cost per acre, of reclamation approached too closely the value of the reclaimed land. A preliminary investigation of the possibilities for irrigation in the vicinity of Wadsworth and in Carson Sink valley was, therefore, begun in January, 1903. Before the opening of spring, it had been determined that a large acreage—over 200,000 acres—could be watered in that region at a comparatively small expense, and it was decided to begin construction at the earliest practicable date.

The definite location of what is now known as the main Truckee canal, designed to convey Truckee river water from a point 24 miles east of Reno, a distance of 31 miles, to Carson river, was begun in April, 1903.

Bids for its construction were asked for in May of that year, opened on July 15th, and on August 28th and September 3d contracts were executed with E. B. & A. L. Stone Co. and C. A. Warren & Co., respectively, both of San Francisco, Cal., for its construction. These were the first construction contracts awarded under the Reclamation law in the United States.

This main canal has a capacity for the first 6 miles of its course for 1400 cubic feet per second—70,000 miner's inches under 4-inch pressure—and, for the remainder of its course, of 1200 cubic feet per second. The depth of water will be uniformly 13 feet, and the top of banks is 2 feet above the high-water line. The width at the top varies from 24 to 63 feet, the narrow part being lined with Portland cement concrete, and having a heavy grade. Nearly 2 miles of the canal, exclusive of tunnels, are lined with concrete.

There are three tunnels of 308, 900 and 1515 feet length, respectively. All are lined with concrete, 12 feet wide, and about 16 feet high, to crown of arch inside.

The main Truckee canal will discharge its water into Carson river at the site of the lower Carson reservoir, about 9 miles west of Leetville, in Churchill county. Thence, the water flows in a channel of that stream about 4½ miles to the diversion dam at the head of the distributing system.

This dam is a concrete structure, built to last for all time, which directs the water into two main distributing canals on either side of the river. That on the south has a bed width of 22 feet, a top width of 78 feet, and carries 12 feet of water, the capacity being 1500 cubic feet per second.

The canal on the north side is 13 feet wide at bottom, 45 feet wide at top, carries 6½ feet depth of water, and has a capacity of 450 cubic feet per second.

At present, these two canals are completed for a total length of 38 miles. With their main branches, they will ultimately have a total length of over 90 miles, while the laterals and drain ditches to be constructed in Carson Sink valley alone will aggregate 1200 miles. Already, nearly 200 miles of these have been finished, and before the end of July, 1905, nearly 300 miles now under construction will be ready for use, and will distribute water to 50,000 acres of land.

This part of the irrigation system comprises the most difficult and expensive portion of the initial item of the Truckee-Carson project, and when finished, will have cost about $1,750,000. The extensions of this, in Carson Sink valley, completing the initial item, and bringing under irrigation not less than 200,000 acres of land, will increase the total expense to about $2,600,000, and consume about two years' time.

Further extensions of the Truckee-Carson project to a total area of, approximately, 375,000 acres of land, involve the construction of expensive storage reservoirs, and costly high-line canals. This work has been planned, however, and as the lands to be immediately watered are being rapidly taken by homeseekers, funds for the completion of the work will be provided by the payments to be made on the water rights therefor.

It is estimated that the entire undertaking can thus be completed within nine years, the total cost being estimated at approximately $9,000,000.

The Lands to Be Irrigated and Distributed to Homeseekers.—The number of acres of land ultimately designed to be irrigated is from 300,000 to 400,000 acres, of which 200,000 will be supplied within the next three years. Of this acreage, it is estimated that about 40,000 acres will be irrigated during the present year.

The land is located in a number of valleys along the Truckee and Carson rivers, extending on each side from the Central Pacific railroad, the distance being in some places 25 miles from the road.

The main body of 200,000 acres to be irrigated first is in the Carson Sink valley, south of the railroad. Some of the land is immediately adjacent, while the farthest extends about 25 miles from the railway.

(To be Concluded Next Issue.)



The Construction Camp on the Reclamation Ditch at Derby, Nevada.

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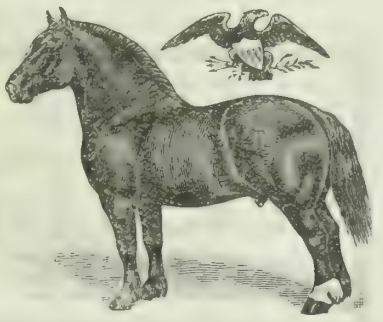
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Patrons of Husbandry.

British Co-operative Farming.

From UNITED STATES CONSUL F. W. MAHIN, Nottingham, England.

The Agricultural Organization Society is a body formed four years ago to promote reciprocal aid among British farmers, and statements at the annual meeting show that its object is being successfully carried out. The number of branch societies has largely increased and is now 113, embracing thirty-three counties, while the membership has advanced from 4500, in 1904, to 6500 now.

One of the important aims of the society is the cheapening of freight rates, which have been excessively burdensome in this country to the small shipper. This is being done with success by combining farm products in wholesale quantities. General working expenses have been reduced and in some cases the prices of products have been increased through the harmonious working of the society. It also enables members to buy in wholesale quantities from one central point, instead of dribbling out small orders to a large number of producers. Farmers can buy their supplies and implements at wholesale prices, and this is considered so important that prophets are found who see in it the redemption of British agriculture from the low estate to which it has declined.

Various schemes for developing and broadening the society's work are proposed, notably one touching dairying. At present the butter produced on different farms does not blend, and the product is, generally speaking, without a standard. The society proposes a central factory, where milk is to be sent and wherefrom a product of standard quality marketable at the highest possible price for butter would result. The seller would thus be assured of a buyer in the factory, and the consumer would be assured of a quality on which he could safely rely.

Through the efforts of this society motor transports have been placed on some country roads by railway and other companies and are carrying farm products at rates satisfactory to the producers. It is hoped to extend these transports generally over the Kingdom.

FRUIT MARKETING.

Chinese Trade Needs More Costly Packages.

Consul Anderson, at Amoy, China, makes complaint of the bad packing of American goods for that market, and calls attention to the difference between California and English methods in packing figs and nuts. He says:

"Fig producers of California are putting up a fine class of goods and the goods will be appreciated by the people here, but they are not salable, sent out as they usually are, and at least after they have gone through several hands to smaller ports. English packed figs are forwarded in jars or bottles, two-pound bottles packed in London retailing here for about 73 cents gold. Of course, the figs are imported in London, go through several hands and are shipped under many other disadvantages. California producers ought to be able to put up figs at far less cost, in better shape, of better quality and forwarded more directly to the market. Nuts, especially shelled almonds, are also sent out in bottles Jordan almonds are sold in one-fourth-pound bottles at 20 cents gold, and the half-pound tin of English packing retails at a little over 40 cents, gold. A two-pound-bottle of Sultana raisins retails for about 60 cents gold."

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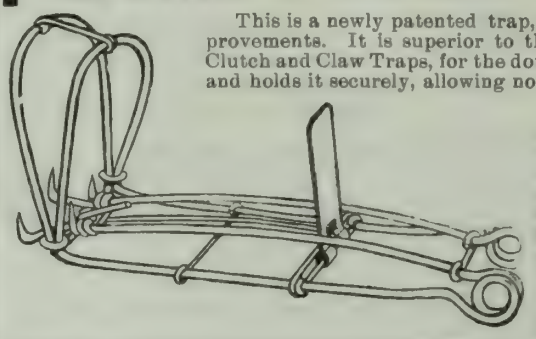
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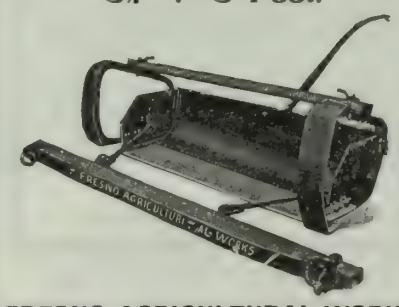
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THE DAIRY.

Care of Cow at Calving Time.

We find the following very acceptable advice in Bulletin 126 of the Kansas Experiment Station: Strong, thrifty calves can not be expected from cows that have received poor feed and poor care previous to calving time. The cow must be supplied with wholesome and nutritious feed, containing the elements that are necessary to the proper development of bone and muscle in the fœtus. It is better for the cow, and, we believe, better for her record in the production of milk and butter fat, if she can go dry for six or eight weeks previous to calving. If it is impossible to dry her up without injuring the udder, continuous milking should be practiced.

Where the cow has access to good pasture with plenty of spring water, she needs little or no attention until two or three days before calving. If she has secluded, shady and otherwise comfortable quarters, separate from the other cattle, and is carefully watched by an attendant, she may need no other attention, until after the calf is dropped. Sometimes luxuriant pastures will stimulate heavy milkers to produce too much milk prior to calving, in which case the supply of feed should be reduced, and in extreme cases the milk removed before calving.

When kept on dry feed, care should be taken to provide plenty of succulence. Ensilage and roots serve an excellent purpose, the object being to keep the bowels loose. When alfalfa or clover hay is used for roughness very little grain is necessary. With less nitrogenous rough feeds, a mixture of two-thirds bran and one-third oilmeal is excellent. Soy beans may be used as a substitute for oilmeal.

In cool or cold weather the cow should be placed in a box stall, well lighted, with plenty of ventilation. When the calf is dropped it is well to blanket the cow until she regains her normal condition. In the absence of anything better, gunny sacks sewed together will do very well.

Light, loosening feeds, water from which the chill has been taken off should be given. Cold water is liable to cause contraction of the womb and retention of the afterbirth. If the latter is not discharged in from twenty-four to forty-eight hours, it should be removed. If the udder is heated and caked, it is advisable to milk the cow frequently, though not quite dry, rubbing with a flannel cloth, dipped in as hot water as the hand will bear, after which the udder should be rubbed dry and treated with camphor, olive oil, or camphorated vaseline. If there are any signs of constipation, it is well to administer from one and one-half to two pounds of Epsom salts dissolved in water. All these points will add materially in keeping the cow in a good, healthy condition, and consequently give the calf a good, healthy start.

As soon as the calf is licked dry by its mother, it should have strength enough to rise and suck; if it has not, it should be assisted. The calf may be taken away from its mother after its first meal, or, it preferred, can be left with the cow until the milk is good. It is easier to teach the calf to drink, if it is taken away early. Our experience is that if the calf is taken away at once, or when four or five days old, it will make good gains the first week, but if left two or three weeks, the first seven days after weaning will be a losing period. If the cow's udder is caked, it is desirable to leave the calf with her, as the rubbing of the calf tends to alleviate the inflammation.

Healing Qualities of Egg Membrane.

At a recent session of the Therapeutical Association of Paris, Doctor Amat lectured on the use of the membrane of eggs in the treatment of wounds. He has observed for some time the good results of placing these membranes upon the surface of wounds, and reports two new cases, that of a young girl suffering from a burn on her foot, and a man, 40 years old, with a large ulcer on his leg. Both wounds were in process of healing and were covered with healthy granulations. The surgeon overspread them with six or eight pieces of the membrane of eggs, which was covered with tin foil and fastened with dry antiseptic bandages. After four days the bandages and tin foil were removed, and it was shown that the membrane of the egg had partly grown into the tissues and had caused the growing of a good skin. That the egg membrane had contributed much to the healing process was demonstrated in the further course of treatment. It seems, however, that the membrane does not always adhere. The process of cicatrization is not only hastened, but the wound heals exceptionally well and leaves but few perceptible traces. As these membranes are procurable everywhere, their use should attract more attention.

Thought and Disease.

Thousands of people actually think themselves to death every year by allowing their minds to dwell on morbid subjects.

The idea that one has some incipient disease in one's system, the thought of financial ruin, that one is getting on in life without improving prospects—any of these or a thousand similar thoughts may carry a healthy man to a premature grave. A melancholy thought that fixes itself upon one's mind needs as much doctoring as physical disease. It needs to be eradicated from the mind or it will have just the same result as a neglected disease would have.

Every melancholy thought, every morbid notion and every nagging worry should be resisted to the utmost, and the patient should be protected by cheerful thoughts, of which there is a bountiful store in every one's possession. Bright companions are cheaper than drugs and plasters.

NOTICE.

The Annual Meeting of the Stockholders of the

GRANGERS' BUSINESS ASSOCIATION,

a corporation, for the election of a Board of Directors, and for the transaction of such other business as may properly come before it, will be held at No. 309 California St., San Francisco, at 11 o'clock A.M. Tuesday, the 8th day of August, 1905.



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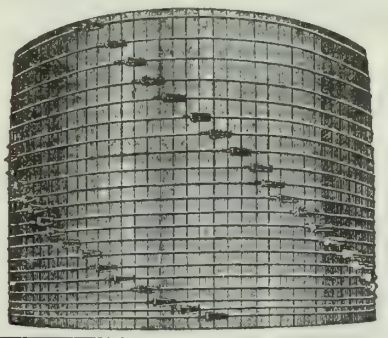
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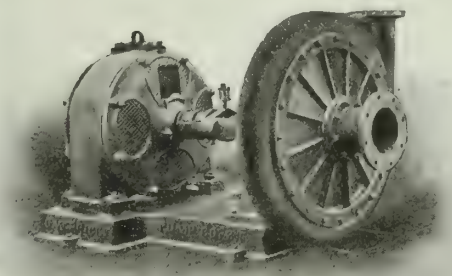


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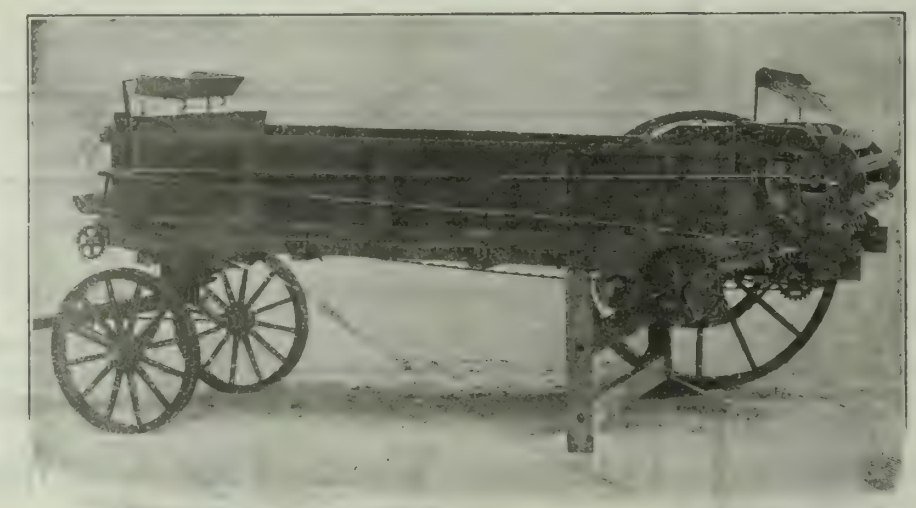


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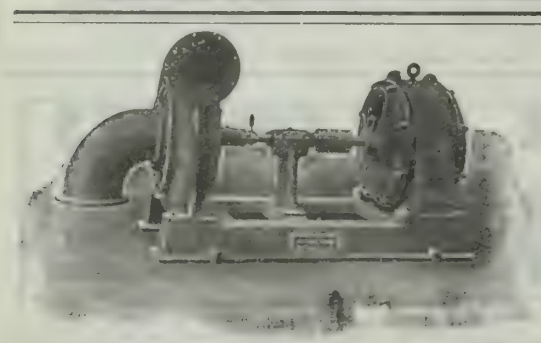
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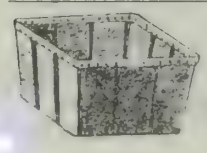
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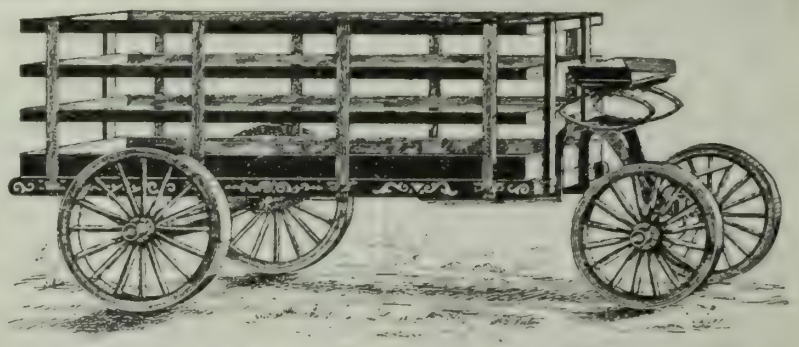
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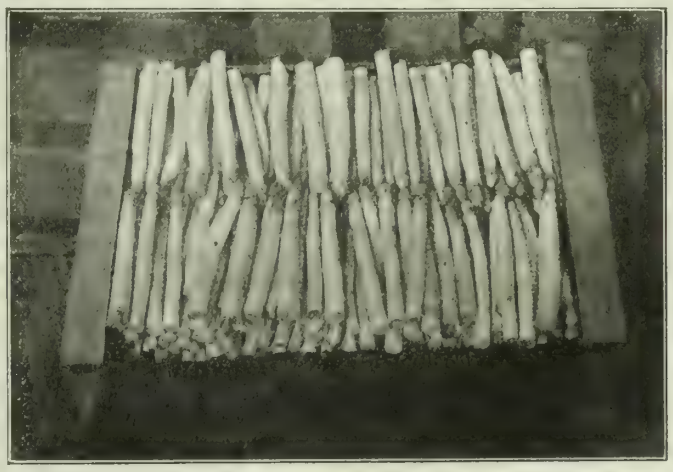
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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 6. SAN FRANCISCO, SATURDAY, AUGUST 5, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

How Asparagus Grows in California.

We return this week to the reclaimed tule lands along the Sacramento and San Joaquin rivers, and illustrate the soils which are thus added to the productive area of the State by the growth of one of their most unique products, asparagus. Those unacquainted with these lands are sometimes at a loss to understand how the asparagus canners can get so many inches of clear, white and delicious esculent. It is owing to the depth and lightness of the soils of these islands. Here is found naturally the soil characters which favor size, quickness of growth and whiteness of the product in vastly greater degree than can be obtained by the most expensive improvement of ordinary garden loam by the addition of decomposed manure, sand, etc., which the books on asparagus growing prescribe. All these things are good where one has to use them, but no one can undertake to secure results with them in competition with the natural combination of peat and sediment which the river overflow has formed upon these reclaimed lands. The excellent work of Prof. R. E. Smith of the University of California Experiment Station shows that where the plantations are properly handled, so that the dry air of the California summer circulates freely through the top growth, the inroads of the natural enemy of the plant, asparagus rust, can be satisfactorily held in check by proper treatment, and that the climate is the ally of the grower in his conflict with this enemy. From Prof. Smith's bulletin upon asparagus and asparagus rust we take a group of pictures, which illustrate well what we have claimed. First is a box of asparagus as it goes from the field to the city markets or to the canneries. Next is a sectional view showing how the long, white shoot makes its way from the root crown through its deep, light covering. Next are two asparagus cutters at work with their long gouges, which enable them to reach deep into the light covering to the base of the shoot. Next is a view of the whole field in the cutting season, showing how the light soil is crowded with proper horse tools to a great depth over the root crowns, so that the shoots must be long to reach the light. Next is the field after top growth is permitted in the summer, with fresh shoots still appearing, though the top has advanced far in its development, and, last of all, is a view of the field with its characteristic summer garb of large mounds of top growth. When growers of asparagus on ordinary loam soil study these pictures carefully they can better appreciate why it is that the money invested in growing and canning this product on reclaimed tule lands has advanced into the millions.



A California Box of Asparagus.



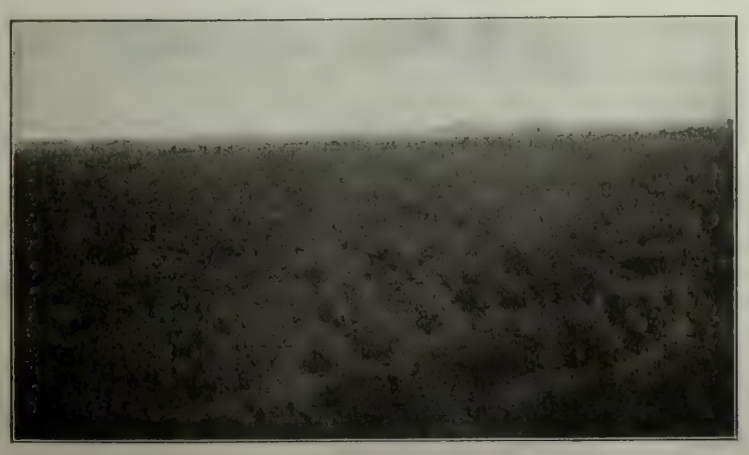
How Long, White Asparagus Grows.



New Shoots After Top Growth Has Advanced.



Cutting Asparagus Through Its Deep, Light Covering.



Summer Aspect of an Asparagus Field.



Field Properly Ridged for the Crop.

California has a climate splendidly suited to asparagus. The winter is warm enough to start the plant shooting in February, and all through the four months following growing conditions of heat and moisture are splendid. When the heat and drouth come on in June the plant has made its crop, and may then make top growth for its own strengthening, and this it quickly does.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, AUGUST 5, 1905.

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The Week.

Growing and harvesting conditions have been favorable this week, the slight deficiency in heat and the prevailing cloudiness being helpful to late summer crops, though at points on the coast a little more sunshine would be desirable for other affairs. The eastward movement of fruit has continued brisk, with daily shipments of from thirty-two to fifty-two carloads and prices in the Eastern markets very satisfactory, quite a number of carloads bringing over $1400 each and few going below $1000 each. These prices are fit to encourage the fruit interest widely.

One of the most notable events of the week has been the sensational discovery of wrong doing in the Department of Agriculture. We recently emphasized the fact that business interests were following closely on the heels of scientific workers and turning their results to account. It appears now, that in some cases they have followed too closely and have corrupted the workers by offering to buy their influence and results. This is a very unfortunate affair. We have mistrusted the unwarranted and sensational publications being made in popular magazines about discoveries in agricultural science, and have wondered how it came about that such exaggerated claims and misleading inferences were so systematically and industriously circulated. It seems likely now that the commercial interest had been working all along—working the investigator by offering him a share of the profits of business exploitation; working the magazines so as to ardently inflame the public and create a demand. The overdrawn accounts of the services of the nitrogen-gathering bacteria, which led readers to believe that everyone needed them and could multiply all crops with them everywhere, is now followed by the disclosure that the public worker in the employ of the Government was interested in the profits of the unholy traffic, and in the light of the disclosures he has resigned. It has also appeared that the crop statistics have been prematurely peddled out to gamblers in futures, and the result is that this whole work of the Department has been reorganized and placed in new hands. These things are unfortunate, but if there is wrong it is better out than under cover.

One of the most unfortunate aspects of these affairs is that those who do not desire that sellers should know as much about coming crops as buyers have seized upon the occasion to impeach the whole institution of Government work for farmers and Secretary Wilson who has brought it about by his diligence and wisdom in behalf of the agricultural interests. It is manifestly to the interest of produce gamblers to break down the Government reports and to operate with the light all on their side and producers in the dark. They may be expected to add to the seriousness of the present situation all the sensations they can. It behooves the agricultural interest to support the Government in its interests in their behalf. It is undoubtedly necessary for Secretary Wilson to do a little housecleaning, and he is apparently very quick and thorough about it and he will, no doubt, make improvements with the added wisdom which is born of experience. The work of the Department has been of such wide value and has such great capabilities that it should not be forced to suffer unduly from the disclosure of individual frailty. Such human weakness crops out in all public undertakings and probably always will, just as it does in the most carefully managed private concerns. Unless something more than has yet been disclosed appears, producers should support the Department in its present experience and should discriminate carefully between charges and reflections justly made and those which are undertaken for political or commercial reasons.

Wheat has strengthened from last week's oscillation and is now steady, with light dealings, and export aspects not yet determined at this point. Barley has advanced, futures show much confidence, and holders are not disposed to sell. In barley, also, export interests do not figure yet. Corn and oats are easier, while rye is still scarce and held high. Beans are unchanged, but still active. Bran and middlings are firm and middlings low in stock because of sharp demand. Hay continues to arrive freely and hard to move currently. Mutton has the advantage this week and seems to improve, while other meats are easy. Butter has gone back a little on the higher grades and some is coming out of storage. Cheese has improved and eggs have gone ahead on the best and backward on the lower grades. Poultry is still out of shape. There are now plenty of good potatoes, but prices are not satisfactory. Onions are also in the shade and the demand slack. Oranges are in small stock and few needed, but lemons and pomelos are improved. Deciduous fruit supplies are lessening and improving in price. Dried fruit prices are advancing and the demand is good. Nuts are firmly held and reports of a good crop of almonds and scant one of walnuts continue. Honey is quiet with no shipping this week. Hops are waiting for the new crop on which there is still a sharp issue between the prophets on either side. Wool is also waiting, there being no reports even of recent contracts.

The visit of Prof. L. H. Bailey of Cornell University to California this week is an item which many of our readers will note with interest. Prof. Bailey has been talking at the summer session of the State University about the promotion of nature study and the elements of agriculture into the curricula of the common schools, and the teachers assembled at Berkeley are deriving many progressive ideas and practical suggestions therefrom. His present work in California will be very helpful to our agriculturists, who are earnestly working for the improvement of our rural schools.

State forestry work is progressing along the lines indicated in the reports recently published in our columns of the new organization at Sacramento. The Union says that the fire regulation warnings are nearly complete, and soon will be posted in all forests and on all public roads leading to forests, to catch the eye of those from whose carelessness danger may arise. Mr. Allen is compiling all forest laws in this State, and when that bulletin is issued he will take the field and get organization started in all counties where it is deemed essential. Then will follow the selection of fire wardens under the direction of the State Board of Forestry, and as many other wardens as the counties may be disposed to maintain.

QUERIES AND REPLIES.

Nitrogen-Gathering Bacteria.

To the Editor:—How can I get the fullest information concerning results gained by the introduction of nitrogen-gathering bacteria in the growing of legumes? I have under trial some nitro culture from the seedsmen and I wish to grow quite extensively alfalfa and beans. What is your idea about it?—Reader, Contra Costa County.

We have discussed this proposition quite fully in our columns already. We can add to what we have previously said that the fullest statement concerning the nitrogen-gathering bacteria can be had by writing to Dr. B. T. Galloway, Chief of Bureau of Plant Industry, United States Department of Agriculture, Washington, D. C., and asking for these publications, viz., bulletin No. 71, "Soil Inoculation for Legumes," and bulletin No. 72, part 4, "Inoculation of Soil With Nitrogen-Fixing Bacteria." These publications will give full explanation of what should be expected from the introduction of these germs. Whether all of these will be realized or not can not yet be told, because experiments have not been sufficiently continued. It seems clear enough that in most parts of California the requisite germ must be present in the soil, because alfalfa grows so continuously and well, and, on the other hand, there are other soils in which some help of this kind seems to be needed. You can judge much from your own experience, because the nitro-culture distributed by the seedsmen is the right thing, and your observation upon it would, therefore, show how you should proceed in the future. The same thing is true in growing beans. We are making a commercial product of 1000 carloads or more without any addition of bacteria, and still, in some places, it seems that the beans need some assistance. This is a matter which must be worked out in the light of longer experience and fuller observation.

Diabroticas and Plant Bugs.

To the Editor:—I enclose you specimens of three bugs that are eating everything in my garden and I am not able to find anything that will kill them. I tried arsenate of lead and they got fat on it. Since then I have been using strong soap suds and coal oil, but if I get it strong enough with oil to kill the bugs it kills the plants. I have asked numerous neighbors and farmers around here but they cannot tell me what to do. They do not attempt to raise anything the bugs eat, because of the trouble they have had in the past. There is undoubtedly a remedy. Please tell me what it is.—Gardener, Suisun.

You have three hard customers—two species of Diabrotica beetles, which ought to be poisoned by what they eat; but, as you say, they refuse to yield to poisons which kill plant-eating insects generally. The third is a plant bug which you cannot poison, because he sucks from the interior tissue of the plant and cannot bite the outside where the poison is. If you make a good emulsion you can use coal oil very strong—you can take just twice as much oil as suds, and by long and violent agitation, such as pumping the liquid back into itself until it reaches a condition like clabbered milk. After that the oil will not separate on dilution with ten times or more of its bulk of water. It is the free oil which injures your plants. If you cannot work this, try smoking with damp straw or manure, building the fires to the windward, so the wind will blow the smoke in dense masses upon plants. This will often drive the insects over to your non-smoking neighbors.

Coarse Manure for Heavy Soil.

To the Editor:—I have half an acre of ground, the soil of which seems to be partly adobe. I wish to raise vegetables and fruit for my own use. I can get all the manure I desire from a stable of twelve horses. The bedding used is shavings. Would it be advisable or not to use this manure and whether or not it would have a tendency to change the present condition of the soil?—Amateur, Oakland.

The manure which you describe will be of very great assistance to you in raising fruit and vegetables on the soil which you describe, because it will not only add plant food but have a tendency to overcome the refractory nature of the adobe, which is often a very great obstacle with most satisfactory work, especially in the line of vegetable growing. While such manure would be of doubtful value upon a light, sandy loam, there can be no doubt of its usefulness on a soil inclining toward the adobe type.

A Rational Orchard Program.

To the Editor:—I have fifty acres of land planted last year to orange trees. The land is, as a rule, a gravelly soil, with little or no sand in it, but in some places there are small tracts that are quite sandy and loose and a very comfortable soil to work in. In sinking our well we found the ground was filled with boulders, large and small, so far as we went down, which was over 200 feet. The soil, generally speaking, is of a cementy character, that is, when wet; if not cultivated at just the right time, it runs together and becomes very hard, and when it is wet, down to a crust that has formed 5 or 6 inches below the surface, it gets very soft. The land was planted to olive trees about sixteen years ago, and since then the olive trees were constantly cultivated but never irrigated or manured, and probably cultivated all the time to about the same depth, which did not exceed perhaps 4 or 5 inches; but the land was plowed some deeper than that, perhaps 6 inches. From this cause, or some other, there has formed, beginning at a depth of say 5 inches, a crust which is about 6 inches thick and very hard. Below that crust the ground is not so hard. The olive trees only produce once in several years and then only in small quantities; therefore I took them out and put in orange trees instead. At the time of planting the orange trees I gave each of them two pounds of bat guano, and later some stable manure, and this year about three pounds to each tree of commercial fertilizer, tankage. The trees have made fine growth and are looking finely now, but the soil is very difficult and expensive to handle. Last winter I sowed Canada field peas in the orchard and plowed them in this spring, and contemplate doing the same thing this winter, unless there is a better method of treating the land. What I desire to know is what is the best course to follow to break up this crust and make the land loose and put it in condition for deep cultivation and irrigation, and to restore the humus, which I imagine has been largely or totally exhausted by the long cultivation of the olive trees without fertilizing and irrigating. Would lime be of value, and if so what kind should be used? Would the lime that has been used at the sugar factories be of any value for the purpose? Do I need to have the soil analyzed? Would you recommend me to subsoil the land each way this fall, say running two furrows in each direction, north and south and east and west, and 7 or 8 feet from the trees, to enable the winter rains to reach greater depth?—Orchardist, Ventura county.

You have sent a very satisfactory explanation of the soil conditions at your new orange plantation and we can only express approval of your plans and proceedings. You are doing just the right thing. The subsoiling, in order to admit moisture freely below the hardpan layer, is the best thing we could prescribe and continuous growth of legumes is the best method of re-enforcing the soil in organic matter—in that way not only increasing its plant food, but increasing also its power of moisture retention and overcoming its rebellious mechanical character. There is nothing to learn by analysis of the soil at this time, and if by the rational methods which you suggest you can maintain the growth of the tree, there will be little to learn concerning the soil, except what your trees by their own growth will declare to you. In its present condition lime will be of little value. As you have your plantation on top of what seems to be a deep and perhaps rather leachy soil, you will have to make frequent prospects to judge of the soil moisture and see to it that the trees do not suffer from the escape of water below. Continuous deep cultivation will be a sufficient protection against loss by evaporation. We trust that the future of the plantation may justify the careful attention which you are now bestowing upon it.

Morning Glory in a Cemetery.

To the Editor:—I read with interest almost everything published in your valuable paper. I noticed not long since an article in your paper in which you stated that it was next to impossible to kill Bermuda grass when once it had good set in the soil. The facts you present are conclusive. Now I want to know your opinion in regard to the killing of morning glory. I have seen it stated that it was impossible to kill when once set in the soil. Admitting this to be true, is there no way to stay its spreading? I have read that the sowing of salt would prevent the growth and kill out many kinds of grasses and weeds. If it be true, what quantity should be sown on an acre and the best time to sow? Our cemetery here has been overrun with grasses and noxious weeds, and we are anxious to prevent their growth and hope for their ultimate destruction. Can the spread of morning glory be stopped? We are told it will ruin our cemetery unless something is done. What had we best do?—A Subscriber, Willows.

We do not know any way to kill out morning glory on cultivated land except to smother it out by constant cutting under the surface during the growing season—never letting a shoot come to the surface to get green. We know no way to kill morning glory on land which is allowed to lie still during the summer except to dose the land with salt or arsenic, and they will kill everything else as well as the glory, so that the land will be bare as a floor both summer and winter. If you want that, you can get it by using chemicals.

We have not been in Willows lately and do not know how you keep your cemetery; but if you keep it in the same style as many rural cemeteries are kept, we should say that a good thick summer carpet of morning glory would be a great improvement. You would then have a winter covering of wild grass and a summer green of morning glory, instead of the dead grass and weeds which are the prevailing style. We can hardly see how morning glory can "spoil a cemetery." It never gets so thick that you can not get a grave opened with a little dynamite, and it may be some consolation to those who have been trying for years to uproot morning glory to think that they will succeed in getting under it after awhile.

The Pollination of Walnut Bloom.

To the Editor:—Presuming you intend further editions of "California Fruits," I wish to call your attention to an error in the first, on page 504, lines 6, 7 and 8. In the twelve or more years my trees have borne they never had two kinds of blossoms on them at once. The male has invariably fallen before the female appeared. A writer in the Pacific Rural Press some years ago said that the pollen from the first was caught by the leaves and thence was carried to the female blossom. This explanation is supported by my observation. In 1896, after the catkins had fallen, we had heavy April rains. My trees bore many very small nuts entirely without meats. Last spring, after the fall of the catkins, we had heavy rains. These were followed by the appearance of numerous female flowers, but nearly all fell off. In ordinary years my walnut trees bear well.—William Crosby, Livermore.

We are very glad to have your suggestion concerning the interval between the appearance of the staminate and pistillate blossoms of the walnut and that there must be some resting of the pollen, because the catkins disappear before the fruit bloom opens. We have had the same experience exactly on the Prœparturiens tree in our garden, which invariably loses its catkins before the fruit blossoms are ready to be pollinated. It seems beyond question that the pollen must be preserved upon the adjacent foliage, because in the case of our own tree there is no other walnut within a quarter of a mile from which pollination could be affected.

Beginning on the Desert.

To the Editor:—I am writing to you for a little information, providing you can give it. I am thinking of starting watermelons, cantaloupes, tomatoes, cucumbers and such things, and would like information about the best ways of growing them and the best kinds of fertilizers to use and any other information which you might have, for this is my first attempt at ranching.—Beginner, Needles.

California practice with these plants is described in detail in our books and frequently presented in these columns. We doubt very much that you would require fertilizers. Wide experience is that as soon as water enough is given to the desert soils they become very productive, and, if the plant has moisture sufficient to its needs, very satisfactory results are attained on land which seems to be too light and sandy to be productive. Two things limit the production on desert situations—one is the occurrence of extreme temperatures, either low or high, which interfere with the thrift of the plant; the other is the occurrence of alkali in the soil. These are local questions, and how far they would interfere with your success you can only determine by attempting to grow the things which you desire. The plant itself is the best judge as to whether the soil is productive or not.

Keeping Seed Potatoes.

To the Editor:—Please tell me how I can keep potatoes for seed. I sent East this spring for a new variety of potatoes to raise for seed, and paid a big price for them. I have raised a crop, but do not know how to keep them till winter.—Grower, Concord.

Store them in a cool, rather dry, place. There ought to be enough moisture in the air to prevent the tubers from shriveling too rapidly, and coolness enough to delay the sprouting as long as possible. They will keep better if stored in shallow boxes or trays than in sacks or deep bins, where the mass is apt to generate heat and force the growth.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending July 31, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather continued clear during the week and the temperature was slightly below normal. Conditions were quite favorable for maturing crops, harvesting and fruit drying. Grain harvest is nearing completion and thrashing is progressing. The yield of grain is less than expected and the quality is below average. Hay has yielded an excellent crop, superior in quality; baling and storing are in progress. Hops are making satisfactory growth and the outlook is good for a fair crop. Corn, beans and garden vegetables are in good condition. Summer pasturage is good in most places and stock are doing well. Grapes are maturing rapidly and some varieties are in market; prospects are good for a heavy crop. Late peaches in some places are not as good as expected, but there will be a fair crop. Plum drying is progressing. Almonds will make a fair crop. Oranges are in excellent condition and a large crop is expected.

Coast and Bay Sections.

Cloudy and foggy weather prevailed most of the week in the coast districts and clear weather in the interior. The temperature was below normal in all sections. Fire destroyed considerable barley in the vicinity of King City. Grain harvest continues and is nearly completed in some sections. Wheat is generally below average, but barley is yielding a very good crop. Grasshoppers are still troublesome in some places and have quite seriously injured grain. Hay baling continues; the crop is large and the quality excellent in most sections. Hops are in fair condition, but the crop will be below average. The foggy weather has been beneficial to beans and prospects are good for a large crop. Sugar beets are doing well. Grapes are ripening rapidly and in most places give promise of a large yield. Apricot drying is progressing. Peaches are ripening and prunes are turning rapidly. The prune crop will be light in most sections.

San Joaquin Valley.

Clear and seasonable weather prevailed during the past week. Conditions were favorable for ripening and drying fruit and good progress was made by dryers and canneries. Early peaches are nearly all dried and late peaches are coloring and promise a good crop. Heavy shipments of watermelons continue. Prunes are ripening rapidly, but the crop will be light. Bartlett pears are a better crop than was expected. Fig trees are shedding foliage, which is causing some damage to the crop. Almonds are generally a good crop. Grapes are maturing rapidly and the crop will be good; shipments are increasing. The tomato crop is nearly a failure. Heavy shipments of potatoes continue, but the quality is below the average. Citrus fruits are in good condition. Stock are looking well.

Southern California.

The weather continued clear most of the week, with foggy nights and mornings along the coast, and the temperature was slightly below normal. Conditions were favorable for nearly all crops and especially beneficial to beans and beets. Sugar beets are yielding a very large crop, with a high percentage of sugar. The largest crop of hay for several years has been harvested. Barley is yielding an excellent crop and wheat is above average, but oats are light. Walnut blight is showing in all districts and is bad in some orchards, while others are apparently not seriously affected. The cool weather is somewhat unfavorable for walnuts and oranges. Large quantities of lemons are being picked and shipped. Small fruits are not yielding as well as last year. Peaches are ripening; there will be a light crop. Grapes are in good condition and a large yield is probable.

Eureka Summary.—Cool, cloudy and foggy along the coast all the week. Crops are doing well. In the interior the weather was clear and warm; crops are suffering for moisture. Grasshoppers are doing considerable damage to vegetation on the highlands.

Los Angeles Summary.—The cool, cloudy weather is favorable for beans and root crops; it lessens the demand for irrigating water, but causes fruit to dry slowly. Orange trees are putting out heavy new growth; the fruit is still dropping, but prospects for a good crop continue.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 2, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.01	.75	.14	60	54
Red Bluff	.00	.00	.11	.02	94	58
Sacramento	.00	.00	T	T	86	52
San Francisco	.00	.00	.02	.02	60	52
Fresno	.00	.00	.00	T	98	58
Independence	.00	.00	T	.05	100	54
San Luis Obispo	.00	.03	T	T	74	52
Los Angeles	.00	.00	.00	.02	82	58
San Diego	.00	.16	.06	04	70	62
Yuma	.00	.00	.09	.18	104	74

THE FIELD.

Handling Alfalfa.

The universally respected secretary of the Kansas State Board of Agriculture, Mr. F. D. Coburn, has prepared for Orange Judd Farmer a very comprehensive and suggestive paper on how to get most out of the alfalfa plant. Naturally there are many things in it which do not fully meet California conditions, but if the reader will carefully follow the reasoning he will generally see where California comes in on the practice which is described. At all events there is so much that is directly applicable that it cannot but be helpful to the thousands of our readers who have recently taken up alfalfa lines.

Sensitive Conditions to Recognize.—It is a fundamental principle in the handling of this extraordinary hay plant that the less it is exposed to the bleaching sun, to rain, to repeated dews, and the less it is tumbled about from the time it drops behind the mowing machine until it is in the stack, mow or bale, the greater its value, provided a proper curing has been attained. Sunburning, bleaching by rain or dew, washing, and the loss of its leaves from any cause subtract from its worth to a degree distressingly expensive.

The leaves are the good part of alfalfa, and sustain about the same relation to the whole growth that the cream does to milk. Investigators insist that something like 76% to 85% of the digestible protein is in the leaves, and the younger the plant when cut the more tenaciously the leaves adhere to the stem. It is protein that the grower or user is really after, and that it is found in alfalfa in astonishing proportion is pointed out by the Wisconsin Experiment Station, where, by comparing alfalfa with clover, timothy and brome grass, it was found one acre of alfalfa yielded as much protein as three acres of clover, as nine acres of timothy and twelve acres of brome grass.

Loss of Protein Through Exposure.—An illustration of the harm done by exposure is reported by Prof. George L. Clothier, who made observations that alfalfa hay exposed to the weather fifteen days, including three showers aggregating 1.76 inch of rainfall, contained but about 11% of protein, while that from the same land, cut the same day, but air dried without exposure, contained close to 19%. Prof. Headden, of the Colorado Experiment Station, estimated that with even the most careful handling the loss from falling leaves was from 15% to 20%, and by careless work it might be as high as 60% or 65%.

The consensus of opinion coming from the farm and the experiment station is that the best period of its growth in which to cut alfalfa for prime hay is when it is fairly beginning to blossom, and not more than a tenth of its blooms have opened. This early mowing, too, is supposed to have a stimulating effect upon the growth of the succeeding crop; in fact, the mowing machine is regarded as one of the most helpful invigorants for this astonishingly prolific legume. At the Kansas Experiment Station a strip through a field of alfalfa was cut when one-tenth was in bloom. Another strip was cut after full bloom had passed. The strip cut early was nearly ready for cutting the second time when that cut after full bloom was being harvested the first time. The strip cut early grew vigorously through the season and made three cuttings and a good aftermath. The strip cut after full bloom gave a low yield the first cutting and did not grow sufficiently to yield a good second cutting. This is the experience of all alfalfa growers where the conditions of growth are normal.

Prof. H. M. Cottrell, who has been a careful student of these alfalfa problems, insists that, cut at this stage, the yield of hay for the season will be much greater than if cut at maturity, and every pound of hay secured will be worth more for feed. "The late cutting of the first crop injures the plant more than at any other time, and we have found it profitable to cut alfalfa the first time as soon as one-tenth was in bloom, even though the weather was bad and we knew that the crop would spoil in curing. The increased yield from succeeding cuttings over that cut late much more than makes up for the loss of the first crop. Often successful clover growers, the first time they try alfalfa, ruin the stand, so that it has to be plowed up, by waiting to cut until it reaches the stage at which clover is usually cut." At the Utah Experiment Station the difference in the amount of woody fiber or indigestible matter in alfalfa cut before blooming and at the period of full flower was found to be in the ratio of 1 to 3.4.

Fine Points in Cutting and Curing.—While generally between cutting and stacking the desideratum is to protect the hay from rains, there is on the other hand in some seasons and some localities not a little harm done by too much heat, sunshine and consequent dryness, crumbling, loss by scattering of the very choicest morsels, and deterioration of the remainder. A good plan is to let the hay become pretty well wilted in the swath, and then rake into windrows not too bulky, where it can lie as long again before being put into cocks, as already mentioned, to cure for two, three, four or five days more, according to the weather, before going into the stack or barn. To expedite the curing out process, the tedder can often be made to play a most useful part. So much time, to be sure, is not required for curing in those regions of scant rainfall, where it is no unusual circumstance, if not a general practice, to stack one day the cutting of the preceding day.

No hard and fast rules can be laid down for this work that are nearly applicable in all parts of a country with meteorological conditions so widely differing as those of Michigan from Arizona, or Maryland from California or Montana. If, as is quite common, the stacking is to be done in various parts of the alfalfa field, the hay can be drawn to the nearby stack on the horse table rake or "go devil," and by using a stacker or horse fork, the minimum of pitch forking and manual lifting is avoided.

The Ideal Alfalfa Stack.—Stacks, or, rather, ricks 10 or 12 feet wide, or wider, and of such height as is practicable are most usual; the length, long or short, may suit the maker's convenience. The greater the size of the stacks the smaller the proportion of hay exposed at the bottom, sides and top, and this stands as something of an argument for large stacks. As it is found that in the best stacks that are made there is a loss of from 12% to 20% and frequently from 20% to 30%, this is a factor of no little consequence. The man on the stack should always have in mind the importance of keeping the middle high and full and well tramped down. If dry straw is available for such a purpose, a foot in depth on the ground makes a good beginning for an alfalfa stack. In fact, any dry material or that such as poles, rails or stiff brush will afford a degree of ventilation at the base which is excellent.

Some growers, in stacking the first cutting (usually the most difficult to successfully manage), put alfalfa and dry straw or other hay in alternate layers. This is a satisfactory way if the dry material is at hand. Topping out stacks with straw or preferably some kind of longer hay, about 2 feet in depth, is very desirable, as alfalfa itself affords a thatch poorly adapted to shedding water. It makes little difference what material is used if the stack and its contents are protected.

Requisites in Storing Under Roofs.—A barn is the only thorough protection from the weather, yet placing large masses of alfalfa hay on a tight barn floor, without some sort of ventilators in it, is not advisable. Ventilators built rack fashion and 2 feet square serve a good purpose in the mow. Piling the hay around barrels and raising them from time to time as the mow fills, affords ventilation effective and inexpensive.

A very satisfactory and not expensive shed can be built by using 6x6 or 8x8 posts and making a lumber or shingle roof. The posts may be 13 feet apart, and ten will suffice for a shed 26x40, for which 16 feet is a good height to permit convenient use of the horse fork, with its track suspended from the roof. The posts are tied together with cross timbers, and the one at the end where the hay goes in should be about 2 feet below the top of the post, to give the horse fork full swing as it goes in with its load. Sixteen-foot lumber will make the roof for each side of the shed. To this structure feeding sheds, stalls and cribs can be economically attached, if desired.

Handling Alfalfa for Seed.—For seed the second cutting is, as a rule, considered preferable. The time for this is when about three-fourths of the seed pods appear to be ripe or of a brown color. At this stage much less is required for the hay to cure, and it should be early put under cover by the gentlest possible handling, unless, as can well be done sometimes, it is threshed directly from the windrow or cock.

A clover huller is far better for this than the ordinary grain separator. However, since alfalfa has become such an important crop, makers of threshers for use in alfalfa territory provide adjustments by which their machines are much better adapted for this particular work.

Alfalfa in Stanislaus.

To the Editor:—I see by a recent issue of the Pacific Rural Press that alfalfa at Modesto is not growing satisfactorily. It is the same here. I do not know of a field which will cut a ton of hay to the acre, and most of it will only go about half that. On digging up a plant I find a few nodules on the fibrous roots. This soil is all underlaid by a hardpan at an average of perhaps 4 feet. Then, too, the water is rising in the soil. I have heard the theory advanced that alfalfa whose roots become submerged through the rising of water in the soil will make but a poor growth until the immersed roots have rotted away and been replaced by roots near the surface, when the alfalfa will again make vigorous growth.

The assertion is often made that alfalfa will not do well in soils where the water is near the surface; yet alfalfa can not do better than much of that about Bakersfield, where water is to be had at 3 or 4 feet. Near Atwater, too, where the character of the soil as regards hardpan, etc., is similar to our own, some very fine alfalfa is grown without irrigation, the water being near the surface. I enclose some nodules—I find but a few to each plant. Since the breaking up of the "Society Upon the Stanislaus," when "every member did engage in a warfare with the remnants of a palæozoic age," "scientific gents" have been scarce in these parts. So, if any of the Berkeley professors happen around this way, an investigation of the alfalfa fields should be in order.

Turlock. Wm. G. Hewes.

Your alfalfa seems to be noduled all right, so the bacteria must be present. It is true that alfalfa to which ground water rises often improves after it accustoms itself to a shallower system of rooting, but it is usually short-lived. Water rising in a deep, porous soil seems to hurt alfalfa less than water rising on a hardpan, the common opinion being that the latter is more stagnant and more likely to become strongly alkaline. There is a whole lot which nobody knows yet about the behavior of alfalfa, and we would like to have all readers' observations and experience.

CEREAL CROPS.

Causes of the Wheat Shortage.

To the Editor:—In your last issue, we notice that in the article under the heading "The Week" you comment on the shortage in the grain crop, and we observe the following sentence:

"Rust and irregular moisture and temperature conditions have scored wider injuries than ever before, perhaps, which is especially notable because the season's rainfall was fair."

Do you really wish to account in this manner for the enormous shortage in the California grain crop? During the growing season California was favored with the most suitable weather. Rain came generally as desired, and in abundance, and there was practically a total absence of scorching winds. We think there are few people in California who will not agree in the statement that the weather and rainfall were everything that could possibly be desired or expected. Certainly the weather was not such as to account for the tremendous disappointment in the grain crop, both as to quantity and quality.

In a progressive agricultural paper like yours, we would have expected that something would be said about the lack of fertility in a good many soils of California, on which grain has been grown for thirty years in succession, without any rotation of crops whatsoever, and without a single attempt at fertilization. Nowhere else in the world can such farming methods result in satisfactory crops, in the long run, and it is time that the California farmer should awaken to the fact that this will hold good also for California.

During the last three or four seasons there has always been an insufficient rainfall and hot winds have also been experienced. Consequently it was to these causes that the crop failures were attributed. Reasonably this does not hold good for the present season; for, in spite of a sufficient rainfall and generally favorable weather, the crop results will be little or no better.

It is already widely acknowledged that lack of fertility is one of the main causes of grain crop failures in California, and we would refer you to the farewell address of the president of the Merchants' Exchange delivered a few days ago, in which this subject was discussed and where it was pointed out that the use of fertilizers was becoming an absolute necessity in California if grain soils were to yield as they are expected to. Meyer, Wilson & Co.

San Francisco, July 28.

We are quite ready for discussion along these lines and it will be a good thing for the State for everyone who knows anything about the facts to get to thinking. The foregoing is, of course, a special plea for fertilizers. We believe that fertilizers must be used and had no idea of obscuring that fact when we emphasized the other facts, that the natural conditions during the growing season were not favorable. Our correspondents try to impeach us on that ground and we have to appeal to our court of last resort, viz., our readers who are growing the grain. We would like to hear from every one of them about his conclusions as to why the current wheat crop so largely failed; also whether the last winter's "weather and rainfall were everything that could be possibly desired or expected." Let us have a good, all-around, enlivening and edifying discussion, in which all who have a fact or an idea shall take part. We will not exclude even the president of the Merchants' Exchange, although it is rather new to have such an able commercial expert cited as an authority on agriculture.

Pending the free discussion of the matter, which we hope scores of our readers will indulge in, we stand for the general accuracy of our statement which our correspondents quote and criticise. Rust is not a thing of fertilizers, except, perhaps, the ranker the growth the greater the rust injuries are. Though total moisture was ample, the distribution of

it was bad, especially as the temperature was low and not favorable to vegetative action and the grain came into the summer with no such growth as it would have made with higher winter heat, even with less rainfall. The season naturally was bad and not good, as our correspondents claim.

As to fertilizers, some are now using them and it is time we had some reports. Who made a good crop with fertilizing this year, while the other grain adjacent failed? These are the facts we need; who can supply them? Fertilizers are good, and we shall have to use them to get large crops, but fertilizers are not a panacea against crop failure in California any more than they are in other parts of the world.

THE APIARY.

Do Bees Swarm Differently in California?

A well-known California beekeeper, Mr. Muth-Rasmussen of Inyo county, recently visited the East and took occasion to consult the wise men of that region concerning bee happenings which he had noted in this State. Gleanings in Bee Culture for July gives an account of his visit to the apiary sage Doolittle, in dialogue form, which we reproduce because of its local flavor:

"Good morning, Mr. Doolittle. I have come all the way from California to have a little talk with you in regard to something which I think will be interesting to us both."

"Very good, Mr. Muth-Rasmussen. I am glad to see you, for I know you are one of our oldest beekeepers, and one who has had much experience with the honey bee. What is to be this interesting talk?"

"First, I wish to speak of something which very often happens with us in California, and, to make it plain, I will put it under the head of a supposition."

"That is right. By making matters plain we shall understand each other better and know whereof we speak."

"Now, suppose the following case: A colony of bees loses its laying queen by her dying from old age or some other cause. The bees start queen cells on her brood; but when the young queens emerge there is no more unsealed brood from which a queen can be reared; consequently, when the virgin queen flies out to mate, the bees will swarm out with her and will settle on a tree or bush, like a normal swarm. One of the questions I should like to ask is this: Does the young queen, after a successful mating, return to the old hive, or to the swarm hanging on the tree?"

"But is the case a supposable one?"

"I had thought so. Why not?"

"Perhaps it will be well for us to look into the matter of how swarming is conducted. Would a swarm issuing under your supposed case be any different from any after-swarm, except that more bees would go out with this virgin queen?"

"Perhaps not; only that there would be more time for the brood to mature than there would be where the old queen goes with the prime swarm, instead of her being lost by death."

"Yes, you are quite right there; for with the loss of the old queen it would be from ten to thirteen days before the first young queen would emerge, while, when the queen goes with the prime swarm, the young queen generally emerges seven days afterward. But as all young queens are from four to eight days old before they go out to seek the drone, all brood must be sealed under any and all cases where man does not interfere, before any virgin queen would leave the hive on her mating tour."

"I guess that is so."

"Certainly. All authorities agree on this. All swarms having virgin queens must necessarily issue only after all brood is sealed, unless, perchance, the prime swarm has been kept back by foul weather until near the time of the emerging of the young queen, and, so far as my knowledge extends, no virgin queen, while her colony was in a state of nature, ever flew from her home to meet the drone until after all brood was sealed."

"I think we agree on these points, and, if so, why was not my supposable case good?"

"Because swarms do not go with virgin queens when they go out to mate. Let us study into the swarming matter a little further and see if we still further agree. You say in your supposition that, after the death of the queen, the bees start queen cells. Now, I never (certainly) knew of any after-swarm issuing, or of a virgin queen going with a swarm, or any swarm going with a virgin queen, without a rival queen being left in the hive from which such swarm came—the same generally being confined in one of those queen cells you tell me was started. This is nature's plan for the preservation of the old home or hive, and is one which has prevailed for thousands of years. I said 'certainly' knew, because, years ago, I supposed I had cases where the bees went out with the queen when she went on her wedding flight; but later experience has convinced me that there was a rival queen in the hive from which these swarms came. If this is correct, then your case is not a supposable one."

"The only answer I can give is this: Under the supposable case, and under such circumstances, the bees—though not the whole colony—invariably swarm out with the virgin queen in this locality. I have had quite a number of such cases this year."

"Well, this beats me, and it is the first time I ever heard of such a thing. I know that locality plays a very important part in beekeeping, but I do not suppose that it could change the laws governing the swarming of bees; and as you and I are among the oldest of the beekeepers now living, if you are agreed, we will ask the readers of Gleanings to tell us how they find this matter in their locality."

"I am agreed, and should like to hear from them."

"And that they may know how Doolittle views this matter, I should like to state that, so far as my experience goes, a swarm goes out with a virgin queen only when there are rival queens left in the hive in the shape of other virgin queens in queen cells, and when all but the last virgin has gone out with swarms, or been disposed of by the bees or by the queen that is at liberty in the hive; then, a few days later, this remaining queen goes out to meet the drone alone, with none of her bees accompanying her, is fertilized, and soon becomes mother of the colony."

"And Muth-Rasmussen wishes to say that, under the circumstances he has given, a part of the bees invariably swarm out with the virgin queen when she goes out to mate, leaving nothing from which the bees might rear another in case this virgin fails to return. And I hope to hear from many on this point, especially from those in California. Now, as we have left it to the readers of Gleanings to tell us their experience in this matter, suppose you tell me whether you think the queen, on her return from a successful mating, would go to the old hive or to the swarm hanging on the limb."

"In cases of this kind I should expect that the virgin queen would alight with the swarm and stay with the swarm until the same was hived, or found a home in some hollow tree or cave, when, or after which, the queen would go out to meet the drone, from the fact that I never knew a virgin to mate until her colony was established in a home of some kind. I have opened hundreds of after-swarms within one to three days after they were hived, to see about how they were building comb, and I never saw eggs in any cells earlier than two and a half to three days from hiving, while it was more often four to six days."

"Thank you for your opinion on this point. And now will you give your opinion still further? If the young queen, after having met the drone, returns to the place where the swarm had settled, but the swarm, in the meantime, while the queen was in the air, having been brought back to the old hive, will the young queen come back to the old hive or will she remain at the settling place, lost like a young bee that does not know its own home?"

"Should such a thing happen as you are supposing, the queen would return first to where the swarm had settled, and, not finding it, she would return to the old hive, as she marked the location of her old home when she went from it, the same as all the bees with the swarm do. All beekeepers who practice clipping queens know that, if anything happens to their queen after they have clustered, they will go back to the hive from which they came."

"Thank you again. And now just one more question. If the young queen, after mating, returns to the swarm hanging on the tree, and the swarm is not hived by the owner, will the swarm return to the old hive of its own account, or will it finally leave in search of a new home?"

"It would leave in search of a new home; for, so far as my experience goes, all swarms having their queen in perfect order with them, look up a new home and never return to their old home. They start out from their parental roof with the intention of establishing a new home, and they always do this unless thwarted in their purpose by the loss of their queen."

"These are interesting questions, and I do not remember seeing anything exactly to the point, either in bee books or papers."

"Pardon me for thinking that the reason you have not so seen is because others have not found out that bees swarm with the last and only young queen they have, when she goes out to meet the drone, thus purposely leaving the old home hopelessly queenless. This is not in accord with nature's ways."

THE STABLE.

The Popular Horse and How to Get Him.

From an address by C. C. K. Scoville before a Farmers' Institute in Kansas.

It is generally admitted by horse dealers in the country and in the city that the demand for park or carriage horses is greater than its supply. It is conceded, I believe, on all hands that during the last five or ten years there has been a great falling off in the breeding of all kinds of horses; and if that be true, the question of where our supply of good horses is coming from in the near future becomes an important one. One well-posted writer says the style of carriage horses demanded in America has undergone a great change during the last twenty years. "There was," he says, "a time when any smooth horse, sixteen or seventeen hands high, would pass for a coach horse, regardless of action;" and it is my experience in trying to buy a few good carriage horses during the last few years that the general opinion of most people through the country districts remains the same. Looks, not action, in the minds of many, constitute the important requisites of a carriage horse. To the lover of good horses no greater mistake was ever made. The well-posted man of to-day who is looking for a pair of horses to draw his carriage will have four things in his mind; and if a judge of horses, will, with lightning-like rapidity, arrive at conclusions, first, as to their size; second, as to their style; third, as to their soundness, and fourth, as to their action. A lack in any one of these four essentials condemns the team, and, although your horses may be possessed of many other good qualities, the prospective buyer walks away.

Nothing short of sixteen hands will interest him; nothing less than fine conformation with small head, carried very high, showing plenty of style, appeals to him; nothing but a sound horse has any show with him; and nothing but an extra-good mover fills his requirements. Such being the case, the farmer who is contemplating breeding a coach or carriage horse must of necessity take all four of these requirements into careful consideration. It goes without saying that if these four things are required, then the sire must possess them all, because if you fail to breed for each and every requirement, then you will fail to possess all of them in your team when you offer your horses for sale. I know I will be met with the objection that you cannot find such sires in the country. Allow me to suggest that you will find any kind of a sire if you are willing to pay what his services are really worth. If you expect men to bring sires of that description here, you must encourage the owner by a willingness on your part to pay better prices, which you can well afford to do. The return on the money invested will be large, as any breeder of experience knows.

Most unusual attention is now being paid to action when carriage horses are being considered. Both high knee and hock action, the higher the better, if graceful, will bring big money. Probably no other quality in a horse is so hard to breed, and yet a style of going is as hereditary as color or disposition if strong blood is used. Fashion has somewhat reduced the required height of the carriage horse, but more substance and far better knee and hock action are wanted.

The high prices ruling the market for coach horses and speedy roadsters have stimulated much discussion as to the proper method of breeding such animals. There are a large number of German and French coach stallions doing service in this country, besides imported Hackney and Cleveland bay sires, says the Spirit of the West. "All of these imported breeds," says that publication, "are being crossed with American trotting-bred mares, with the expectation that the progeny will make the desired coach animals. Other breeders are following the direct crossing of the largest type standard-bred stallions with large sized trotting mares, with the idea that results par excellence will be achieved.

"The American horse is the descendant of European importation, and if crossed with the best type of its ancestors good results will be obtained. But in this country much attention has been given to producing a handsome coach horse of commanding size, possessing a high rate of speed, by methodical selections of the standard trotter. If a methodical course of breeding for several generations should be pursued within the lines of the standard-bred trotter, there is no question but what a coach horse would be evolved that would be the peer of any of the imported breeds in size, beauty of conformation, and would excel all of them in action and speed. But nothing can be accomplished in a desultory fashion. The breeder must formulate his plans and follow his theories systematically to attain the best results."

So, my twentieth-century breeder, be careful in the mating of your horses; be a stickler for absolute physical soundness, style and beauty. See to it that your brood mares are all large, well muscled, upheaded, of good color and good action, and cross them with the best looking stallion you can find that has all the qualifications that go to make a perfect horse; and the one with the most speed in addition would be preferable. Then devote especial attention to each colt, and you will be among the top-notch breeders, and your stock will be in demand. As a prominent breeder has said, the horse now in demand is the well-broken horse, perfectly sound, with size, style, action and good looks, and all the speed you can get. And such is the horse that we must breed.

When the owner of a mongrel stallion tells you wherein his "hoss" excels costly pedigreed stallions, beware! He won't ask you much money, but will delude you out of a season's use of a good brood mare if you heed his persuasive voice and selfish argument. The value of a sire lies in inherited possession of prepotence, which enables him with certainty to impress upon his progeny those characteristics desired. "Breed to the best" must be the watchword. Blood will tell in this age of competition and low priced horses. The owner of the mongrel is

always sounding the bugle of self interest and the unwary are often deluded thereby. My advice is, under no circumstances breed to a mongrel, even at the least service fee. Breed only such mares as are sound and free from hereditary ailments, each distinct class to be the best of its own kind. The keeper of the standard horse of either of the distinct breeds is a public benefactor, while the keeper of the mongrel is a public detriment. Too many breeders have been and still continue penny wise and pound foolish in breeding all kinds of domestic animals.

The business of growing horses on the farm has in the past been characterized by a number of mistakes, which in the work of the future should be avoided, since experience has demonstrated them to be mistakes. One of these has been that of promiscuous and purposeless breeding, which has resulted in the production of a large number of scrubs that were without value; another was breeding for trotters. This is a department of the horse industry, says another writer, that must be left to the specialist; and yet a great many farmers, not horsemen in any expert sense, have wasted their efforts. very much on the same theory that men invest in a lottery. They seem to entertain a secret hope that by some chance they may get a fast one. The outcome has, as a rule, been that they didn't get any fast ones, and the trotter has unfortunately been so exclusively bred for speed, at the expense of nearly everything else, that if a trotting colt is not fast he is practically good for nothing. Even when a good trotting colt is obtained on the farm, the man who produced him, as a rule, sold him for a song to one who makes a specialty of developing speed. Something of the same objection applies also to the production of saddlers and other classes of horses in which development and training are chief factors in the value. The general farmer has neither time nor very often the special knowledge necessary for the development that puts value on horses of this kind. It is very irritating for a farmer to find that he has sold a pair of three or four-year-olds for $200 or less, and that the purchaser, in the course of another year, has found a market for them at $1000 to $1500; and yet such cases occur. Another mistake commonly made in breeding useful horses is for the farmer to breed the kind that hits his fancy. He argues that for his own use he prefers a horse that will weigh about 1200, and that, therefore, he will aim to get horses about that weight. This is all right if he is growing them for his own use. If he regards a heavy draft horse as too clumsy and awkward for his purpose, it is entirely legitimate for him to grow the kind that does suit him; but if he is growing horses with a view of selling them when they reach a salable age, surely it is the part of wisdom to grow the kind that will bring a high price.

Breed one thing or another. Choose the path and then follow it religiously. Don't switch from one line to another. Grade upward. The man who begins with one breed of horses, and then suddenly interposes a violent cross, loses everything he has gained in the first cross, and by his own action deliberately kicks down all he built before. To breed drafters of weight and quality, you must mate big stallions with big mares—there is no other way that it can be done; and you cannot breed good sellers from great, rough, unsound brutes, male or female. Quality sells for just as much, in proportion, in a drafter as it does in a coach horse. If you are going to breed for speed on the road, breed from parents that possess it.

THE IRRIGATOR.

Reclamation of Arid Lands in Nevada.

(Continued From Last Issue.)

The public lands are subject to entry under the Homestead Act, no price being charged for the land, but the cost of irrigation will be assessed against the land as a charge for the water right, to be repaid in ten annual installments without interest, at the rate of $2.60 per annum per acre. This covers the cost of maintenance and operation during the ten-year period, and provides for the delivery of water to each farm, and also for a comprehensive drainage system.

After the ten-year period stated, the land and water rights belong to the holders of the lands forever, with no further charge by the Government. The care and maintenance of the system then passes into the hands of the land owners, under laws, however, made for the purpose which will insure protection against corporate or individual greed and fraud.

The drainage is a more important factor than would be commonly supposed, as it has been estimated by the U. S. Agricultural Department that one-tenth of the land that has been irrigated by private or corporation enterprises has been greatly injured, if not permanently ruined, by too much water and too little drainage. Drainage is imperative on account of the heavy alkali deposit, which must be carried off to insure the good quality of the soil. This drainage system has increased the cost of the project from $5 to $10 an acre, but the prosperity of the settler depends upon the one about as much as upon the other.

Title to the public lands is not given until all payments for water have been made. Lands held in private ownership are supplied with water as desired, at the same price, and upon the same terms as public lands.



Site of the Lower Carson Reservoir, Near Leetville, Nevada.

The public lands are now open to entry under the Homestead Act, but intending settlers are strongly advised not to file upon any of the lands outside of the district to be irrigated during the current year, and not until it is known when the water will be ready for delivery to such outside lands, for, without water, they can produce nothing which will yield them a living.

Following is specific information for the benefit of intending settlers:

The provisions of the Reclamation Law authorize the Secretary of the Interior to limit the homestead entry to any area between 40 and 160 acres, to fix the price per acre that shall be charged for water, which price shall return to the Government the cost of the irrigation works; to fix the number of annual payments, not exceeding ten, and the date when the payments shall begin; and to perform any acts and make all rules and regulations necessary to carry out the provisions of the law.

The lands under the Truckee-Carson project can be entered under the Homestead Act only. The U. S. Land Office, where entries are made, is at Carson City, Nev. There is no charge for the land other than the usual land office fees. All entries will be limited to from 40 to 160 acres of land, depending upon location, character of soil, roughness of surface and irrigability.

All of the public land will be divided into homestead or farm tracts, each of which will embrace enough irrigable land to support a family comfortably, if well and carefully tilled under irrigation.

Any unmarried person over twenty-one years of age, or any head of a family, who is or has declared his intention to become a citizen of the United States, who has not used his or her homestead right, or who is not then owner of more than 160 acres of land in any State, can file on any one of these tracts. Title to land cannot be acquired until all payments for water have been made. The law requires a homesteader to see and select his land personally.

Residence must be established on land within six months after filing thereon, and must be continuous thereafter, and the land cultivated for the term of five years.

The cost of water to settlers has been fixed at $26 per acre irrigable, payable in ten equal annual installments, without interest.

The homestead fees and commissions for filing, payable when application is made, are as follows:

	Acres.	
For land at $2.50 per acre for	160	$22 00
For land at $2.50 per acre for	80	11 00
For land at $2.50 per acre for	40	8 00
For land at $1.25 per acre for	160	16 00
For land at $1.25 per acre for	80	8 00
For land at $1.25 per acre for	40	6 50

Originally the Homestead Law required the appli-

Agricultural Review.

Alameda.

ENLARGE PRESERVE PLANT.—Oakland Enquirer, July 29: Manager Roos of the San Leandro plant of the Pacific Preserve Works has awarded a contract to Contractor Taylor for the erection of a building which will double the present size of the factory. The job is to be completed September 1, in time for the season's run on tomatoes and cucumbers. The floor space is to measure 88x150 feet. There will be a platform on three sides of the building. When the plant is enlarged the work of processing, which has in the past been done in San Francisco, will be carried on in San Leandro. Five men are to be employed the year around at this part of the canning business.

Glenn.

GRAIN FIRE.—Orland Register, July 29: One of the biggest and most destructive grain fires that ever visited Glenn county occurred last Saturday afternoon, when sparks from the large traction engine, used by J. K. Kendrick in drawing his harvester near St. John, set fire to a grain field, and as a result nearly 2000 acres of standing grain was razed to the ground and lapped up by the furious blaze. The fire started in the Horner place; then it took Joseph Billiou's grain, and from there went into Ralph Jones' wheat. H. West's grain, immediately north of the Chico and St. John road, was next in line, and adjoining this was Joseph Billiou's home ranch, which was also swept. The 600-acre field, the Linn place farmed by Kendrick, was the place where the fire was gotten under control. As nearly as can be estimated, the loss sustained is as follows: J. K. Kendrick, 150 acres; Joseph Billiou, 280 acres; Hiram West, 1000 acres; Ralph Jones, 160 acres. J. K. Kendrick (Linn place), 500 acres. With the exception of the grain belonging to Jones and Billiou, the grain was insured.

Humboldt.

CUT WORMS.—Arcata Union, July 26: Cut worms are commencing to work havoc with the pea crop in Bay district, and the outlook is not encouraging for some of our farmers. The worms were working in a field of Wm. Spaletta's and he headed them off by cutting the crop green and feeding it to cattle.

Kings.

PURCHASED KINGS COUNTY RANCH.—Hanford Journal, July 28: J. Hook and Robt. Dunn, who arrived in Hanford recently from Topeka, Kansas, have purchased the W. W. Bloyd ranch, 3½ miles west of Hanford, and will reside permanently in this part of the country. The sale was made by J. S. White, an old acquaintance of the purchasers, who have been visiting at his home.

Los Angeles.

APRICOT NOTES. — Pomona Times, July 26: The apricot harvest is nearly over. The crop was less than expected, but in the main of fine quality. The weather has not been favorable for drying, yet with slight exceptions no loss was sustained. The Pomona Deciduous Fruit Growers' Association has finished cutting about 150 tons, which makes thirty tons of excellent dried goods. J. J. White on Crow avenue has finished cutting about seventy-five tons. The fruit was good, product choice. A. G. Whiting is not quite done, but says his dried product is the best ever made.

Mendocino.

HOP OUTLOOK.—Ukiah Republican-Press, July 28: The hop outlook is not so bright this year as it might be, and 15 cents is about the best offer that is being made. One large lot was turned down at that figure last week. The market is a little stiffer at present and the hop men are hoping for a raise. The crop this year in this valley is said not to be as good as last. For old hops the market is a little stronger and has taken an advance of about ½ cent, 18½ cents having been offered.

Merced.

WHEAT RAISING. — Merced Express, July 29: J. B. Olcese and H. A. Buchenau harvested nine sacks to the acre on a ninety-acre wheat field near Berenda this season and sold the wheat at $1.70 per cental.

Nevada.

GOOD FRUIT CROP.—Union, July 28: The Bartlett pear district of Nevada county has the largest crop in years, and under existing conditions the orchardists stand to clear a substantial profit for their year's work. The peach crop is also unusually large, while the fruit is of excellent size and fully up to standard in flavor. It was feared that the recent record-breaking hot wave had aged the young fruit by scorching it, but while a little fruit was burned, it amounted to such a small proportion of the crop that its loss will not be felt. Grapes had not advanced far enough to be injured, and an immense crop is expected.

Placer.

GOOD CROP OF OATS.—Lincoln dispatch to Sacramento Union, July 31: The farmers of this region have completed the harvest of oats and barley. The yield of the former has been above the average. The harvesting of wheat is now in full blast, the crop of which is about an average.

San Benito.

HAY CROP.—Hollister Bee, July 28: The hay crop in the vicinity of Hollister this year will amount to about 25,000 tons, against 26,500 tons last season. There is as much straw as last season but the hay does not weigh as much, therefore less in tonnage. The quality compares favorably with that in other sections of the State, but it is not up to the usual standard. The warehouses are receiving about 300 tons a day, and will be filled unless the demand for shipping increases.

San Diego.

APPLE CROP. — San Diego Sun: Ed. Fletcher recently made a trip into the apple country around Julian, for the purpose of estimating the probable quantity of the crop. He states that considerable frost had been experienced and that it had injured the crop to some extent. It is estimated that the apple crop will be about as heavy as it was the past season. Many new orchards will bear fruit for the first time this season. Taken as a whole, the apple crop throughout the State is the most promising among the fruits. Although prices may be somewhat lower than last year, apple growers stand to make good profits.

San Joaquin.

NEW FRUIT. — Lodi dispatch to San Francisco Call, July 31: John Phillippi, a well-known fruit nurseryman of this place, has perfected a new fruit from the peach and nectarine, called a peacherine. Authorities on fruit state that the nurseryman has made the natural blending of the two fruits, and the result is a firm, sweet, white meat, with a palatable mixture of the flavors of the fruits from which it is a cross. It will make one of the best shippers on the market.

GRAIN CROP.—Stockton Independent, July 29: Perry Yaple, of Ripon, says that the Ripon wheat crop will be a third of the average, but that there will be a fair yield of barley. In places where six and eight sacks of wheat were cut last year two and three are the limit this season and much of that will only be good for chicken feed.

WATERMELON SHIPMENTS.—Lodi Sentinel, July 29: Watermelon shipments are going out fast from Lodi. Five cars were sent out yesterday. The market is not very high at present, due to the Fresno product glutting the market. In a few days the season at the Raisin Center will be over with and from then on the Lodi watermelon will have full swing, and local growers expect to realize $125 per car. There are a few peaches and pears moving out of Acampo and Lodi, and fair prices are being realized. About August 12th the first Tokays will be shipped and from that time on the fruit men will be very busy. Table grapes will be an immense crop this season, and the growers expect to realize good prices.

BIG YIELD OF OATS.—Lodi Herald, July 29: Herbert F. Cary, the well known farmer of this county, has just harvested his crop of oats and reports an average yield of ninety-two bushels to the acre. The land has been used for pasturage the last three years that may account for this big yield, which surely is larger than usually raised to the acre.

CO-OPERATIVE WINERY.—Lodi special to Sacramento Bee, July 31: The co-operative winery building at Woodbridge will be ready to crush grapes on August 15. There are four buildings at the winery, two being 154x74, one to be used for a fermenting room and the other for tanks. The distilling and engine room is to be 60x80 feet in size, and the other building will contain the scale room and office. A 60-foot conveyor, capable of unloading four four-horse wagons, will take the grapes to the crushers. The incorporation represents 1000 acres of wine grapes, every acre counting as one share.

San Luis Obispo.

GRAIN FIRE.—Paso Robles Record, July 29: A grass fire broke out east of Templeton Tuesday and burned over several hundred acres of pasture land. About 100 acres of standing grain and some grain in stack, the property of Sam Berger, was also destroyed. This is the third grain fire in this section in the last few weeks. It is seldom so many fires occur in one season.

THRESHING AT EDNA.—Edna report to Tribune, July 29: Threshing is the order of the day, although the headers have not finished on some of the ranches. A. Villi threshed out 7500 sacks of barley from twenty-eight settings. Bob Johnson had 2540 sacks and David Isom about 1200 sacks. Chas. Monighetti turned out 2460 sacks on his home place and has his grain on the Hollister place yet to thresh. Stewart Taylor had between 1800 and 1900 sacks.

Santa Clara.

CANNERIES.—San Jose Herald, July 31: Santa Clara county's great industry, fruit canning, is now in full swing. Each of the four local canneries, as well as those of Santa Clara, Berryessa, Los Gatos and Campbell, are working to their limit capacity. In San Jose there were 1325 hands employed in canning fruit last week. The canneries are now finishing up apricots and are running into peaches of all varieties.

The canning season, strictly speaking, opened some weeks ago, with small consignments of apricots from Berryessa growers. The very hot weather which followed immediately did considerale damage to the apricot crop of this vicinity, and many tons have been turned away from the canneries on account of being sunburned. In size the crop is a success. The apricots that have been sunburned and rendered useless for extra canning, have all been sent to the dryers.

The peach crop has been reported by the different canneries as being "fair," "excellent" or "medium," according as their purchases have turned out. Crawford and Foster varieties are now being put up. Barlett pears are running fairly well, with the exception of orchards that have been infested with the scale. Fruit from the San Joaquin and Sacramento valleys is being shipped to the local canneries in small consignments until the local crop turns fully in. Plums, like prunes, are light.

There seems to be a growing demand in the East for peaches canned in water instead of syrup. This is accounted for by the cheaper price which such goods may be obtained for by eastern consumers. Local fruit men are not exactly pleased with this demand, as they assert there are enough poor goods canned in the East to allow Santa Clara county canners to put only first-class fruit on the market. Of course, the major portion of the fruit now being canned will be consigned to the Atlantic seaboard, but there are numerous orders for canned goods from the North, Europe, India and Australia.

Shasta.

GRASSHOPPERS EAT MELONS.—Redding Special to Sacramento Bee, July 29: The Logan farm in the Pacheco district, east of the Sacramento, has been a heavy sufferer from grasshoppers. A fifteen-acre patch of watermelons was destroyed this week, just as the melons were approaching a marketable condition. The hoppers ate the vines and the leaves, leaving the green melons untouched on the ground.

WHEAT IN PACHECO DISTRICT.—Redding Searchlight, July 28: Little more than half a crop of cereals is reported in the Churn Creek Bottom, or Pacheco district. The cause of the crop failure is attributed to the baking of the ground after the late spring rains. The harvest of the wheat crop on the lands owned by J. N. Logan Sr. and his sons, Dr. Walter J. Logan and William H. Logan, has just been completed. Dr. Logan was in town Tuesday and reported that this season's crop was but little more than half what was usual. The yield of the Logan lands, aggregating probably 400 acres sowed to wheat, was about 2250 sacks. Mr. Logan estimated that a full crop under cultivation would reach at least 4000 sacks.

Sonoma.

FRUIT ACREAGE.—The following figures on the fruit acreage are compiled by the County Assessor. There are 17,570 acres of bearing grapes, 1290 acres of non-bearing vines. For the crop of 1905 there was sown 2810 acres of wheat, 5960 acres of oats, 1640 acres of barley, 810 acres of corn and 37,090 acres of hay. The following is the number and acreage of fruit trees:

Apple	210,690	70,910
Apricot	19,010	24,020
Cherry	42,870	18,200
Fig	4,080	12,040
Olive	60,720	43,500
Peach	258,650	6,900
Pear	77,870	22,250
Prunes (French)	501,650	92,580
Prune	44,920	4,710
Lemon	750	200
Orange	8,920	1,860
Almond	71,010	2,980
Walnut	42,090	1,110

CANNING PEACHES. — Sebastopol Times, July 29: The local cannery is now running on peaches and has a large force at work. Manager Asa Mills reports that everything is progressing smoothly at the big institution and he expects to wind up the season with a large pack.

CANNERY BUSY. — Press-Democrat, July 30: The Walden cannery at Geyserville is now in operation and about 250 hands are employed. A consignment of 400 boxes of fine peaches were received Friday from the Forestville district.

FOSTER RANCH. — Press-Democrat, August 1: H. G. Sinclair, the superintendent of the Foster ranch, formerly the Fair ranch, at Lakeville, reports that crop prospects are fine on the ranch. The hay crop was a very large one and the vineyards promise a big yield of grapes. The prospects for a big crop of potatoes are also very good. Last year 15,000 sacks of potatoes were raised on the place.

Tehama.

PEACHES.—Red Bluff dispatch to Sacramento Union, July 30: There are scores of teams engaged in hauling peaches to Red Bluff for shipment to Eastern and Northern points. The crop is fairly large and the quality good, and a strong market calls for the fruit. The Stice & Gardner Co. has a large force in its big packing house wrapping and boxing the fruit and are sending cars out every day. James Feeley has undertaken to supply seventy cars of dried peaches to one Eastern firm and has smaller orders for others. It will be impossible for him to supply the Red Bluff and Vina peaches, which are in the biggest demand, but he will be compelled to go outside the county for more fruit. This year grasshoppers destroyed a big portion of the fruit crop in this county, and were it not for this we would have had the largest crop ever seen here.

Ventura.

MUSHROOM CULTURE.—Ventura Democrat, July 28: A new and novel industry is to be launched in Ventura by F. H. Hennion and I. W. Hufft, who intend to establish mushroom beds on Meta street, Ventura.

HONEY YIELD.—Ventura dispatch to San Francisco Call, July 31: There will be an enormous yield of honey in this county this season. The harvest is about the same in Santa Barbara, parts of Los Angeles and Ventura. Here the yield amounts to 7000 cases, sixteen cases to the ton. This exceeds the yield of two years ago, when many apiarists became rich. Last year no honey was produced. All the old honey was cleaned up and good prices are anticipated, though thus far some small lots have brought 5 cents.

Yuba.

WOOL GROWERS' SALE. — Marysville dispatch to Sacramento Union, July 30: The Wool Growers' Association has decided to hold its fall sale one day during the week between October 13th and 20th, and growers will be requested to sign agreements that they will not sell before that day and will store their wool with the others in Marysville. In this way it is hoped to have a large quantity of wool for sale, so that it will pay buyers to come from a distance to get it. In this manner, too, higher prices are expected to be realized. The sales held heretofore have resulted in the growers getting better prices than had they sold privately.

OREGON.

Lake.

SHEARING SHEEP BY STEAM POWER.—Redding Searchlight, July 28: Sixty thousand sheep were stripped of fleeces at the steam-power shearing plant at the Loveless ranch, near Lakeview, by twenty machines in forty days. The plant has closed for the season and the machine operators have gone home. Sheep-shearing machines have been tried here once before, but failed to give satisfaction. This trial, however, has been highly satisfactory, and no doubt next year the plant will start up early enough to put through all the sheep that can be driven to the pens. It is estimated that from one to one and one-half pounds more wool can be taken from each sheep with the machines than can be recovered with the blades. The sheep are no more bruised or cut than hand-sheared sheep, and the process is much more rapid. A man who understands the operation of the machines can clip from twenty-five to fifty more sheep a day than an expert with the shears, to say nothing of obtaining a greater amount of wool from each animal.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

Plod, Plod, Plod.

When your hands and head are weary,
And your soul has lost its song;
When the road is hot and dreary,
And the way seems very long;
When you have no heart for action,
When you need the spur and rod—
There's a world of satisfaction
In a plod, plod, plod!

Just to see the task before you,
And forget the distant goal;
Just to bid Renown ignore you,
And to bear an humble soul;
Just to trudge along contented
Where the many feet have trod—
There's no better rest invented
Than a plod, plod, plod!

Let the genius leap to glory—
Winged feet that spurn the soil;
Though I think the truer story
Is that talent always toils.
We will make a reputation
From a broom, a hoe, a hod;
There are fame and fascination
In a plod, plod, plod!

For in this way and no other
Do the seasons come and go,
And the great world is a brother
To the toiler with his hoe;
Near to Nature working slowly,
We are close to Nature's God
When we give our spirits wholly
To a plod, plod, plod!

—Amos R. Wells, in Ram's Horn.

Mr. Bruner's Financiering.

Old Fritz Bruner came slowly up the steep sidewalk leading from the levee to the town. Reaching the top of the hill, he paused a moment to get his breath. Just then a voice came from Margaret Hilliard's cottage:

"Mr. Bruner! O, Mr. Bruner!"

Old Fritz moved on to the tiny gate. "Dot vas mine name," said he. "Who speaks for me?"

A brisk little old woman moved out of the shadow of the door, and came down the path to the gate.

"Good evening to you, Mr. Bruner," she began. "I looked for you on the half-past-six ferry." Her voice lowered mysteriously. "Could you kindly stop in a moment? John and I would like a word with you."

Old Fritz followed her in without further speech, and nodded silently to her husband, an emaciated paralytic propped in a big chair by the open door.

"It's about our bit of money, Mr. Bruner," began the sick man, apologetically, passing his thin hand nervously over the worn tops of the crutches by his side. "We've got kind of anxious about having it here—"

"You heard that robbers broke into the safe at the mill last night, didn't you?" interrupted Margaret Hilliard. "And the night before that into the office at the ferry dock—"

"And seeing as I'm no account as to protecting it or her," the sick man went on, his patient tones tinged with a touch of bitterness as he nodded toward the wife, "why, we've talked it over, an' want to get you to take the money over to the city and put it in the bank for us, if it ain't asking too much of an old neighbor, Mr. Bruner."

Fritz nodded slowly and approvingly. "How mooch you got?" he inquired.

It was to John Hilliard he spoke, but Margaret hastened to answer:

"It's just six months more I've got to work at the mill, Mr. Bruner, and we'll have enough to buy a home, John an' me, an' I'll never have to leave him by himself any more. Not that Mis' Bruner and the girls ain't mighty kind, having an eye to him," she hastened to add, "but soon I can do that myself. Just yesterday my brother came to say that a place not a mile from him'll be for sale in the spring. A nice house 'tis, two rooms and a lean-to kitchen, an' a half-acre of ground."

Mr. Bruner nodded patiently.

"My brother, he says the place has got three apple-trees an' a cherry, an' a 'sparagus-bed. Then, too, he's promised me a young heifer, an' he'll bring my eggs and what I can raise into market with his, and," Margaret's voice dropped to a whisper, "we can have the whole thing for—four hundred an' fifty dollars!"

"How mooch you got?" again asked old Fritz.

"Some months we've put away as much as three dollars," answered the old woman; "again we don't get no more put by than two, and some months, when I can't get extra work over hours, and John's ailing so's to need the physic, we don't put away anything. But about twenty to twenty-five dollars we expect to save ev'ry year, and we've done it now a long time, John and I—"

"She's put by," said John Hilliard, "three hundred an' twenty-one dollars, for it's fourteen year I've sat here countin'; an' add to that the fifteen the tools brought—"

"Our son John's tools," explained the old woman, tremulously; "my boy who was killed in the elevator; an' then there's the hundred dollars the lawyer said was blood money."

"Dot it vas," assented old Fritz.

"The lawyer said, too," declared Margaret, "seeing as the firm knowed the elevator wasn't working right, he could have got big damages for us on shares; but the firm had buried my boy then, an' had give us that hundred dollars if we would agree to say nothing more about it, and as John here told the lawyer, our word is given, and it can't be taken back."

"Dree hundred und von hundred und fifteen tollars und dwenty- von tollars," repeated old Fritz, "dot makes—Vot do it make?" He pondered long, counting on his stubby fingers, "Four hundred und tirty-six tollars, goot!"

"And not a wink of sleep have I had for two nights," said Margaret, in a whisper, "for thinking about the robbers. I divided it up and hid it around in so many different places, I'm that fearful of forgettin' some of 'em. I keep myself saying all the time, 'Teapot, rag-bag, John's cushion, clock—'"

"Dot bees too mooch for you to haf mit you here. Soom night dose robbers coom. I vill take it in der morning und gif you mine vord to trust me py. Und in der evenin' I vill pring you vat dey calls von bank-book," declared Mr. Bruner, and forthwith bade them good night.

Fritz called for his money on his way down to the ferry the next morning, and evening saw him back again in the homely little bedroom which, with the shed kitchen behind, had been home to the Hilliards for half their lives.

Margaret took the little blue book he produced with a corner of her apron, and regarded it with awe. To her it represented the toil and sacrifices of years

"Read what it says, Mr. Bruner," she whispered, gazing at its pasteboard covers wistfully.

Mr. Bruner shook his head. "Nein, it bees Tchairman I reads, not American. But dot is all right vot it says. You gets your money any day you vants it. Dot is vere mine sons haf der money in dot bank. Vashington und Main Streets is vere it bees. My son tells me his bank be on der corner of Vashington und Main Streets, und so I goes dere mit your money."

Then, refusing to listen to his neighbors' expressions of gratitude, the sturdy old German picked up his lunch-basket and departed.

"Only six months more!" Margaret Hilliard would whisper to herself in the clatter of the great mills; then, as the weeks went by, "Now only five months—now four!"

Evening after evening she and old Fritz exchanged nods of mutual understanding as they met on the road home from the day's toil, and morning after morning Margaret would remind her husband, as she washed, dressed and fed him, that soon she would have to leave him no more.

Then, wending her way to the great mills, which stood opposite the big city in a village populated by the mills' own employes, she would laugh and joke among her companions in her tiny, cheery way, until they told her she was actually growing young again.

"And it's no wonder!" cried one of the girls. "For didn't she tell me herself she'd enough money put by in the bank to be able to stop work soon?"

Even the superintendent heard of it, and had a pleasant word to say about it on paying off the hands one Saturday night:

"So, Mrs. Hilliard, I hear you have begun a bank account?"

"Yes, sir, thank you. Mr. Bruner, he put my money in the bank for me some time ago," answered the smiling Margaret, proudly, "in the bank where his sons have their money."

"What bank did he put it in?" inquired the superintendent, casually.

"We didn't never think to ask Mr. Bruner the name of it, sir, but John, he says the boys told him 'twas the People's Bank, where he put it, along with theirs."

"Any place but the People's," said the superintendent to himself as she passed out. "I don't like the rumors about it. Monday I'll tell her she had better get it out."

But Monday was too late. At the dinner hour, the superintendent saw Margaret coming toward his office. There was a wild look in her eyes, and her lips were white.

"You'll tell me the truth, sir? You'll tell me it ain't so? They say the bank's broke, with mine an' John's money; but you'll tell me it ain't so!"

The superintendent was silent. Word had just come to him over the telephone that the People's Bank had suspended payments.

"Oh, sir, tell me the truth about it!" Margaret gasped.

"Yes, the People's Bank has failed," he said then. Margaret crept home. How could she tell John? But she told him, and he comforted her.

Poor old Fritz Bruner! For days he came around by another street, and in at his back gate, rather than face Margaret. To be sure, his own sons had lost their little all.

"But they bees young," he groaned, "und she bees an old voman with a husband like van leedle baby to care for, und I put it in—ach, himmel!—I put it in dot bank!"

But all the more the old woman must work for her John now; and the little bent figure that went creeping back to the mills was still Margaret Hilliard, though people who knew her well looked at her twice before they could believe it. She was forlorn and helpless indeed, for with this last blow her faith had forsaken her.

"Don't talk to me! Don't speak to me, let me alone!" she cried, fiercely, to any who spoke to her with sympathy. "Keep your words for yourselves, you'll need 'em when your time comes. I don't believe anything of what you say! I've tried it all. I've done nothing but hold out my hand to the Lord for help all my life, an' He's failed me!"

When her neighbors fell back aghast at such words, the old woman drew more and more to herself, and her heart grew bitterer and the face beneath the whitening hair looked hard and fierce.

Some weeks later the superintendent stopped her.

"I hear the bank will pay a little, after all," he said, kindly—"about ten cents on the dollar. You need not come to work to-morrow; take your bank-book and go over to the city. You will get about forty dollars. You understand? Go yourself—don't send any one."

The next morning, in her scant calico dress, her thin shawl and rusty bonnet, the fateful blue bank-book clutched in her hard, rough hand, Margaret went over to the city.

"The People's Bank, corner of Washington and Main Streets." It was not hard to find. Any one could direct her—it had figured so prominently before the public lately.

She found others there, who had come for what little remained of their money. Among them was one of old Fritz's boys, and by him she stood to wait her turn. At the window the teller took her book from her unresisting hand.

He looked at it in surprise, and then at her.

"What made you think you had money with us?" he asked.

She pointed to the book.

"Can't you read?" he asked, roughly.

She shook her head.

Old Fritz's son stepped up. "My father put her money in here for her—"

The clerk handed him the bank-book, pointing to the name on the outside.

Young Bruner's face changed. "I don't know how it happened," he said, "I—" He drew Margaret away from the window and led her out of the building.

"Wouldn't they even give me my little bit?" she asked, dazed and confused, as he hurried her across the street.

"Hush!" answered the young man, with almost a sob in his voice. "It seems too good to be true!"

They entered another building. He led her to a window in the brass screen that divided the room, and handed her book with a few words of explanation to a brisk-looking man behind.

Then the old woman realized that the teller, as well as those near by, was regarding her curiously. She heard the questions put to her as from a great distance, and realized vaguely that she was trying to answer them somehow. She looked from one to the other in bewilderment.

"I don't understand," she began, mildly. "What is it?" and her rough old hands went out feebly in beseeching helplessness.

"Don't you see?" she heard old Fritz's boy saying. "Father, he can't read English; he thought he was going to the People's Bank, but he really came to this bank on the opposite corner. Your money never was in the People's—you can get it as soon as you need it to pay for the home, all of it. Your book says, 'The Bank of Commerce,' and we none of us ever knew it!"

She understood enough of his explanation to realize that her money was safe—her John, herself, their old age still provided for!

There was a feeble cry, and in the big, crowded bank, old Margaret fell on her knees.

"You'll forgive me, Lord, You'll forgive me for turnin' from You when I thought it was gone! You know, Lord, what years it took to get it—an' I'm an old woman an' weak—You'll forgive me—"

It was the brisk teller who lifted her tenderly to her feet, while more than one man turned that his neighbor might not see his moist eyes. Then old Fritz's boy, picking up her bank-book, took Margaret down to the ferry and saw her safely across.

But it was old Fritz himself who came over that evening, his honest red face beaming behind the tears that rolled down his cheeks.

"Fader im Himmel," he cried, "mine old friend, but Gott bees goot, to make me haf so leedle American brains!" Youths' Companion.

Old Fashions.

How often in reading we run across some such phrase as this: "Old-fashioned ideas of morality." Or we hear a person about to deliver an impromptu homily say: "I may have old-fashioned ideas about the sacredness of the marriage vow, but—" Or a mother say: "My children could have more money than I had when I was a girl, but I am going to bring them up in the old-fashioned way. My girls shall know how to cook and do housework if necessary, and they will make good housewives and mothers."

"Father has such old-fashioned notions," said a high school boy. "He has made us all promise not to drink wine or play cards until we are 21. And he says it's the boys who have old-fashioned parents who become the successful men."

There are worse things than being old-fashioned. Progress is all very well—providing it progresses. But why should we feel it necessary to call our ideas of right living old-fashioned and to speak of them in a semi-apologetic manner? If old-fashioned, so much the better on that very account. They have the backing of experience. They have been tried and tested by our parents and our grandparents.

We hear of "old-fashioned politeness" and the "gentleman of the old school," who is so rarely seen among us. Why should these virtues be called old-fashioned? Is it not a discreditable reflection upon us twentieth century people?

Sweetbreads of Veal.

Sweetbreads are only of value for food when the animal is young. There is one in the throat, long and slender, and one near the heart—the pancreatic gland. In a grown cow these glands have become so hard that they are of no food value. The glands of a calf are preferred to those of a lamb. Heart sweetbreads are much larger and of better flavor than those of the throat. For all purposes of cooking sweetbreads are first blanched. They are soaked for three hours in different waters, one hour in each water, with a pinch of salt added to the fresh water when it is changed. When the sweetbreads are drained, after they have been soaked and cold water placed on them, heat them until they come to the boiling point, and drain and place them in cold water in a mould with a weight over them. Lard them a little. After this put them in a frying pan with pork skin. Let them simmer in a strong white broth until they have cooked for forty minutes in the oven. The sweetbreads will not color very much, but will be evenly cooked.

Still another method of cooking sweetbreads which have been blanched is to season them with salt and pepper, put a tablespoonful of sweet oil over them and broil them on both sides. Serve them with a little lemon butter squeezed over them.

There are many other ways of cooking sweetbreads, none of which take much time or trouble, providing they have been well blanched at the beginning. They are nice prepared as follows: Clean two heart sweetbreads. Cover them with boiling water. Add a tablespoonful of lemon juice, a teaspoonful of salt, a slice of onion and ten pepper corns. Simmer the sweetbreads for twenty minutes in the liquid, then drop them in cold water. Cut bacon in slices as thin as a wafer. Divide these slices into squares. Season the sweetbreads with salt and pepper, and roll them in melted butter and flour. String the bacon and sweetbreads on small skewers, and place them in a hot oven, on a pan, for about ten minutes. Serve each skewer of meat on a slice of toast. Care must be taken not to let the sweetbreads get too firm and hard. Cook them quickly. —Tribune.

Painting Your Bath Tub.

Paint it with white paint if it is the sort that tarnishes and refuses to become bright, and it will be metamorphosed into a spectacle of delight.

Be your own workman, get a can of common white paint and one of white enamel paint and a good-sized brush. Cut eight inch pieces of yellow soap into bits and dissolve them over the fire in a few quarts of hot water.

Fill the tub with extremely hot water, throw in a generous handful of powdered borax and the dissolved soap, and when your hands can stand the water scrub the tub with a brush, letting the water run off as the work is done.

Again partly fill the tub with hot water and scrub it with the brush and sand soap to make certain that all greasy particles have vanished. Rinse in clear hot water and thoroughly dry.

Cover with two coatings of the common paint, letting the first dry thoroughly before applying the second. Then follow with several coats of the enamel paint, which will dry more quickly than the other.

Use extremely hot water timidly until the paint is hardened.

The snake's tongue proves to be a most remarkable organ. A Maryland woman student finds that its chief function is connected with a sense of feeling without touch, and may be a finer development of the sense that enables some people to avoid striking obstacles in the dark. The forked tip and the numerous folds behind it greatly increase the surface exposure. The cells of the epidermis are interlaced by a net work of extremely fine nerve fibres, which center in a deep nerve plexus beneath the epidermis and extending out into the folds.

Hints to Housekeepers.

A mustard plaster made with the white of an egg will not blister.

Plunge your bread-knife into hot water before attempting to cut warm bread or cake.

No one should ever attempt to wash dishes without two pans—one for the washing proper and one for rinsing.

Sprinkle salt over the coal in your bin in liberal quantities; it will make it burn more evenly and prevent "clinkers."

A severe paroxysm of coughing may be often arrested by a tablespoonful of glycerine in a wineglass of hot milk.

For nervousness, try celery tea, which may be made by steeping the tops, roots, or even the seed, or by draining the water from cooked celery.

If you cannot procure dampened sawdust for use in sweeping, use bits of dampened paper sprinkled over the floor. Tea leaves stain and salt makes the carpet sticky.

French chalk finely scraped over grease spots will generally remove them. A layer of tissue paper should be pinned flatly over the chalk, so that none of the latter can escape, and the garment should then be laid away for three or four days. When it is taken out the chalk should be shaken off and the spot carefully brushed. Another way to remove grease is to lay a piece of blotting paper underneath the spot and a piece of tissue paper over it; then, with a hot iron, to press over the tissue paper. It will be found that the heat of the iron will melt the grease, while the blotting paper will absorb it.

The same precautions that are used in washing fine woolens need to be taken with silk. Prepare suds of white soap and fairly hot water, and add to each gallon of water two tablespoonsful of ammonia. If the ammonia is strong, use only one tablespoonful. Let the garments soak in the suds for some time, half an hour, or longer. Wash by rubbing with the hands and gently squeezing. Never rub on a board, and never rub soap on the silk, unless some spots are unusually obstinate. Rinse thoroughly; this means through two or three waters, the same temperature as the washing water. Iron when nearly dry. If the garments are very delicate press under a thin muslin.

The average "hired girl" appears not to know that in cleaning paint it is necessary to use extreme care in order not to injure it. The ordinary kitchen soap, which most servants use with unsparing hand, will not only remove all grease and dirt, but the paint as well; hence the careful housemistress will do well to prohibit its use altogether when there is any woodwork to be cleaned. The most approved plan is to first dust the room thoroughly with a painter's brush; then if the paint to be cleaned is white, to take a pailful of tepid water, add to it a tablespoonful of household ammonia and a small piece of whitening, and apply the mixture with a soft, clean cloth. Dark paint should not be washed at all, but instead should be thoroughly rubbed with linseed oil and polished with a piece of soft silk or an old silk handkerchief.



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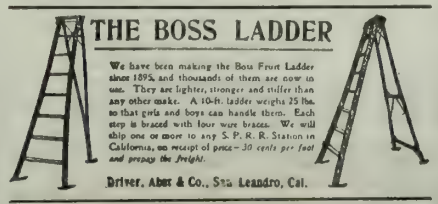
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The Markets.

San Francisco Produce Report.

San Francisco, August 2, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	$ 87 @ 85¼	87⅝@ 85¾
Thursday	87 @ 86¾	87½@ 86¾
Friday	87⅜@ 85⅞	88⅛@ 86½
Saturday	86½@ 84¼	87¼@ 85½
Monday	85⅞@ 84¼	87 @ 85⅞
Tuesday	86½@ 84⅝	87½@ 85⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	54¼@53¾	47⅜@46¾
Thursday	52⅝@52⅛	46⅞@45¾
Friday	53⅛@52¼	45⅞@45¼
Saturday	52¼@52⅛	45¼@45⅜
Monday	52½@51¾	45⅝@45⅛
Tuesday	52⅜@52	46¼@45⅛

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 44½@1 43½	$ —@—
Thursday	1 44⅞@1 44¼	—@—
Friday	1 44 @1 43½	—@—
Saturday	1 44⅜@1 43¾	—@—
Monday	1 44⅝@1 44¼	—@—
Tuesday	1 44⅝@1 44¼	—@—

Wheat.

After last week's reaction the wheat market became steadier and has ruled very steady during the current week. Prices in December wheat have not varied more than ⅜c either way. Spot prices remain the same and stocks are very light. Trading in December option has not been as brisk as last week, but there was still a very fair movement. The latest advices from Chicago show an easier market for wheat and a sympathetic decline is looked for in the local market. If this materializes the result may mean the putting of wheat on an export basis. As yet no export trade has developed owing to the fact that the price has been maintained at a figure far above a parity for export trading. Reports of the yield in the Northwest continue to indicate very large crops in all wheat growing sections, and this, together with similar reports from the wheat sections of the middle West, seems to warrant the belief that as soon as the new crop is fairly on the market considerable export trade will develop. The Government wheat report of August 1 says: "Spring wheat harvest is pretty good in Nebraska, Iowa and the southern portions of South Dakota and Minnesota. This crop has made favorable progress. No rust in the main is reported, except from scattered fields in South Dakota, where smut and blight are prevalent to some extent. Late spring wheat was materially damaged in Washington by hot winds of preceding week, but the early crop escaped injury. Harvest is general in Oregon, with about the average yield and quality. Winter-wheat threshing has been interrupted by wet weather in southern Illinois and portions of Missouri valley and Middle Atlantic States, but elsewhere the work has advanced satisfactorily. The harvest is finished except a small part of the crop in Michigan and New York.

California Milling	$1 55	@1 65
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 shipping	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1 43⅞@1.43⅝.

Flour.

There has been little change in the local flour market since last week. Prices are being well maintained by a fair inquiry, though trading for the current week has been light. The market is at present steady, trading being entirely domestic, the price being too high for export. A slight decline may be looked for when the new crop comes in.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The spot market for barley has been greatly strengthened during the current week and prices have advanced about 75c per ton. The spot market was greatly stiffened by the rather large advances made in the price of December barley, which ran up to $1.00½, the market remaining firm at that price. Receipts have been light, most of the barley now in first hands being held for a still further advance. Jobbers are unable to pick up much barley even at the advanced price. It is expected that this may result in an advance in December option. Export trade is at the present figure entirely out of the question, and it is probable that the advance will result in a falling off of the brisk domestic movement which has taken place during the current week. An advance of 2½c is noted in the price of nearly all spot barley.

Feed, No. 1 good to choice spot	$1 00	@1 02½
Feed, fair to good	97½@1 00	
Feed No. 1, December	97½@1 00¼	
Brewing, No. 1 to choice old	——	@——
Chevalier, No. 1 to choice	1 10	@1 15
Chevalier, common to fair	1 00	@1 07½

Oats.

The oat market is a little easier than it has been for some time past. Those who have any holdings at all are feeling more disposed to sell than heretofore. Choice lots are, however, still very scarce and command a good price. Off grades are plentiful and can be bought at $1.10 to $1.27½ per cental. Trading in futures has been fairly heavy this week, the price having ranged around $1.35. There are very few old black oats in the market and no new ones have as yet made their appearance. Prices given for blacks are, for this reason, largely nominal.

White oats, fancy feed	$ ——	@——
White, good to choice	——	@——
White, poor to fair	——	@——
Milling	——	@——
Black oats	1 45	@——
Red, choice new	1 30	@1 35
Red, fair	1 22½@1 27½	

Corn

The market shows signs of weakness, though the prices ruling this week are the same as at the last quotations. It is probable, however, that a decline will take place in this market shortly, as the export demand has dropped off entirely and there are still some considerable holdings in this market. Eastern receipts have been light, as the present stocks in this city are sufficient for milling purposes.

Large White, good to choice	$1 40	@1 42½
Large Yellow	1 40	@1 42½
Small Yellow	1 50	@1 60
Egyptian White	——	@——
Egyptian Brown	——	@——
Eastern, sacked	——	@——

Rye.

Receipts of rye are still very light, and even at the advance of 5c noted in the last report there have been no large quantities offering. The old stock was all cleaned up before the new arrivals began and the prices quoted are for new stock. From the extreme slowness with which the new crop is coming into this market it is probable that the crop is not a large one. The price quoted is being firmly held and an advance is predicted.

Good to choice	$1 45	@1 50

Buckwheat.

The market for buckwheat is now cleaned up entirely, with the exception of very light stocks held at some of the mills, and these have not been sufficient to supply the milling demand. As yet there have been no new crop arrivals, but it is expected that there will be some in a few days.

Good to choice	$2 25	@2 50

Beans.

As regards prices, there is no change in the bean situation for the current week. There has been considerable trading and a still further activity is looked for in the near future. Bayos seem to be receiving most attention just at present but, a good many off grade Pinks have also changed hands at ruling figures. There has been little movement of a jobbing character in Limas but, as stocks are small, no material decline in price is looked for.

Pea, good to choice, 100 lbs	$ ——	@——
Small White, good to choice	3 30	@3 50
Small White, damaged	1 50	@2 75
Large White	2 50	@2 85
Large White, damaged	1 50	@2 40
Pinks	3 25	@3 75
Pinks, damaged	1 25	@2 75
Bayos, good to choice	3 65	@4 00
Bayos, damaged	2 50	@3 50
Red Kidneys	3 50	@4 00
Reds	6 00	@7 50
Limas, good to choice	5 50	@5 65
Black-eye Beans	3 00	@3 15

Dried Peas.

Trading has been very light during the current week, but owing to small stocks now on hand prices are well maintained. Prices named are for old stock and some are largely nominal. Garbanzos of all sizes are now out of the market entirely. The market for California green peas shows a slight reduction in choice and a slight advance in off grades, showing that off grade stock has been well cleaned up. The new crop should come in within a month and until then no great activity is expected. Recent Eastern advices show that the prices for green peas are on a $2.15 basis delivered here. New Garbanzos from the river are now showing up, but the Alameda county crop will not be ready for market for several weeks. The market at the moment in these peas is entirely nominal, as no business has as yet developed with the East.

Green Peas, California	1 85	@2 10
Garbanzos, Large	——	@——
Garbanzos, Small	——	@——
Niles	1 75	@2 00

Hops.

There has been a small jobbing movement during the current week at figures around 16c, some sales being reported as low as 15c. Spot sales of prime to choice have been made at 17c and 18c. The movement has been light, however, and buyers have not been active. Jobbers prefer not to handle much old stock when the new crop is so close at hand. It is expected that the new hops will begin to arrive in this market about August 20th, and until that time no great buying activity is anticipated. It has been reported that new hops have been offered in the Eastern market at 18c, delivered. Some contracts for the future crop have been reported at 15c. On the whole the market is a shade weaker than at last reports and no advance is looked for before new hops come in. Crop reports are only fair for California, but in Oregon and Washington, as well as the foreign hop sections, reports all favor the growing crop.

Good to choice 1904 crop, nominal	15	@	18

Wool.

There has been little or no change in the wool situation since last week. The spring shearing has now been all sold with the exception of a few small clips which continue to arrive occasionally, these being for the most part Humboldt and Mendocino wools. Such clips are usually quickly picked up at about the prices quoted. There were some contracts made for fall wools a few weeks ago, but there has been no trading in futures for some days past. Fall wool is expected to begin to arrive in about two weeks.

SPRING.

Humboldt and Mendocino	25	@28½
Northern, free	24	@27
Northern, defective	22	@24
Middle County, free	23½	@25
Middle County, defective	18	@20
San Joaquin and Southern, free	18	@22
San Joaquin and Southern, defective	15	@18
Oregon, valley	26	@28
Eastern Oregon	16	@22
Nevada	18	@22

Hay and Straw.

Shipments of hay during the past week have been heavy, the total being practically the same as last week, that is, 5600 tons. Large quantities of hay have been sold, but as there are not sufficient teams available to move the arrivals, the tracks and hay wharfs are blocked. All regular handlers of hay are being crowded with shipments, and it is claimed that there are many cars of hay in the hands of the commission men which are still unsold. There is no change in the outlook. At present but very little hay is being exported and no export of coastwise movement is anticipated for some time.

Wheat, good to choice	$ 9 50	@ 14 00
Wheat and Oat	8 00	@ 12 00
Tame Oat, fair to choice	7 50	@ 11 00
Wild Oat	5 00	@ 8 00
Barley	6 50	@ 9 00
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 10 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	30	@ 50

Millstuffs.

The market on all kinds of millstuffs is firm. Middlings have seen an especially active demand and the stock now on hand is very limited. The sharp buying demand has caused an advance in price, present quotations being 27c to 28c, and very little strictly choice to be had. Cracked corn also shows a further advance, the market ruling very strong at quotations given. There has been some trading in shorts during the current week at an advance of $1 per ton over last quotations. The market is, however, largely nominal, as there is none arriving and nearly all of the mills are short of stock.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 50
Middlings	27 00	@ 28 00
Shorts, Oregon	22 00	@ 24 00
Barley, Rolled, choice	22 00	@ 22 50
Cornmeal	30 00	@ 30 50
Cracked Corn	31 00	@ 32 00
Oilcake Meal	33 50	@ 35 00
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

The movement of seeds has been very light during the current week, owing to the fact that this is the off season. It has been sufficient, however, to still further reduce stocks. Canary is very scarce and the price has advanced 6½c to 7c and very little is offering at that price. Quotations on mustard are largely nominal as no new seed has as yet come into this market. Dealers do not think any of the new crop of Trieste can be moved for over $3.50.

Flax	$2 25	@ 2 50
Mustard, Yellow	3 25	@ 3 75
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		—@—
Canary		6½@ 7
Rape		2½@ 3
Hemp		3½@—
Timothy		5 @ 5½

Honey.

There has been no noteworthy movement in honey during the current week. Prices remain steady as quoted. Receipts have been of fair size and show a very superior quality. Local jobbers complain that apiarists are holding above the ideas of local dealers and therefore little business is done. The following quotations are for honey in this market:

Extracted, Water White	5	@	5¼
Extracted, White	4¾	@	5
Extracted, Light Amber	4	@	4½
Extracted, Amber	3½	@	4
Extracted, Dark Amber	3½	@	3
White Comb, 1-frames	9	@	10
Amber Comb	7	@	8

Beeswax.

The movement in this article is very small but prices are being maintained at quotations given.

Good to choice, light ₱ lb	27	@	29
Dark	25	@	26

Live Stock and Meats.

The market continues very easy in everything except mutton, which, while there has been no further advance in price, shows a disposition to stiffen owing to the fact that receipts will not be large till after the fall shearing.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@	5¼
Beef, 2nd quality	4½	@	5
Beef, 3rd quality	3½	@	4½
Mutton—ewes, 6@7c; wethers	7	@	—
Hogs, hard grain, 130 to 200 lbs	5¾	@	6
Hogs, large, hard, over 200 pounds	5½	@	5¾
Hogs, small, fat	5¾	@	5⅞
Veal, large, ₱ lb	5	@	7
Veal, small, ₱ lb	8	@	9
Lamb, yearlings, ₱ lb	8	@	—
Lamb, spring, ₱ lb	8	@	9

Hides, Skins and Tallow.

The hide market is practically unchanged here. In the East the market has probably eased off a little from the situation of last week, but quotations have hardly altered. Here the market is well cleaned up, notwithstanding an inclination on the part of the tanners to curtail buying on account of the high prices. Some shipments of California hides and skins to the East are reported. Tallow is unchanged.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12½ @—	11½ @—
Medium Steers, 48 to 56 lbs	11½@—	10½@—
Light Steers, under 48 lbs	11 @—	10½@—
Heavy Cow Hides, over 50 lbs	11 @—	10 @—
Light Cow Hides, under 50 lbs	11 @—	10 @—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		3½@3¾

Bags and Bagging.

Stocks in grain bags are now entirely exhausted owing to heavy buying for the northern grain sections. The demand from those sections is still strong, but local dealers are unable to secure stock to supply it. Prices in cotton fruit sacks have advanced ¼c and are now holding very firm at 7c to 7¼c. Other prices are ruling strong at quotations given and the general tone of the market is excellent.

Bean Bags	$	5¼@—	
Fruit Sacks, cotton		7 @7¾	
Fruit Sacks, jute, as to quality		6 @7½	
Grain Bags, Calcutta, 22x36, spot		7½@7¾	
Grain Bags, Calcutta, buyer June-July		—@—	
Wool Sacks, 4-lb		33 @—	
Wool Sacks, 3¼ lb		30 @—	

Poultry.

The poultry market continues much depressed. Small and inferior stocks are entirely neglected and only fancy large stock is taken up at fair figures. This condition is rather owing to very heavy receipts than to any heavy falling off in demand and consequently prices have not as yet been influenced to any great extent. Early in the week receipts went up to as high as 160 coops per day.

Turkeys, choice Young, ₱ lb	$ 23	@	25
Turkeys, live gobblers, ₱ lb	18	@	19
Turkeys, live hens ₱ lb	19	@	20
Hens, California, ₱ dozen	4 00	@	4 50
Hens, large	5 50	@	6 50
Roosters, old	4 50	@	5 00
Roosters, young (full-grown)	4 50	@	5 50
Fryers	3 00	@	3 50
Broilers, large	2 50	@	3 00
Broilers, small to medium	2 00	@	2 50
Ducks, old, ₱ dozen	3 00	@	3 50
Ducks, young, ₱ dozen	3 00	@	4 00
Geese, ₱ pair	1 50	@	——
Goslings, ₱ pair	1 50	@	1 75
Pigeons, old, ₱ dozen	1 25	@	——
Pigeons, young	1 25	@	1 50

Butter.

The market is a shade weaker, last week's advance having been too rapid. Considerable storage was brought out, owing to a slight advance, causing shrinkage in the price of choice. Dairy butter

is coming in in better shape owing to the cooler weather, and has been in good request owing to high prices for creamery. Prices of dairy butter are unchanged. The market is still in good shape and no farther reaction is anticipated.

Creamery, extras, ℔ lb	23	@24
Creamery, firsts	22	@23
Creamery, seconds	20	@21
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	21	@22¼
Mixed Store	17	@18

Cheese.

Cheese is, on the whole, firmer than it was last week. The demand has improved and, though receipts continue large, the quality is good and the market is cleaning up better than for some time. Prices are more favorable to the holders of desirable lots.

California, fancy flat, new	11	@12
California, good to choice	9½	@10
California, fair to good	9	@ 9½
California, "Young Americas"	11	@13
Eastern, new	15	@18

Eggs.

The market is firm only on high stock; an advance of 1c is quoted on selected stock and a decline of 1c on store eggs. Receipts have been fairly large and, as a general rule, they are arriving in good condition.

California, select, large, white and fresh.	27	@28
California, select, irregular color & size.	24	@25
California, good to choice store	17	@19
Eastern firsts	20	@22
Eastern seconds	17	@18

Potatoes.

Receipts for potatoes have been large and of excellent quality. The demand is, however, still weak and prices show no disposition to advance. The market has no stability whatever and numerous complaints are heard on all sides from dealers.

Cal. Early Rose, ℔ cental	50	@	60
Cal. Burbanks, ℔ cental	75	@	1 00
Salinas Burbanks	80	@	1 00
Chile Garnet, ℔ cental	50	@	60
White Rose, ℔ cental	65	@	75

Vegetables.

The vegetable market is in fair condition owing to the cooler weather. The demand for onions is small and they have had a sharp decline. No export trade in onions has developed, and owing to the very large stocks of whites now on hand this article is threatened with a further decline. Red onions are now almost entirely out of the market. The quotations given for peppers are for boxes, as none are now to be had in bulk. Lima beans have been in good demand and show an advance of 1c per pound in price.

Asparagus, No. 1 to choice, ℔ lb	—	@	—
Asparagus, No. 2, ℔ lb	—	@	—
Beans, Lima, ℔ lb	5	@	—
Beans, String, ℔ lb	3	@	4
Beans, Wax, ℔ lb	2	@	3
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ crate	—	@	1 25
Egg Plant, ℔ lb	5	@	8
Garlic, ℔ lb	4	@	5
Mushrooms, ℔ lb	—	@	—
Onions, New Yellow Danvers, ℔ ctl	75	@	90
Onions, New Red, ℔ ctl	60	@	75
Peas, Green, ℔ sack	1 00	@	1 50
Peppers, Bell, ℔ box	1 25	@	1 50
Peppers, Green, ℔ box	1 00	@	—
Rhubarb, ℔ box	—	@	—
Summer Squash, per large box	50	@	60
Tomatoes, ℔ box or crate	50	@	65

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 30 to 30 lbs. gross.

Fresh Fruits.

The market has been further strengthened and may now be said to be in a fairly active state owing to continued coolness of the weather. Prices have advanced in a number of varieties, but this is partly due to scarcity of supply. Receipts of apricots have been light and the demand good and the result is noted in a further advance in price, the range now being 50c and $1.25 per box. There are very few prunes coming in and by the end of the week will be bare of this article. Raspberries are very high, but a falling off in the demand and quite large receipts indicate that a decline will take place. To-day's quotations are from $5 to $6 per chest. Figs are becoming scarce and it is probable that this week will see them out of the market.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 25
Apples, good to choice, ℔ 50-lb. box	75	@	90
Apples, fair to good, ℔ 40-lb box	35	@	60
Apricots, in bulk, ℔ ton	20 00	@	40 00
Apricots, ℔ box	50	@	1 25
Blackberries, ℔ chest	1 25	@	2 50
Cantaloupes, pony crate	1 35	@	—
Cantaloupes, ℔ standard crate	2 00	@	—
Crabapples, ℔ large box	50	@	65
Currants, ℔ chest	—	@	—
Figs, ℔ one layer	50	@	75
Figs, ℔ two layer	1 25	@	1 50
Gooseberries, English, ℔ lb	—	@	—
Gooseberries, other kinds, lb	—	@	—
Grapes, Seedless, ℔ crate	75	@	90
Huckleberries, ℔ lb	10	@	12½
Loganberries, ℔ chest	3 50	@	5 00
Peaches, ℔ large box	75	@	1 00
Peaches, ℔ small box	35	@	50
Pears, Bartlett, fair to choice, 40-lb box	1 50	@	1 75
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ℔ crate	40	@	75
Plums, ordinary, ℔ box	30	@	50
Plums, Simoni, ℔ crate	65	@	75
Prunes, Tragedy, ℔ crate	40	@	60
Raspberries, ℔ chest	5 00	@	6 00
Strawberries, Longworth, ℔ chest	2 00	@	4 00
Strawberries, large var., ℔ chest	2 50	@	4 00
Watermelons, ℔ doz	75	@	2 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The market is in a fairly active state, all kinds of dried fruits being in demand. Prices show slight advances in peaches, apricots and prunes. The demand for the latter has been especially good, and has gone far toward reducing the stock. Royal apricots, good and choice, have been selling freely at from 6 to 6½c. There has been an advance of 1c in the asking price for off grades. Fancy stock Silver prunes brought as high as 6½c, and prunes in bags show a material advance. The pack of apricots in first hands is still large, but owing to a good demand the market is ruling strong.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	6
Apples, extra choice to fancy, 50-lb boxes	6	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	6	@	6½
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box, 1-lb cartons	50	@	55
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	—	@	4½
Peaches, unpeeled, good to choice	6½	@	7
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¼@4½c; 50-60s, 3½@3¾c; 60-70s, 3@3¼c; 70-80s, 2½@2¾c; 80-90s, 2@2¼c; 90-100s, 1¾@2c; small, 1½@1¾c.

COMMON SUN-DRIED.

Apples, sliced	2¼	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	1½	@	2½

Raisins.

The raisin market is as reported last week, with only one or two adjustments of prices in seeded. The completion of the amalgamation of growers' and packers' associations is still awaited with interest. The holders of raisins are finding no trouble in securing the new prices. Interest in the coming crop is active, but no buying of futures is reported.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	3¾	@	—c
Fancy, 16-oz. Seeded	6¼	@	—c
Choice, 16-oz. Seeded			5 c
Fancy, 12-oz. Seeded			5½c
Choice, 12-oz. Seeded			4⅛c

Citrus Fruits.

There are now very few oranges in the market. Quotations on Valencias are largely nominal, as there are very few of these to be had. Lemons and grape fruit are firmer and limes are steady at former quotations.

Oranges, Navels, choice to fancy, ℔ bx	—	@	—
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	—	@	—
Oranges, Valencias, ℔ box	2 25	@	3 50
Oranges, Mandarins, small	—	@	—
Lemons, California, select, ℔ box	3 00	@	3 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	2 00	@	3 00
Limes, ℔ box	5 00	@	8 00

Nuts.

Stocks of both walnuts and almonds were still further reduced this week, buyers being unable to secure concessions from quoted prices. Reports from the growing districts as to the new crops are about as heretofore, indicating a fair crop of almonds and a short crop of walnuts.

Chestnuts, Italian, ℔ lb	—	@—
Nonpareil Almonds	13	@16
Ne Plus Ultra Almonds	11	@14
Languedoc Almonds	8	@11
Peanuts, fair to prime	4½	@ 5½
Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	7	@ 7½
Cal. Walnuts, No. 1 hard shell	11	@—
Cal. Walnuts, No. 2 hard shell	7	@ 7½

Wine.

The jobbing movement in wine continues light. Dealers report fair stocks on hand, with not a great deal of select wine to be had at first hands. Interest continues to center in the coming vintage, though very little information as to the intentions of wine makers is given out. Prices of last year's wines remain about as before.

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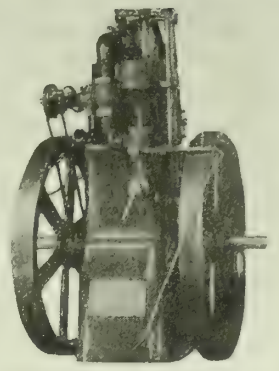
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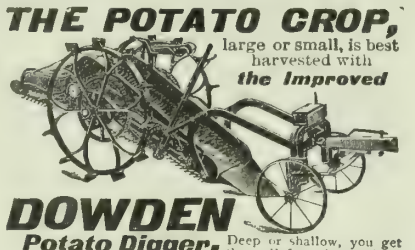
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SHEEP AND WOOL.

A Boston Account of California Wool Growing.

From the Boston Evening Transcript.

In our review last week of the wool market, we reported the sale of the Whitney clip, California wool, at 30 cents. We are authoritatively informed that this clip brought 33 cents, from its superior quality, the price being some 5 cents per pound higher than any California clip sold up to that time, although this wool generally leads the market by several cents per pound.

Owing to the yearly increase of areas given to the cultivation of fruit and grain in California, and the natural decrease of grazing lands, there has been, in the past dozen years or more, a reduction in the quantity of wool over that before yielded. The quality, however, has visibly improved. Meantime Texas and the Northwestern States and Territories have gradually increased in quantity and quality, but apparently insufficiently to supply the increased demand.

The climate and quality of natural feed in California do not sustain the high grade of wool grown in the best and most favored grazing sections of the world, of which Australia is a notable example, but in spite of that there has been established a high standard of excellence for the production of Spanish merino wool.

The sheep found in California by the early American settlers and existing for some years beyond the gold discoveries were of the most ordinary class, known as Mexican, yielding a scanty growth of hairy wool. They were descended from the sheep introduced by the early Spaniards, which had undoubtedly much deteriorated.

In the early fifties the first high-bred Merino sheep, to the amount of 300, were purchased by one of the Whitney brothers in Australia and shipped by sailing vessel to San Francisco, and they cost in the vicinity of $50 a head. Only 120 head survived that passage. From this small number, placed on the Spring Valley ranch in Placer county, have descended 20,000 head. The quality of these sheep was maintained for a few years by pure blooded Merino bucks shipped by the Isthmus of Panama route from selected stock in Vermont at a cost of from $300 to $400 per head.

About the time of the importation by Mr. Whitney from Australia, a flock of sheep were driven across the country to California from Ohio by Mr. Hollister. These two flocks had a marked effect in a few years on the wool product of the State, although the Hollister sheep did not exhibit the marked results of the Whitney sheep, which have retained their distinctiveness for a period now of almost fifty years.

An opportunity has been presented in these sheep, not given elsewhere in the State, of testing the climate and feed results for a continued period in one class of sheep, which after a few years was inbred, owing to insular situations, and afterwards depended upon its own selections.

It will be observed that during the nearly fifty years during which the Whitney clip has been grown in Placer county and sold annually in the Boston market, no apparent deterioration has been observed in its quality as shown by the several market reports. That of the Boston Price Current of May 9, 1874, said: "New Spring California has been arriving more freely, and meets with a ready sale at full prices, from 30 to 38 cents. A very choice lot, known as the Whitney clip, has been sold at a higher figure, supposed 40 cents per pound. But this is considered about the best clip grown in California, and the price realized can scarcely be looked upon as a criterion."

In the Price Current of May 13, 1876, is this reference: "The transactions in wool have been 433,000 pounds for the week, including the Whitney clip at an extreme price. The clip is equal to most of the Australian wool received, and shows what can be done in California if growers give this staple more attention. The condition was very superior, and if California would send us more of this kind, there would be very little Australian imported."

In the following years notices have appeared, in reviews of the wool market, of the same tenor. The last from a local wool market report of June 9, 1905: "The Whitney clip, which is one of the largest and best clips of the State, has been sold the past week at 33 cents, which is the highest price realized for a number of years. Owing to the care taken in breeding and its very superior condition, it is not to be compared to the so-called choice Northern wool, as it is equal in many respects to the Australian, and has always brought top prices."

These evidences show that the doubts which have been entertained by many that California was not capable of producing fine wool equal to that of Australia have no standing, and demonstrate that with intelligent breeding and care there has been no deterioration in quality for nearly half a century from the original standard existing from the period of importation.

This importation of 1856 of 120 head of fine wool sheep has given large benefits to the wool-growing interests of California, and for many years contributed fine breeding stock, which sold at full prices for distribution among the wool growers, and the owners estimate that from the original 120 head, now increased to about 20,000, that in wool, breeding sheep and mutton, a million of dollars has been realized.

Owing to a minute parasite which attaches itself to the surface skin of the sheep, and if unmolested rapidly increases to the injury of the sheep and wool, a semi-annual shearing is universal in California, so that this pest can be treated by dipping in sulphur, tobacco, or other washes. This treatment is not complete in effect, but very nearly so. This pest is generally in all sheep-growing regions, though entirely eradicated in some sections, and could be, and probably will be, in California when the stringent laws which are much needed are enacted. This parasite has in late years appeared in the various flocks of wild mountain sheep, of which there are over a dozen varieties from Alaska to Mexico, and has wrought serious destruction, and has made its appearance, according to late accounts, on elk and other animals.

Maltese Goats.

(From United States Consul John H. Grout, Valetta, Malta.)

I have been receiving many inquiries from persons in the United States concerning the Maltese goat. Judging from the extensive information desired by the writers, it would appear that there is a serious disposition to import them. I submit herewith a report embodying statements made by me several years ago in response to inquiries then made and much new material. For years the Maltese goat has been regarded in all parts of the world by those interested in raising goats as a very superior animal, not only on account of its milk, but as a breeder. There must be something in the climate of these islands that makes this possible, for pasturage is very scant, and the herds which are driven out twice a day seem in some way to find nutriment in places where an ordinary cow would grow poor and pine away. If there is one thing receiving good care at the hands of the Maltese, it is the goat, and there are stringent laws in force requiring cleanliness and attention to its welfare. The population of these islands is about 203,000, and almost wholly dependent upon goats' milk. A few cows are kept here, but their milk is not regarded with favor, owing to lack of pasturage. In addition to the limited herbage, the sustenance of the goats is added to by feeding them with carob beans and mixed cotton seed and bran, the extra feed costing about 7 cents per day per goat. It would cost much more to feed cows to produce even fairly good milk, which would render the milk too expensive for general use. For this reason such cows' milk as we have is of very inferior quality, and very limited in supply.

It has been estimated that there are about 12,000 goats on the islands. It would be difficult to give the exact number on account of their frequent shipment to Tunis, Italy, and other Mediterranean countries. It is an old adage here that no matter how much better a Maltese goat may be fed and pastured elsewhere, it does not thrive as well as at Malta.

There are two varieties of the goat, the short and long haired. In color they are brown or white, about equally divided. As a rule they are dehorned early. The milk produced is of very superior quality, perhaps not as rich as that of an ordinary cow, and practically without cream, but, nevertheless, very acceptable for table and cooking purposes. The average height of the goat is 2 feet 6 inches, and its weight often reaches nearly 100 pounds. No special attempt seems to be made by the herder in the matter of preserving or refining strains, but, nevertheless, the Maltese goat seems to keep up its reputation for appearance and milk production. As a rule the Maltese goat does not breed before it is fifteen months old; and generally breeds once each year. It is not milked within three months of breeding time and will produce milk until it is eleven or twelve years old.

Very few things are essential to care for the goats. They are kept in herds of from six to thirty animals, and one attendant often has the full charge of and milks the latter number. It is an ordinary sight here to see the herds driven through the principal streets and milked at the doors of residences where milk may be required. This occurs not only once, but two or three times each day, and for this reason householders do not purchase their day's supply at one time but in small quantities, as it is required. Goats' milk is sold at from 8 to 10 cents a quart. The small quantity of cows' milk sold is bought by a few English residents, and costs about 8 cents a quart. Goats' milk is not used here for cheese or butter making. There is a variety of fresh butter and a peculiar kind of cheese produced in the islands, but it is made of sheep's milk. Sheep, however, are very limited in number, and need hardly be taken into consideration. The meat of kids, after inspection by the health authorities, brings about 10 cents per pound. The law requires that they be at least one month old before slaughter, at which time they are to weigh not less than twelve pounds. Goatskins are sold with the hair on, and skins bring from 18 cents each upward. The average yield of the Maltese goat is from two to two and one-half quarts of milk daily. Its keeping quality is about the same as that of cows' milk, and it is not uncommon for it to keep for twenty-four hours.

The average price of a fair Maltese goat is $15. Some of extra merit bring much more. Most of the persons writing to me desire to know the cost of shipping from here to the United States. This is rather a difficult question to answer, inasmuch as arrangements would have to be made at the American port rather than here. Another thing that should be considered is that it would prove a very expensive, and perhaps useless, matter to ship them singly or in very small numbers. Facilities are very limited on steamers leaving Malta for the United States. I believe, however, that if, say, 100 goats were sent from here to Palermo to be there transshipped to the United States, the cost might be estimated at about $1750. This would include the cost of the goats and the freight. Food sufficient to last the herd from Malta to the United States could easily be shipped at this port upon departure. I believe that in estimating the cost of food 7 cents per day per goat might safely be reckoned.

Valetta, Malta.

The Collie.

All who love a pure-bred Scotch collie (and who does not?) will be interested in the following appreciative sketch, by R. E. Jones of Paducah, Ky., in an Eastern exchange:

While the origination of this improved sheep dog, the all-purpose stock dog, the king of all drivers and herders, cannot be traced, yet it is, no doubt, a cross of the best known sheep dogs of earlier days, which are all classed as the race of wolf dogs. These are bred most extensively in England and America and are regarded as the purest and most intelligent of all breeds of dogs. The collie stands 18 to 24 inches high, in color black with white points and collar. These are the most popular colors, while they are bred in pure white, or white with tan or sable spots on head or body. They have a long pointed nose, flat head nicely chiseled, ears stand well up with tips breaking forward, eyes very bright and with human-like expression, tail of medium length slightly recurved with long frill. In coat the collie has long shaggy hair, with abundant breast and body frill. In disposition they are similar to the old English sheep dog, which in my mind are their far-back ancestors, very peaceable among themselves, yet very determined in their charge of duty, always ready or willing to drive or watch stock of any kind. Our modern collie has made great advancement. Breeders have bestowed great attention on the physical developments of our modern stock dog, and availing himself of natural variations, by careful selection and intercrossing, molded the collie into an almost perfect form. He has also, by education, developed its moral and intellectual capabilities so that the collie may, in this respect, be said to have within its own limits kept pace with its master's advancements; and it is undoubtedly owing to a certain community of feeling existing between collie and man that this domestic animal has, since the earliest time, been regarded as the companion as well as the humble servant of mankind.

There are few passions of man not shared in by the collie. It is like him, subject to anger, jealousy, envy, love, hatred and grief; it shows gratitude, pride, generosity and fear. It sympathizes with man in his troubles, and there are numerous instances on record of it showing sympathy for the distressed of its own kind.

The collie has a great memory, evidently assisted thereto, as man is, by the association of ideas; that it is not devoid of imagination may be assumed from the fact that it dreams, following in its sleep imaginary herds. Its judgment is often singularly correct; while it may almost be said to have a religion, in which man is its God, and his will its rule of conduct, disobedience to which produces an evident feeling of shame and a quiet submission to punishment. It shares with man in the awe of the unknown, and the most courageous collie will often tremble at the sudden rustle of a leaf. While the possession of such facilities has rendered him fit above all other animals for the companionship of man, the physical and intellectual qualities characteristic of the collie have been seized upon and developed to their utmost by breeders, so as to enable him to use the collie for a great variety of purposes.

In England and America our modern collie has been taught to drive, herd and look after cattle, hogs, sheep, horses and poultry, these being their chief occupation, and their training is exceptionally easy administered. As I said above, they are very apt and have a great memory. Once shown what is wanted of them it is always done that identical way. So in teaching and training like a child use the correct method from the start. In conclusion, I will say no household is complete without a collie, whether for work among stock, a watchdog or companion, and let me say here I would never raise a child or children without a collie. My boy has enjoyed more pleasure with my many collies than any one thing of amusement that we could have pur-

chased for him. They are kind and obedient, always anxious to amuse and be in the little ones' company.

They can be taught to drive like a pony and will pull them about in a wagon, which seems to afford them as much pleasure as the child. I will call attention to one of my dogs, Wellsbourne Pearl. This noble old lady has grown up with my little boy, and among all the collies he picked her as his choice and has always been her most devoted companion and she his, and is always ready and willing to accompany him in play or in his roams about the farm, and sorry would it be for any trespasser to interfere. Among the twenty-five to forty collies I always have on hand, not a dog in the entire lot but I would trust any baby with. In all my experience with collies I never knew one that would offer to harm a child in any way. It seems a sense of nature with them that a child cannot look after itself, and it at once becomes a part of their duty to look after them. The collie may well be termed the king of the canine race.

THE VETERINARIAN.

Answers to Queries.

By E. J. Creely, D. V. S., Dean of San Francisco Veterinary College.

A STOMACH TROUBLE.

To the Editor:—In the spring time of the year it commences to appear. Small, hard lumps, as large as a marble, commence to appear on the front half of the body and shoulders of my horse, so it makes him tender when I work him. Sometimes they go away and then come back again; but he does not appear sick. What would you advise me to do to or give him?—Reader, Kingsburg.

ANSWER BY DR. CREELY.

Give a good purgative (1½ pint raw linseed oil), feed wet hay, carrots, bran mashes, and give a tablespoon of saltpetre each evening. Apply externally: Olive oil, 8 ozs.; spirits camphor, 2 ozs.; alcohol, 2 ozs. Dr. Creely.

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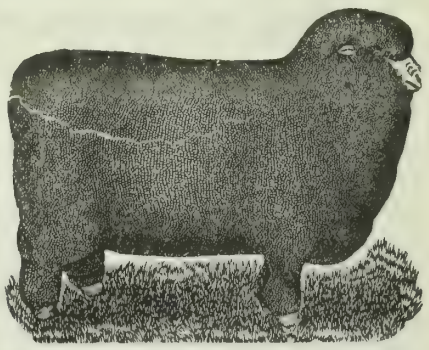
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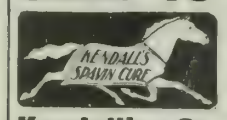
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THE DAIRY.

Silo Construction and Use.

From an address at Southern California Farmers' Institutes by Mrs. Minna Eshleman Sherman of Fresno.

Every year the value of ensilage as a food increases in our opinion. The waste of the green feed in filling a silo, and again in feeding it out, is much less than the loss from handling brittle hay. We have often wished for a simple way to estimate how far the loss in handling alfalfa hay would go toward paying for the extra hauling of it when put into the silo green. The silo is cheaper than a hay mow, for when it is considered that a silo of 350 tons capacity for ensilage will hold only thirty-one or thirty-two tons of hay, we can see the saving in building space; or if a good barn has been already built the silos may be placed inside and the expense of a second roof saved.

The Minnewawa Silos.—The two silos on Minnewawa ranch were built before the cheaper form of stave silo had been used long enough to demonstrate their merits. For they are good and they are cheap—so cheap that no one should hesitate to put one up for even a few cows, any more than they should hesitate to buy a small separator. To our minds, both are a necessity in even the ten-cow dairy.

The two silos seem to be practically indestructible, excepting by fire; so we are not likely to build another silo; yet, if occasion demanded a third one, it would be built in the cheaper stave form.

The two silos are of wood, built entirely above ground; a low brick and cement foundation wall raises the wooden sides 18 inches above the ground. The interior ground surface is filled with 6 or 8 inches of coarse creek sand placed directly upon the natural surface of the ground. If it were not raised, the weight of the ensilage would depress it below the outside surface, and the rain water as well as the extra water from the silage would be held and rot both the ensilage and the building. This plan is practicable for the reason that we are free from rats. Where they abound, a cement floor with a good, sloping drain must be used to keep them out, or they will burrow into the ensilage, leaving long tracks of moldy feed where they have admitted the air from the outside.

A Square Silo.—The first silo we built is square, or, rather, has two square pits in one building. It is 32x16 feet and 24 feet high from the sills to the roof-plate. It is divided into two pits, each 16x16 feet. The framework is formed by standing studdings of common mountain pine on end every 14 inches. On the inside the corners are braced and the angle reduced by placing 3-foot pieces across them, while the outside form is left square. Inside the rough sheeting boards are placed horizontally close together over the sides; then heavy tarred paper is put on and carefully lapped to exclude all air; over this is placed the surfaced and matched 4-inch lining boards. Outside the sheathing is covered with rustic and painted, for there is pride taken in the appearance of the farm buildings around Fresno. It also seems to me that no one can afford to have unpainted buildings for the dirt to lodge on, for if the owner permits dirt on the outside, it is hard to convince the men inside the building that "Cleanliness is next to godliness."

One of the corners of each pit is fitted up as a chute with doors opening inward, one after the other, all the way down the side. These doors are closed as the silo is filled and tarred paper placed over them, then sacks nailed closely on, and a second rough door holds them pressed in firmly. These doors must be as close as the body of the silo itself or the air will enter.

On the roof of the silo is a dormer window, into which the end of the elevator carries the feed, cut in 2-inch lengths by the cutter. The cutter stands on a platform raised 4 feet from the ground and is power-driven. The wagons unload either onto the platform or directly on the traveling table of the cutter.

A Round Silo.—The large silo is 30 feet high and 26 feet in diameter. It is circular and stands on a brick foundation. It is built the same as the other, except there are no corners to cut off and consequently no side feed chute. So, in removing the silage, we send it down outside, using a long canvas sewed into a cylinder, or sack, with an iron hoop in each end to keep it spread, one resting on the wagon bed, the other at the door nearest the level of the silage. This makes the loading of the wagon easy and no ensilage is wasted. In the East, some of the dairymen are of the opinion that it does not pay to tar the inside of the silo, but let the acids from the ensilage eat the lining boards and destroy them in four or five years. Now we think it pays to tar every year. After seeing this opinion in print, we watched to see just how much labor it was to tar the inside. The two 16-foot square pits of the small silo took 4½ gallons of tar and 10 gallons of gasoline. Texas Sam and Missouri Joe were three and one-half hours putting it on. The lining boards in the silo are as good as when first put in, after eight years of service, and much of the time this small silo has been filled twice a year. When the tar is properly cut with the gasoline, it spreads evenly and dries quickly, and in two or three hours all odors are gone. The silo can be tarred one afternoon and filling begin next morning, without fear of having the silage taste or smell of tar.

Another reason for tarring is that the ensilage does not adhere to the sides. When the tarring has been poorly done, the ensilage sticks so closely that it is necessary to use a stiff broom or a hoe to loosen the lumps that have moulded fast to the unprotected boards. These masses weigh from one to ten pounds, and are often 3 inches thick. If they are left clinging to the sides when the silo is filled, there will start from them a white rot that will destroy several pounds of ensilage.

Good and Bad Silage.—Nearly everyone coming to see our silos are ignorant of the qualities of ensilage and think it a fermented or partly decayed food, when really it is simply a canning process carried out on a large scale. The corn heats and drives out the oxygen, converting the starch into sugar, and the heavy carbonic acid gas settles down to help exclude the air. If the sides are absolutely air tight and the ensilage has been well tramped down, the temperature rises rapidly. When it reaches 150°, the ferment or bacteria producing it are destroyed; and the further breaking down of the starchy matter into lactic or acetic acid is arrested. As it cools, the coating of mould appears on the surface and seals it air tight. This makes bright, sweet silage, loved by the cows, filling the milk pail and rolling out the butter fat, bringing into the farm home many comforts, and into the lives of the children the advantages of education.

In California, complaints come to us of silage failing to keep; of its being very sour; of its tainting the milk. If it fails to keep, the building is probably defective. If it is too sour, the material or food stuff was not sufficiently matured when placed in the silo and could not help developing into vinegar, just as grape juice when it has sufficient saccharine matter makes wine; but if reduced to 12% of sugar and not checked by addition of alcohol, it makes vinegar.

The next common cause of failure in California is putting up the ensilage too dry. If too dry, small masses of mould will appear in places all through it. This mould does not seem to be injurious to cattle, though it imparts a slight bitterness to the taste that they do not seem to appreciate.

If the silo has been filled too fast, the resultant heat often makes it too dry. To distribute the moisture evenly, we have a ¾-inch faucet over the end of the carrier, and keep a small stream of water flowing constantly on the cut food as it is carried up into the silo. We never fear it becoming too wet; as the silos are on the earth without cement floors, the absorption is perfect. The moisture shows on the ground 2 or 3 feet from the silo a couple of weeks after the filling is completed.

Filling.—Now about filling the silos fast. This was our costliest mistake, for we were told by the Eastern authorities to fill at once. Our feed stuffs are drier when brought in than in the East, and the dry heat at Fresno is also intense; so the outside of the silo is heated to over 100° where the sun strikes it directly, and the ensilage warms up with internal heat, and will scorch and turn dark. We say "scorch" for want of a better term, for in the darkened sticky mass there is quite a suggestion of burnt molasses candy. The cows will eat this readily enough, but they do not toss their tails in the air and race to the mangers as they often do when the silage is sweet.

By filling one of the pits of the silos half full and then filling on the other pit until the former has cooled down to a temperature not too hot to hold the hand in about a foot below the surface, all danger of overheating is avoided. The pit is then filled to the top and well tramped.

It is particularly important not to overheat alfalfa ensilage, which requires longer to cool down and more tramping to make it keep sweet than is needed with corn. Peas and oats require the same careful handling. Corn ensilage is so easy to make perfect that it would seem only the greatest carelessness could make it spoil.

The settling of the ensilage after filling shows whether it has been well put in. Ten feet of alfalfa should not settle more than 2½ feet; oats not more than 3 feet; barley and wheat 3½ to 4 feet; corn about 2 feet. If the first filling settles more than this, the men tramping should be watched and made to tramp the sides more thoroughly. If the men are told the above figures before they start to tramp, they will do better work. I am more than ever convinced that we gain intelligent cooperation by letting the men understand what we are doing and why. It is more peaceful for them to discuss ranch facts at their table than to have the teacups and plates fly through the air during the heated disputes over religion and politics.

Ensilage, like alfalfa, taints the milk from the outside of the cow, not through her body. It is, therefore, better to feed it in the manger outside her milking barn. After the cows have finished all they care to eat, remove the remainder to the calf lot.

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AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

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ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

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GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

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MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

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PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham. 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

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STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec ; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D. Magnon.

State Grange to Meet at Napa.

Arrangements are already being made for the meeting of the State Grange, Patrons of Husbandry, at Napa, beginning October 3.

THE POULTRY YARD.

The Relative Value of Different Breeds.

By James Dryden in Bulletin No 92, Utah Experiment Station.

Which is the most profitable breed? is a question that is more frequently asked probably than any other. It is one, however, that a peaceably inclined man hesitates about answering or expressing an opinion upon. However, the writer ventures to give the results of several years' experiments with different breeds at this station, believing that they are of value as tending to show characteristic differences in egg-laying capacity. The relative merits, of course, of the different breeds can not be accurately or definitely determined by any series of experiments, but they may serve to indicate some of the characteristic differences of different types of fowls. Our experiments show pretty conclusively that, so far as egg production is concerned, the question of breeds is subordinate to the question of individuality. There are good and poor layers in all flocks, and the range between the good and the poor is very great, the records at our station showing a range of from no eggs a year to 242, and, so far as these records show, all breeds are alike in this respect. The difficulty in selecting the good layers of flock for breeding stock is probably the cause of this condition.

Our experiments have extended over a number of years, with a great number of individuals, as well as of different strains, of each breed, and it is believed that the average of these tests will afford some indication of the relative egg-producing merits of the breed represented.

The records given are of pullets, or of the first year's laying. The breeds represented were Barred Plymouth Rocks, White Wyandottes and Rose Comb Brown Leghorns. The experiments with other breeds have not been continued long enough to warrant comparisons.

In yearly egg yield, the table shows that the Leghorns and Wyandottes are practically equal, the former averaging 147 and the latter 149 per fowl. The lowest record made by any pen of Leghorns was an average of 131 eggs per fowl, and the highest 191. The best record of Barred Plymouth Rocks was 161 and the poorest 80, the average of all pens being 125. The best pen record of the White Wyandotte was 201 eggs per fowl and the poorest 101, the average of all pens being 56 to 78.9 cents worth of food per fowl during the year. The Wyandottes ate from 82 cents to $1.12 worth of food per fowl, and the Barred Plymouth Rocks from 57 cents to $1.26. The food cost of eggs laid by the Leghorns was from 4 1 cents per dozen to 7.1 cents, averaging a trifle more than 5 cents per dozen. The eggs laid by Wyandottes cost from 6 cents to 12.9 cents per dozen. The food cost of the eggs laid by the Plymouth Rocks was from 6.5 cents to 12.4 cents per dozen.

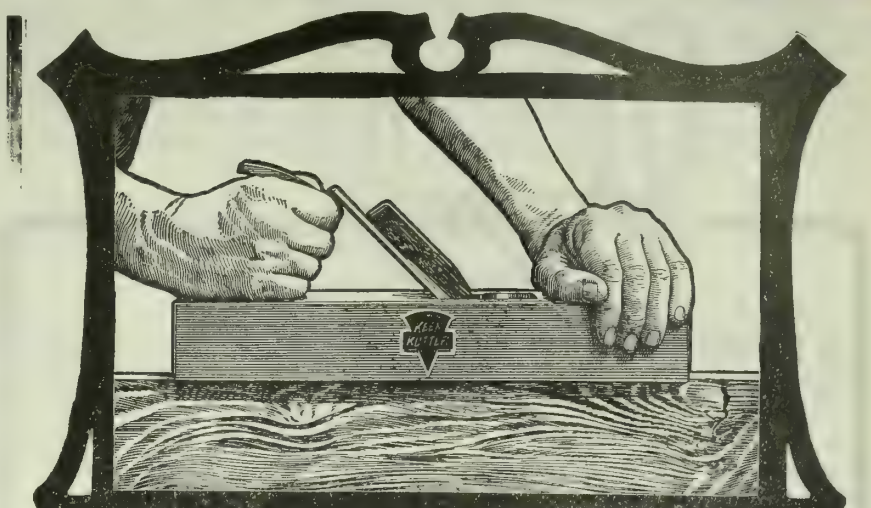
The table also shows the profit per hen on food eaten. This ranged from 16 cents per fowl to 90 cents for Barred Plymouth Rocks, and averaged 51.1 cents profit. With Wyandottes it ranged from 19 cents to $1.78 per fowl, and averaged 88 cents. With Leghorns the poorest pen made a profit on food of 63 cents and the best pen a profit of $1.79, averaging $1.12 per fowl.

The final test, the per cent profit on food, shows that the Leghorns made a profit on food eaten of from 80% to 246%, and averaged 170%. The Wyandottes made a profit of from 17% to 178%, and averaged 89%. The Plymouth Rocks made a profit of from 22% to 97% on food, and averaged 58%.

Some Deductions.—The results given above apply only to the laying year. The cost of raising the hen to laying age is not taken into account, nor is the value of the hen at the end of the laying year.

The cost of feeding the Wyandottes was about 50% more than the Leghorns. We have made no experiments on the cost of raising the chicks to laying age, but assuming that the Leghorn chick eats 20 cents worth of food up to laying age, it should cost probably 50% more to raise the Wyandotte, or say 30 cents. For every pullet there will be a cockerel to raise at similar cost, and marketed. At five or six months of age the Wyandotte cockerel will weigh about twice as much as the Leghorn cockerel, and should bring about twice as much in the market. The price for cockerels will depend, of course, upon the condition of the markets in different sections, upon the season of the year, and the methods used in handling and marketing. The Wyandotte cockerel should bring 50 cents and the Leghorn probably 30 cents. At the end of the year the Wyandotte hen will be worth about twice as much as the Leghorn hen in the markets, or say 50 cents for the former and 25 cents for the latter. This will make a total income from the Wyandotte of $2.88, and $2.32 for the Leghorn, including the value of eggs laid and amount received for cockerel and hen. Deducting from this the cost of feeding the Leghorn cockerel, the pullet and the hen, or $1.05, there is left a profit of $1.27 for the Leghorn. On the same basis the cost of food for the Wyandotte cockerel, pullet and hen would be $1.60, which deducted from the income, leaves a profit of $1.28.

The calculation, of course, must be taken with reserve, as so much depends upon the prices of poultry and eggs as well as of food. In city markets better prices could undoubtedly be obtained for eggs than were received in our local market, our results being computed on local market prices. On the farm the food cost could be very much reduced. Chickens can be raised on the farm during the summer months at a very little cost for food.



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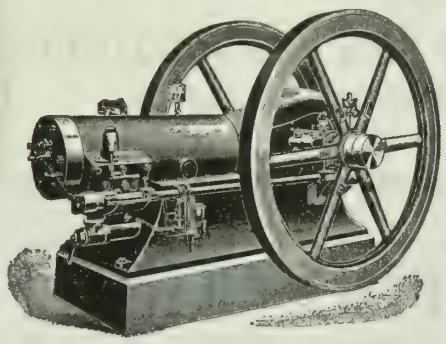
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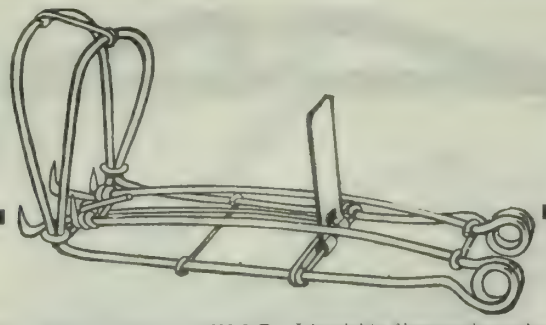
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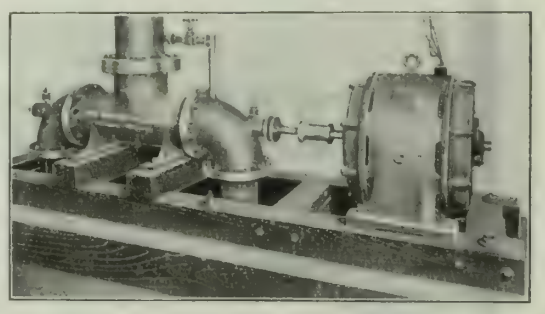
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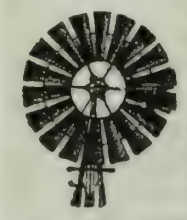
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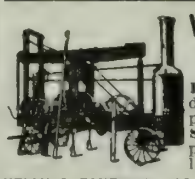
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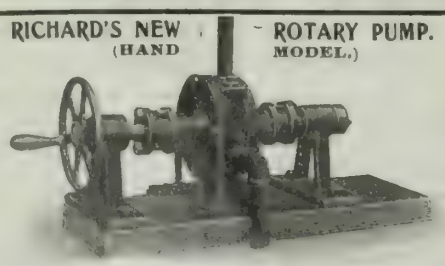
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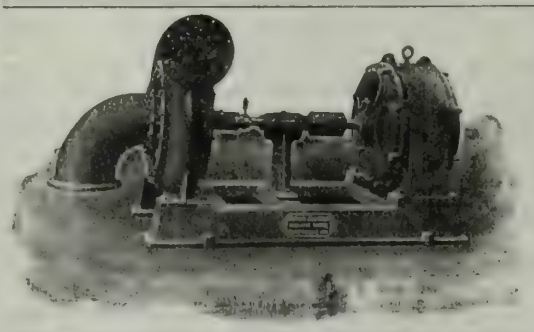
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THE PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 7. SAN FRANCISCO, SATURDAY, AUGUST 12, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.



Branch of an Apricot Before Thinning; Note the Fruit Hanging in Clusters.

Growing Good Fruit.

There is one large establishment in California which is a demonstration of the feasibility of combining under one management the growing, canning and drying of fruit on a large scale. The late J. H. Flickinger of San Jose believed it possible, and proceeded to realize his conception, and his reward was to see the demonstration of his idea in a horticultural and commercial success which has itself become his enduring monument. Upon his lamented death a few years ago, the J. H. Flickinger Company was organized, and the business which he established has been continued and expanded as he intended that it should be by Mr. L. F. Graham as manager and those associated with him. The establishment and its output are a credit to the State, and the latter enters all the markets of the world. An illustrated monograph has recently been issued, which enables one to understand more fully the principles upon which the business has been built up and the means employed. It shows both growing and manufacturing branches of the establishment, and its issuance should prove of much business advantage.

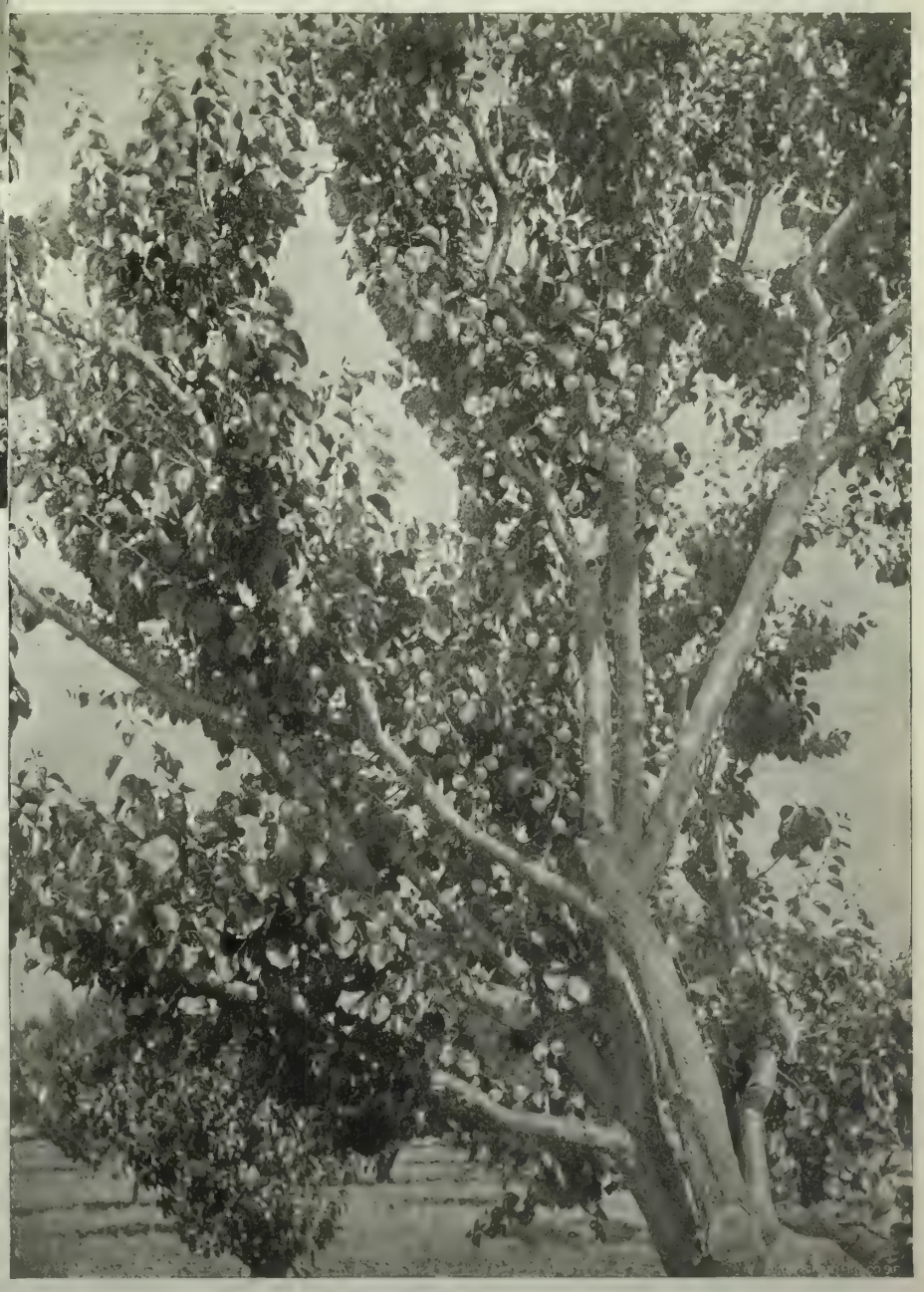
What particularly interests us at this time is the breadth and exactness of the growing operations. The foundation principle is that fruit, to reach its highest degree of excellence, must be allowed to ripen on the tree; and then to retain its rich, luscious flavor, must be processed almost immediately. To attain this end the company planted its own orchards, covering between six and seven hundred acres, with the choicest variety of fruit trees of the following kinds: Cherries, apricots, plums, peaches, pears, and prunes, and established its canning and drying plant in the very midst of these trees, keeping constantly in mind the necessity of producing only the finest fruits, and sparing no expense to achieve this result.

By fertilization, thorough and constant cultivation, severe and intelligent pruning, the trees are kept strong and thrifty and in condition to produce the very largest and finest fruits.

After the fruit has set and grown to the size of hickory nuts, nature is assisted by carefully thinning the trees—that is, picking off a majority of the fruit, and leaving the balance so uniformly distributed over the tree that each twig and branch will bear its just proportion of the burden. After the fruit has grown to maturity, skilled men are sent into the orchard to select from each tree only such fruit as has reached that highly colored, rich, juicy, luscious condition. This is done each day during the season until all has been picked in just exactly the right degree of ripeness. After the fruit is picked it is immediately taken to the cannery in wagons having the most delicate springs, and over roads that are as smooth as a floor, carefully watered and free from dust. After the fruit is weighed into the cannery it is carefully and skillfully graded, selecting only such as reach a high standard, and sending the rest to the drying ground to be dried in the sun.

Such is an outline of the process by which fruit of high quality is taken directly from the trees to the cans without injury by delay or transportation. It is an idea which many tried to embody in their work, but few succeeded because of the commercial difficulty of combining growing and manufacturing, accumulating capital therefor and handling the manufactured product on a large scale successfully. It is to the credit of the Flickinger Company that they have accomplished this result.

The pictures on this page show by the aid of the camera the work of thinning apricots, reducing the burden of the tree and increasing the size of the fruit, to which we shall refer farther as opportunity offers.



The Same Branch After Thinning; Note the Difference in Fruit Clusters

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, AUGUST 12, 1905.

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The Week.

Summer has progressed fairly this week and conditions remain much as noted in our last issue. We are now less than a month from the State Fair and a word of exhortation may be timely. As stated before in these columns, the State Board of Agriculture both needs and deserves the interest and help of the people. The directors are laboring under disadvantages in their effort to hold an exhibition under the new law, which prohibits book making and pool selling on the fair grounds, because these shady interests pay well for the evil they do and, therefore, help to meet the expenses of the exhibition to a large extent. We fully believe their money is tainted and the State should not profit by it, and that is the theory of the new law. At the same time it is only fair that those who believe the society should proceed without this income should do what they can to draw out good money to take the place of the bad. In other words, as we are to have a clean fair, everyone who believes in it should help in some way to make a clean fair prosperous. This can be done by exhibition of good, attractive stuff, by increasing gate money by patronage, and by helping the local organizations who are getting up county exhibits, etc. It is not quite right to proclaim against a bad thing and allow a good thing to perish for lack of support. Activity in the leg muscles against evil is good provided it is accompanied by activity of the finger muscles in the region of the pocket. We have a thoroughly good man at the head of the thing, Senator Rush of Solano county, and a good lot of men associated with him, but what can they do without the people to support their efforts ?

Of course, there will be gambling in the vicinity of the fair. The Sacramento Union says: "In sporting circles there is a well-developed understanding that pools are to be sold near the entrance to the race track. If return checks are not issued a high building, something like the Tower of Babel—high enough to overlook the track—may be erected." All right; that is just what is wanted. If the evil is actually cast out of the fair grounds, that will do for the present. If they build a Tower of Babel, they will be confounded just as the people were who built the ill fated prototype thereof. If we can get the gamblers out from under the grandstand and out from under the noses of the people who sit thereon and high up in the air by themselves a great gain will be registered. The trouble has been that blacklegs and swindlers and all other kinds of shady people practiced their nefarious business in the shadow of everything inside the gates. Let the fair be made clean inside first; the outside will be cared for later.

The directors seem to be doing their best to get things in shape. The new racecourse is practically completed, so far as grading and surfacing is concerned, and particular effort will be directed to making it one of the fastest tracks in the West. Some may think that in order to get a clean fair it is necessary to prohibit racing. Our view is different. Speed contests are as necessary as other demonstrations of quality in animals, and everything should be secured to have them of the best. They must be clean and fair and all low devices thrown out. If professional gambling goes up on the Tower of Babel there will be a better chance for this. Aside from the track construction the permanent buildings are being hurried to completion, but of those there will not be a sufficient number to house all the stock that will be entered for exhibition and in the races. It will be necessary to erect temperary stables, but Secretary Albert Lindley states that these temporary quarters will be far better than those which did service so many years at the old racetrack. Pavilion affairs are also receiving due attention.

Wheat futures have drifted downward a little, but spot prices are unchanged and export inquiry is arising. Barley is arriving freely, but holds value well. Oats are mostly of low grade, buyers shy and quotations nominal. Rye is held above buyers' views and little is done. Old crop beans are being rapidly cleaned up and prices are advanced. Millfeeds are also scarce and higher. Hay receipts fill up all available space and everything but fancy wheat suffers. Meats are unchanged, though beef seems weaker and mutton stronger. Butter and cheese are firm, although receipts are quite free. Eggs are advanced slightly and firmer all around. Poultry has improved; even small broilers are going well. Potatoes are still in large supply and good quality, but low in price. Onions are held up by the Australian shipping demand, which may soon be over. Citrus fruits are doing well and deciduous fruits are helped by the canners, who are buying freely, as prices suit them. Dried fruits are in good shape, in some cases considerably improved. Old stock almonds and walnuts have sold briskly this week and new almonds will soon appear. Honey is in good supply and unchanged. Hops are weak, and the situation undetermined yet. Wool is only handled in a small way. Growers are averse to contracts, and propose to test the market by large offerings at central sales.

An interesting system of investigation is now going on along the Yuba river. J. D. Guthrie and Herbert O. Stabler, of the United States Forest Service, are studying the effect of forests on stream flow. The Yuba river presents excellent opportunities for study of this subject, as the two forks are entirely different, one being heavily forested and the other being denuded. On the south fork it is claimed about 75% of the rainfall goes off in flood waters, there being no forests to hold the snow and water and allow it to find its way into the stream gradually, lasting into the spring and summer months.

It will be a good idea to go to St. Helena on August 18th and 19th, as the California Viticultural Club will hold its annual meeting. Friday afternoon the election of officers will take place and the future work of the club will be discussed. The following sessions will be devoted to the reading of papers and the discussion of matters of interest to the viticultural industry. Not only members of the California Viticultural Club, but all those interested in viticulture or the viticultural industries are cordially invited to attend the meeting.

Dr. Charles Keane of Sacramento, State Veterinarian, has been at the Napa State Hospital farm conducting important experiments on cattle. He is investigating into the practicability of immunizing cattle against tuberculosis by injecting into the jugular veins of calves a pure culture of human tubercle bacilli.

QUERIES AND REPLIES.

Spray for Brown Apricot Scale.

To the Editor:—What is the best treatment for the brown apricot scale?—Reader, Mountain View.

The parasite comys fusca has a good reputation for checking the scale, but all do not find it adequate, and when this is the case spraying must be resorted to. The experiments conducted last year by Mr. H. J. Quayle, of the University Experiment Station, indicated the resin compound as most effective against this scale. The formula recommended by Mr. Quayle is as follows:

Resin	10 pounds
Caustic soda (76%)	3 pounds
Fish oil	1½ pounds
Water	50 gallons

The resin is broken up into small lumps and, together with the caustic soda, is placed in the boiler with 3 or 4 inches of water. The mixture should be stirred occasionally until the resin is dissolved. About one-fourth of the water should be added, and at the end of a half hour after it has begun to boil it is ready for the spray tank, when the rest of the water is added. The wash when ready for use is a black-looking liquid, resembling strong coffee in appearance. There is no grit or heavy materials present, and it sprays very readily through any kind of nozzle. It does not require stirring in the tank, unless a portion of the oil comes to the surface. Usually this amount is very small, but if there is a quantity it should be stirred up well with the other materials. The wash when applied warm gives no trouble in the nozzles; but the precaution should be taken, when through using at night, to run hot water through them in order to prevent the resin from remaining in the parts of the nozzle and hardening. Since the brown apricot scale is situated on the under side of the smaller twigs, the spray should be applied from below—that is, the undershot spray should be used. From their situation it is almost impossible to reach every scale, but spraying to the very tips of the twigs cannot be too strongly insisted upon. It is unnecessary to spray the trunk and larger branches for this scale, hence the bulk of the spray should be directed to the smaller twigs. In order to reach the scales on the lower branches, the spray should be thrown at an angle with the axis of the rod, an angle of about 45° being found to be the most satisfactory.

Sheep on Alfalfa.

To the Editor:—I wish to ask for information in regard to raising sheep on alfalfa pasture on a small scale for home consumption. Will sheep do well on alfalfa, and will it do to keep a few pigs on the same pasture with them ? What breed of sheep would be best as a mutton as well as for wool ? About how many sheep can be kept per acre on good alfalfa ? Are sheep liable to bloat on alfalfa ?—Subscriber, Bakersfield.

Sheep can certainly be grown on a small place for home consumption, and for profitable sale also, on alfalfa, and sheep and pigs will run together, although they would thrive better apart. The breed which is most popular in California at the present time for mutton purposes is the Shropshire. How many sheep can be kept to the acre depends upon how much extra feed is given them, for they should be given grain hay, or grain and straw, or some other coarse forage with alfalfa. Sheep are quite liable to bloat. On a small place, where one is doing his own work, it would probably be much better to keep the sheep up in a feed lot, and cut and carry the alfalfa. In this way you can get much more weight of alfalfa from the same acreage, and by allowing the cut alfalfa to wilt before feeding and to keeping dry feed within reach, the danger of bloat is overcome.

A Simple Experiment.

To the Editor:—I have an orchard in which there are places where the trees do not do as well as in other places. Do they need fertilizers? How shall I find out what they need?—Grower, Napa.

The best way to proceed would be to make application of stable manure this fall to one of the places which you apprehend needs fertilization, and note the results of such application in the thrift of the tree and the character of the fruit as compared with a similar place to which you make no application. Trees very often give the best evidence of what they need, consequently this simple experiment to give

the trees an opportunity to talk for themselves is respectfully suggested. It is possible that these defective places are underlaid by rock or gravel too near the surface. If so, you can find out that by digging, and, if so, they probably need some water in summer, as well as fertilizing.

Brome Grass—Foothill Irrigation.

To the Editor:—Will brome grass (Bromis inermis) grow and prosper in the soil and dry atmosphere of Placer county? I understand that this kind of grass does not need much moisture, and will do well in a dry country. If so, what is the best time of the year to sow it? Do cherries require irrigation up here, or do perhaps the rains of winter and spring suffice? Please let me know the names of some of the early peaches and plums which do not need irrigation. Do grape vines require summer irrigation?—New Comer, Placer county.

Brome grass will start readily if sown as soon as the ground is moistened by the fall rains, and will maintain very satisfactory growth all during the winter. It should certainly have the advantage of a fall start. It will keep green quite late in the spring, and unless the situation is too dry will maintain its life in the root and start again from the old root when the next fall rains come, but the slopes of the foothills and the plains of the valley are apt to become so dry in summer that the grass cannot survive. For this reason, although the grass is very resistant of drought, it cannot be relied upon in the driest California situations. It may be added that we have, as yet, discovered no grass which can be relied upon to make permanent pastures in the driest situations in California.

Cherries do require irrigation in your district, except possibly on low lands, river bottoms, etc., where the soil is very deep and moisture constantly within reach. On uplands they certainly require adequate irrigation, although excessive use of water is detrimental to them. We do not know of any other fruits which will be successful without irrigation in ordinary foothill situations.

Gumming of Apricots.

To the Editor:—I have some Royal apricot trees which appear to be dying of some disease which I do not understand. The trees are three years old, growing vigorously, and have been perfectly healthy until this year. The difficulty affects first one limb and then another, and acts much like gum disease on oranges and lemons. Gum issues from the limb near the trunk, the limb begins to wither and dies in about two weeks from the time it is first affected. What is the disease and what can I do for it?—Grower, Folsom.

The gumming of trees is not in itself a disease, but is usually the sign of some injury to the roots, sometimes resulting from too much water in the soil and sometimes resulting from too little, because anything which destroys the fine root hairs interferes with the thrift of the tree, causing gumming and death of branches and sometimes of the whole tree. In the foothills there is sometimes difficulty from the excessive heat, especially where the ground was allowed to become hard and is very highly heated by the interior sunshine. There is no cure for any of these troubles, except to correct the soil defect, whatever it may be. Sometimes the removal of the branch which seems to be dying assists the balance of the tree to recover, and trees properly cut back sometimes become satisfactory afterwards. There is no application which can be expected to be effective.

Shrunken Grain for Seed.

To the Editor:—I send you inclosed a sample of our wheat in this section. I have kept this, my best, for seed wheat. Will this wheat grow and mature like plump wheat? If not, what percentage do you estimate would grow? If a good per cent of it will grow and mature, would I have to sow any more pounds per acre? The kernel being so small, would there not be a much greater number to the pound? An answer would not only greatly oblige myself, but a good many other farmers here who have been discussing this question. Can you tell us any way to get the cheat out of this kind of grain?—Grower, Dixon.

The wheat is very badly shrunken. All experiments, so far as we know, have shown a clear advantage in using good plump wheat for seed, rather than shrivelled grain. Such seed gives a stronger, more deeply rooting plant, which is able to endure more hardship, and the product from good, plump grain rather than from shrivelled grain, in such comparative experiments, is always greater and better. There are cases, however, in California where, if the season is very favorable and the sowing early, a good crop has been made from shrivelled grain, but the chances are against it. The amount of seed used need not be increased. If you sow same weight or bulk per acre you will, of course, get a great many more grains, and this would be all the allowance which you would need to make for the failure of some of them. At the same time, if you can get strong seed without too great sacrifice, it seems to us the investment would be justified and your chance of satisfactory returns next year much better. It would be very interesting if you would sow a small piece with this seed, even if you do conclude to get better seed for the main sowing, in order that you could see exactly what the difference in results is. As for the separation of the cheat seed, we know of no way except floating it off by throwing the seed into water.

More Facts About Corn Silage.

To the Editor:—I have read with much interest the article by Mrs. M. E. Sherman in your last issue and should be very glad indeed if Mrs. Sherman would add to the valuable information she has given us some data about the corn used for silage. What variety was sown and how and when? How was it harvested and is irrigation necessary in the great heat of our interior valleys? What chance would one have of raising good silage corn on a good quality of sandy loam, unirrigated, in the vicinity of Davisville?—Dairy Farmer, Davisville.

We shall publish next week another installment of Mrs. Sherman's very valuable address on corn growing, corn silage, etc., and it will answer several of the above questions. It must be understood that corn does not like drouth either in the air or soil and especially not in both. If you should plow early and harrow often enough to keep the surface loose, hold all the moisture and plant corn as early as is safe, you ought to make a good deal of silage corn at Davisville without irrigation. Do not try it, however, on a dry year. Grow sorghum which Mrs. Sherman's article next week will describe.

Cast-off Clothes of Tent Caterpillars.

To the Editor:—Enclosed you will find some cocoons of some insect that I found under my prune trees, on the ground. I should like to know what they are.—A. E. B., Healdsburg.

The empty cocoons which you find under your trees are the cast-off garments from which the parents of the tent caterpillars have emerged. These moths are now busily occupied in laying eggs around the smaller twigs of the trees, making a continuous band or girdle around the twigs, and these clusters can often be seen during the pruning, and whenever discovered should, of course, be destroyed.

To Kill Grass.

To the Editor:—Please let me know the best remedy for removing grass, and to prevent it growing where it is not wanted.—Gardener, Bakersfield.

We know of nothing better than petroleum to remove grass from places where it is not wanted, but this will also kill all other plants, and make the land barren for some time, probably. The same is true of the application of salt or arsenic; both of these are good weed killers, but kill the soil also. We know of nothing but mechanical means, old-fashioned hoeing, etc., to distinguish between desirable and undesirable plants.

Prairie Triple-awn Grass.

To the Editor:—I send a specimen of grass which has recently come into the foothills of Calaveras county—perhaps brought in by sheep. It keeps green when the native grass is all burnt up by the sun, and it grows on poor soil and seems to have very little root. It makes good feed and I would like to know what it is.—Correspondent, Stockton.

The grass is "prairie triple-awn" grass. It was found in 1888 on the east side of the Sacramento river, in Tehama county, and was reported to be spreading. It is common in the Eastern Middle States, where it is deemed of little value, but in the Southwest, where grass is scarcer, it is well thought of. In the Red Bluff district it is grown during midsummer, never appearing until this time of the year, and it is pronounced an excellent food for stock of all kinds, hogs doing exceptionally well on it. It is an annual and depends on seeding itself, and is, therefore, more likely to be run out by close grazing. Its botanical name is Aristida oligantha. It will be interesting to have the results of your further observation as to its feeding value, and its disposition to extend its area.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 7, 1905.

Alexander McAdie, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather prevailed during the week, with temperature slightly below normal until near the close, and conditions were favorable for all crops. Grain harvest is completed in some sections and progressing rapidly in others. Wheat, barley and oats are below average in yield and quality. Hops are making good growth and in some places there will be nearly an average crop; picking has commenced in the Sacramento district and the first bale was shipped East during the week. Beans, corn and vegetables are in good condition. Prunes are ripening and are of excellent quality. Pears are yielding much below the average. Apples have been damaged by aphis and the crop will be light. Olives and oranges are in excellent condition. Grapes are ripening and give indications of a good crop. Fruit drying and canning are in progress.

Coast and Bay Sections.

Cool, cloudy and foggy weather continued on the coast districts and clear weather in the interior, with higher temperature in all sections at the close of the week. Grain harvest is progressing rapidly; in some sections the yield is better than expected, while in others the crop is light. Barley is generally yielding better than wheat and oats. Hops are improving and in some sections will probably be a good crop. Hay baling continues. Beans and sugar beets are doing well. Dry feed is plentiful and stock are in good condition. Grapes are ripening and picking has commenced in some places. Deciduous fruits are being dried, canned and shipped. The walnut crop will be light. Apples in San Benito and Santa Cruz counties are in excellent condition and a heavy crop is probable.

San Joaquin Valley.

Clear and pleasant weather, with temperature slightly below normal, prevailed during the past week. Pears, peaches and plums are ripening rapidly, and large shipments are being made to Eastern markets and canneries. Good progress is being made in canning and drying the fruit crop. Very few peaches are being dried. Prunes and figs will be light crops. Large shipments of watermelons continue to local markets. Almonds will be a good crop. Heavy shipments of potatoes continue, but the quality is below the average. A good third crop of alfalfa is being harvested. Grapes are making excellent progress; shipments are increasing rapidly and the crop is very promising. Feed is plentiful and stock are healthy and in good condition.

Southern California.

Clear weather continued during the week and the temperature was slightly below normal. The weather was too cool for melons and small fruits, and unfavorable for fruit drying in the coast districts. Grain harvesting and thrashing are progressing. Wheat and barley are yielding good crops, but oats are light. Sugar beet harvest continues, and in some places the crop is the best for years. Beans, corn and vegetables are in good condition. Hay baling is nearly completed. The deciduous fruit crop is generally light. Walnuts in the vicinity of Riverside will yield the largest crop for several years. Citrus fruits are in good condition. The yield of honey exceeds that of last season.

Eureka Summary.—The acreage in oats is larger than last year; quality excellent. Hay is being stacked; quantity and quality never better. Early varieties of apples are in market; crop average.

Los Angeles Summary.—Cool, cloudy weather along the coast continues. It is favorable for beans, but retards fruit drying. Conditions in the interior are favorable for hay baling and thrashing. Honey harvest is about over, with a successful season.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 9, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	02	.75	.17	66	50
Red Bluff	.00	.00	.11	.02	110	58
Sacramento	.00	.00	T	T	102	54
San Francisco	.00	.00	.02	.02	70	52
Fresno	.00	.00	.00	T	108	56
Independence	.00	.00	T	.07	100	56
San Luis Obispo	.00	.03	T	01	86	52
Los Angeles	.00	.00	00	.03	86	54
San Diego	.00	.16	.00	05	72	58
Yuma	T	T	.23	.26	108	72

HORTICULTURE.

Work of the Thrips on Fruit Trees.

It seems likely that many losses of fruit blossoms and injury to the newly set fruit, which may appear later as serious blemishes, may be due to the work of thrips. As was stated in the Pacific Rural Press, Mr. Dudley Moulton, county horticultural commissioner of Santa Clara county, undertook a special study of this insect during the present summer, such special work being provided for by the supervisors. Some preliminary results of this year's study have been outlined by Mr. Moulton for the California Cultivator, and, as the insect is known to exist in various parts of the State, we spread the imformation as widely as possible.

The Insects.—Three species of thrips have come prominently to our notice, Euthrips pyri, the pear thrips, or the thrips which has concerned us most, Euthrips tritici, the grass thrips found commonly all the year round in roses and other flowers and blossoms, and which is often taken for the pear thrips, and Thrips tabaci, the onion thrips. The last named has been very abundant in onion fields and is common in many of our wild flowers, and of late has been found feeding in terminal buds on branches of our fruit trees. That habit is similar to that of the pear thrips and has occasioned this, the onion thrips, to be taken for the other. The grass and onion thrips have several broods or rather have a continual breeding season, and can be found in almost any stage at any time. The pear thrips is distinctly a winter form, there is but a single brood a year and though similar in external appearances its habits are decidedly different from those of the others.

First Observed.—The injury of thrips in our fruit trees came prominently to the attention of orchardists in February, 1904, when men noticed that their trees were not coming into blossom in their natural way. buds appeared blasted, turned brown and fell without opening, trees which did bloom dropped their blossoms early and in either case trees looked much as though they had been scorched by fire. This browning and dropping off had happened in places for several years, but was not explained until February, 1904, when it was definitely determined to be the work of an insect, a thrips. It was also learned that these insects could completely clean an orchard of its fruit, and this year wherever thrips appeared, though few in numbers, people naturally expected the worst.

Life History and Habits.—In brief, the life history and habits of this insect are as follows: Full grown adult thrips come to the trees in February, when new buds and blossoms are just opening out, they at once begin to feed and later to deposit eggs. The insect makes up for her (for all insects which come to the trees are females) long fast by ravenous feeding and this is easily appreciated by the great amount of injury which a few insects can effect and the dispatch with which they can do it. With regard to the feeding of adult thrips, suffice it to say that they attack all newly exposed leaf or blossom tissue on any of our fruit trees, some of the walnuts, also grape vines. If possible they force their way down into the bud and feed where they are wholly or partly concealed. They work in one place or on one tree for awhile, then move to another and even still others as they find better food. They leave their feeding places at evening and hover about the tree or fly or are carried on a breeze to other places, thus the insects are easily spread from tree to tree and orchard to orchard.

For depositing eggs preference is given to newly exposed leaf petioles or blossom stalks, later to the midrib and veins on the back of the leaf, or to the tissue of the leaf itself. The epidermal layer is first broken or torn away by the mouth, then the insect, moving forward a little, cuts an incision with her saw-like ovipositor and inserts an egg down into the plant tissue. After four days in the egg, the very delicate young thrips breaks its covering, forces itself out through the incision and at once begins to move actively about and to feed. Young thrips injure foliage and fruit rather than blossoms, and are usually to be found in terminal buds or on fruit under protection of the old blossom.

They remain in this stage about four weeks and on reaching maturity, with much stored up fatty tissue, leave the tree and seek a secluded place in the ground. They hold over as quiescent larvæ for several months before changing to pupæ. Three months after leaving the trees, they are still in the larval stage and show no signs of developing wings. This thrips spends one or two months above ground, when it feeds ravenously, doing all its damage, then goes into the ground, where it holds over until the following year.

Cannot be Reached by Sprays.—Spraying for thrips, as many of us have learned from experience, is a very unsatisfactory means of control and for several reasons. All spraying must be done either while the tree is in bloom or while the tender foliage is just pushing out, hence the insect cannot but be a hard one to kill without doing injury to the tree. Secondly, their feeding habits are such that it is almost impossible to reach them. Thrips force themselves down into the bud or blossom and are thus protected. The injury is extremely rapid, three or four days being sufficient to entirely clean an orchard of its blossoms. It is necessary therefore to cover an orchard almost at one time and over a large area this would be impossible. The insects do not all leave the ground at once, but keep coming up for several weeks and from this and from their habits of migration one may spray his trees, kill most of the insects and within a few days his tree will be as thickly infested as before. Sprays will doubtless be tried again, but they will be only partly effective; they can only lessen the numbers of the insect with little or no appreciable results and there is almost certain to follow injury to the tree. It is useless at this time to give the results of the spraying which have come under our notice this year; no one spray has proven satisfactory and under the conditions none can. The whole theory for controlling this insect by spraying is a wrong one.

Natural Enemies.—The subject of natural enemies for our insect pests is of consideration second to none, and yet for this particular thrips I fear we have a hard problem. Several common predaceous insects feed on thrips, but from the very nature of the life of the pest they cannot prove a successful check. A single thrips spends about a month on the tree and eleven in the ground, though as a species it lives some two and a half months on the tree and the rest of the year underground. A beneficial insect to be effective must in a way parallel the life-history of its host, which in the case of this thrips would be a difficult matter. Predaceous or parasitic insects are able to attack thrips above ground, but, from the very nature of their hiding, can hardly reach them at other times. So far as we know no insect can effectively control another if it must be a general feeder or if it must live for a time on other insects, while its real host insect is in an unaccessible form, as is true with this thrips, since for a time they are completely hidden away from the external attacks of their enemies. Thrips come to our trees in such numbers, so suddenly, and feed so rapidly that none of the present beneficial forms can prove an effective check.

Attack Them in the Ground.—From the foregoing it might seem an almost hopeless task to check the ravages of thrips either by natural or artificial means. From the life habits it is seen that the insect spends the larger part of its life underneath the soil, and it seems to me that this is the time to attack it. After the larva has reached full growth, as stated, it leaves the food plant and seeks a secluded place in the ground. The insect to get below cultivated soil follows natural openings, such as cracks or holes made by other insects or worms, and reaching a secure depth, from 3 to 12 inches, usually from 4 to 6, it hollows out a small cell on the side of the larger opening and securing itself it awaits further developments. It naturally expects to come out the same way by which it has entered. The insect has mouth parts such that it cannot eat its way out, and having no claws, cannot dig effectively. We think if the ground is so disturbed that these natural outlets are broken up or closed, the insect must remain within and die. 'Tis true that many thrips get below the ordinary plowing and cultivating line, below 4 or 5 inches, but we think if the ground above is thoroughly worked, later rains will so run the soil together that an effective covering will be established. The manner of cultivation which most of us have fallen into fits in remarkably well to give our thrips a long undisturbed period or rest. During and after May, when thrips are in the ground we give the soil nothing but light cultivation, and besides at this time they are still in the larval stage and if disturbed seek another place of hiding. After this no cultivation is done until the last of February or March and this is after the insects have left the ground.

Early and Deep Plowing.—From all of our observations and experience fall or winter plowing and working the soil seems to be the most rational way by which this insect can be controlled, at any rate, other than this we have no effective remedy.

THE FIELD.

Vegetable Growing on Tule Lands.

We continue our exposition of the agriculture of the reclaimed tule lands by quoting from the Gateway Magazine, just published by the Stockton Chamber of Commerce, an important statement on "Vegetable Growing" by O. Y. Woodward, one of the most extensive growers in California:

The delta lands to the west of Stockton, Cal., produce the heaviest yields of vegetables in the United States, if not in the world. According to the reports of produce men the total acreage of potatoes in the San Joaquin delta last year was 14,000, yielding 3,200,000 bushels, or an average yield per acre of 250 bushels. The crop reports show that San Joaquin county grows one-fourth of the potatoes grown in California. According to the Federal census of 1900, the San Joaquin county potato grower received more money per acre for his crop than any other potato grower in the United States.

Land is prepared for potatoes by plowing either in December or January. It lies until February without harrowing. This allows the soil to become well aired. In February planting begins, the seed potatoes being dropped in a furrow behind the plow, the next furrow covering them. This planting is carried through March, April, May, June and, sometimes, July. Harvest begins about June 1 and continues until January 1, or later. There is scarcely a week in the year when potatoes are not being either planted or harvested, and it is not uncommon to see planting and harvesting proceeding at the same time.

The cost of plowing potato land is about $1.25 an acre. This would be $2 50 for the first and second plowings. The harrowing costs 50 cents an acre, and the seed about $7 for the best, according, of course, to the market. This makes the cost of preparing and seeding an acre of ground to potatoes about $10. It costs $2 an acre to cultivate the crop. The crop is harvested by contract, the price being from 7 cents to 10 cents, or an average of about 9 cents a sack, to which must be added the cost of the sacks, which is about 6 cents.

Last year I raised 190 sacks, or about 380 bushels to the acre. The average yield is about 150 sacks, or 300 bushels to the acre. The price per sack ranges from 50 cents to $1.25. being an average of 65 cents a sack. The potatoes are sold on the farmer's own wharf, the buyers coming to the farmer to make the purchase.

An average yield of potatoes (150 sacks) at the average price (65 cents) would bring a gross return of $95.70 an acre. Under average conditions it would cost, as before stated, $12 an acre to prepare the ground, plant and cultivate the crop, $13.50 to harvest it by contract and $9 for cost of sacks and twine. This would mean a total outlay of $34.50 an acre, which, deducted from $95.70, the gross returns, would leave a net return of $61.20 an acre. This is higher than the average net return, but the net returns are frequently better than this.

As a matter of fact last year I got 71,000 sacks off 370 acres, and the crop brought $54,844. I had rented the land for half of the crop and my share was a little better than $74 an acre. The same year I had 240 acres which paid a gross of $108, of which my share was $54 an acre. In both of these cases I furnished seed, tools, stock and practically everything but the labor.

The cost of preparing land for beans is about the same as for potatoes. These are planted in May. One man and two horses can plant twelve acres a day with a bean planter, which makes the cost of planting about 25 cents an acre. It takes about forty pounds of seed to the acre, and this will cost about $1 at the average price of 2½ cents a pound The cost of harvesting is about 35 cents a sack The average yield is about twenty-three 95-pound sacks to the acre, or 2185 pounds. At 2½ cents a pound this yields a gross return of $54.65 an acre. Deducting the cost of producing and harvesting the crop ($12.30), the net returns will be found to be about $42.35 an acre. The cost of cultivation should be deducted from this. It is generally about $2 an acre, but often much more.

In the culture of onions the ground is prepared with much more care than where potatoes or beans are to be planted. The cost of plowing and harrowing is found to be about $5 an acre. Seed costs about 40 cents a pound, ordinarily, and it takes 3½ pounds to the acre, making $1.50 the cost per acre for seed. The seed is drilled in rows about 12 inches apart, and the cost of doing this is about $4 an acre. When it comes to cultivation the item of cost is very uncertain, as this depends entirely upon the amount of weeds. Cultivating costs a great deal where there has been a wet spring and the ground is very weedy. I have known the cost to be as high as $40 an acre. A conservative expense for cultivation under average conditions would be $15 an acre. The cost of harvesting is 5 cents a sack. The average yield is about 300 sacks to the acre. At an average price of 75 cents a sack, this means a gross return of $225 an acre. Under average conditions the cost of producing and harvesting an acre of onions is but $40.50, which leaves a very handsome net return on the crop. I have harvested as high as 450 sacks, or 900 bushels, to the acre.

The planting of asparagus is generally let out by contract, the contractor being given all he can grow of any crop between rows during the three years asparagus is getting ready for the first harvest. The seed is drilled in rows 8 to 10 inches apart. The next year the roots are transplanted into rows 10 to 12 feet apart. The third year, and each subsequent year, it produces a crop. Asparagus for canning will pay from $100 to $125 an acre, gross. The labor cost is about one-half of this.

San Joaquin county is said to produce more asparagus than any other district of equal area in the world. There are many tracts in the county containing several hundred acres in asparagus, and one or more of over 1000 acres. The largest asparagus farm in the world is in this county.

Most of the land which produces these phenomenal crops is rented at a cash rental in advance, or for a portion of the crop ranging from one-quarter to one-half, according to what the land owner furnishes in

the way of seed, tools, stock and buildings. Where the land is for sale, it ranges in price from $75 to $200, or more, according to conditions.

Alfalfa and Bermuda Grass.

To the Editor:—I notice in the Pacific Rural Press of July 29th the enquiry relative to Bermuda and Johnson grass and your reply thereto, and wish to add that Bermuda grass is quite generally grown on land about Fresno, where the rise of ground water and alkali have killed vineyards and orchards, and these conditions seem well adapted to Bermuda grass. I have seen no land so strongly impregnated with alkali as to prevent the Bermuda grass growing freely. Some of my neighbors have been experimenting with alfalfa and Bermuda grass, sowing alfalfa seed on the Bermuda grass after a good stand has been secured. Sown in the late winter the rain will wash the alfalfa seed down among the Bermuda grass roots, where it germinates and is not destroyed by the alkali, as no crust of alkali can be found at the surface where the Bermuda grass covers the ground. There are two pieces within 1 mile of my place where alfalfa seed was sown as above and a fair crop of alfalfa grown and cut with the Bermuda grass for hay this season. I presume the alfalfa would be destroyed by pasturing with stock before it was well established. I have a 10-acre pasture lot of Bermuda grass and, as it borders on the roadside, I propose trying sowing the alfalfa seed next winter on the strip between the pasture fence and the traveled part of the road, which will be an ideal experimental plot—as it includes several varieties and conditions of soil, subirrigation and alkali galore.

I have noticed in my Bermuda grass pasture during the hottest days of last month that the moisture on the grass glistens in the sunshine during the heat of the day and, on brushing the closely cropped sod with my hand, the moisture was always sufficient to wet my hand. This no doubt aids the alfalfa in getting a start and in its subsequent growth. I regard this mixing alfalfa with Bermuda grass as an important discovery, where conditions are so desperate as to drive one to the last resort—Bermuda grass.

Fresno, August 1. John S. Dore.

This is very interesting and important.

THE STOCK YARD.

The 28-Hour Law in Cattle Shipping.

Regulations for the shipment of live stock under the 28-hour law in the matter of feed and rest of stock in transit were completed at Washington recently by the Department of Agriculture. The recommendations as to the Department's attitude on the question, prepared by D. E. Salmon, chief of the bureau of animal industry, and approved by Secretary Wilson, are as follows:

"The statute provides for the shipment of live stock without unloading en route under certain conditions. I have investigated the subject and would respectfully recommend that the Department approve as being in compliance with the statute all shipments of cattle in transit for more than twenty-eight consecutive hours made under the following conditions:

"First—That the cars containing the cattle shall be equipped with hay racks, each lineal foot of which shall have a capacity of not less than 1 cubic foot, extending along the sides of the cars from the doors to that end, and that the cars shall be so arranged that the racks may be readily filled with hay through openings in the car roof.

"Second—That the cars shall be fitted with semi-cylindrical watering troughs of galvanized or cast iron, not less than 15 inches deep by not less than 12 inches wide across the top (inside measurement), with the inner edge curved to retain the water and facilitate filling; the troughs to be placed in proper positions along the side of the cars and extend from the doors to the end; all troughs to be so arranged that they can be readily filled with water and emptied on the outside of the car and the troughs be kept free from all litter and filth.

"Third—Food and water to be supplied at intervals, not exceeding twenty-eight hours, while the shipments are in transit, and in supplying water each car to be stopped for at least five minutes, during which time the troughs shall be kept filled with clear water and all the animals given an opportunity to drink.

"Fourth—In order that cattle may have sufficient space and opportunity to rest, the cars shall not be overloaded and in all shipments there shall be room in each car for at least one-third of the cattle to lie down at the same time."

Objections to the Law.—The new law has aroused strong opposition. Goodall's Farmer of Chicago has the following claim of the ill effects of the new regulations:

"Could the persistent sticklers of the humane societies for the enforcement of the 28-hour law have been here to-day to witness the distressing condition in which many of the cattle contained in a run of thirty loads from Montana and Wyoming ranges arrived, it might have changed their views regarding the cruelty that they imagine is entailed in confining cattle thirty-six to forty hours in cars.

"These cattle had been on the road to market more than four days and in that time, owing to the irregularity of running time on Western roads, most of them had been unloaded four times, or an average of once daily—owing to the fact that they had to be unloaded at feeding stations and could not always take advantage of the full 28-hour limit.

"Many of these cattle were so seriously bruised about the hips, as a result of the continued jamming in getting in and out of cars, as to lame them badly and seriously damage them for market So badly bruised were they that Nelson Morris personally and Wellington Leavitt, head buyer for Swift & Co., were indignant at the condition of cattle and commented freely upon the cruelty that resulted from the ignorant efforts of the humane enthusiasts who imagine they are working to prevent it.

"To any sane man who will investigate the bruised condition of these cattle, it will be apparent that tenfold more distress results to cattle from this too frequent pounding in and out of cars than would result from the continuous confinement in cars for a period of two days."

CEREAL CROPS.

How to Get Good Wheat From Shrunken Seed.

We print in our Queries and Replies department this week an answer to a correspondent who has saved shrunken wheat for seed. As we have there said, the result will depend much upon the favorable character of the season. The result also depends upon how well the land is farmed, as is shown by the following experiment at the Nebraska Experiment Station:

The yield of Turkish Red wheat, the variety most commonly grown in Nebraska, had not fallen below thirty bushels per acre in the Station farm for some years prior to 1904, and this has been exceeded by some good farmers, while the average yield per acre in the county was greatest at twenty bushels per acre in 1903.

In order to show this low yield was due to improper soil treatment rather than to poor seed, a comparison was made of the average yield of Turkish Red Wheat in the State of Nebraska and in Lancaster county with the poorest seed obtainable on the Station farm under the best soil treatment. This comparison is shown by the table:

Variety.	Year.....	Yield Per Acre From Poor Seed.	Yield Per Acre From Ordinary Seed.....	Average Yield in the County.....	Average Yield in the State.....
Turkish Red.....	1902	24.6	33 2	....	20.8
Turkish Red.....	1903	30	32.6	20	16.6
Turkish Red.....	1904	15.06	17.8	12	13.8

In the table the poorest seed used on the Station is compared in yield with the average of the county and State for 1902, 1903 and 1904. This poor seed was obtained by separating the ordinary seed that came from the thrashing machine by means of an air blast directed upward against the falling grain (the Wonder grader being the machine used), the light grain being blown out and the heavy grain falling to be caught in a box below, thus forming a light portion and a heavy portion, the light portion being again subjected to separation and the light fourth saved for seed, called "lightest light." This treatment has been continued since 1899, and each year the poorest seed was selected from the crop planted with the poorest seed of the previous year. Seed thus prepared contained all the light weight, shriveled and worthless kernels and most of the cracked kernels. Yet this poor seed under the soil treatment given it at the Station gave a higher yield than the average for the county or State. Thus in 1902 this "lightest light" seed gave a yield of 24.6 bushels per acre, while the average for the State was only 20.8 bushels per acre. In 1903 the "lightest light" seed gave a yield of 30 bushels, Lancaster county had an average of 20 bushels, and the State average was 16.6 bushels per acre. In 1904 the "lightest light" seed yielded 15.67 bushels, Lancaster county averaged 12 bushels, and the State averaged 13.8 bushels per acre.

In Nebraska it is a common practice to plow the land rather late, harrow once or twice and then drill in the seed. Soil treated in this manner is plowed too late in the fall to settle and compact, and numerous air spaces are contained in the loose furrow slice. It dries out readily, preventing a healthy, vigorous fall growth.

All the wheat land on the Experiment Station farm was plowed early, packed and harrowed the same half day as plowed. After every heavy rain the surface was stirred with a disk harrow or with a spike tooth harrow. This treatment gave a finely divided seed bed, well compacted and worked together below the surface. When drilled in, the wheat had plenty of moisture to make a strong, vigorous growth. Then, too, the stubble turned under had time to decay, still further enriching the soil. The essentials in good tillage for wheat are:

(1) Rotation of crops including seeding down to grass or alfalfa at intervals of four to eight years.

(2) Application of barnyard manure to the soil for some previous crop, as grass, alfalfa or corn.

(3) Early plowing. If wheat follows oats, plow immediately after taking off the oats, or disk thoroughly, depending upon the character of the soil.

(4) Harrowing immediately after plowing and keeping the soil disked and harrowed so that the surface soil is always loose. The important thing is to have the top soil loose and the lower soil compacted.

(5) Drilling in the seed early in the fall, except when Hessian fly is to be avoided.

With such high culture and a favorable season one may expect to get good wheat from shriveled seed. California is not ready to do as much as this for wheat, but the time will come when it will be grown with that much effort.

The Campbell System of Cultivation.

The so-called Campbell system of cultivation is largely the application to field cultures of some of the principles which have been long observed in California in orchard and vineyard work. This matter should be more widely understood in our grain-growing districts. The following account is contained in a letter to the Chicago Record-Herald, by Mr. W. E. Curtis. If our readers will study it carefully they will see how far it may be practicable under California conditions:

Mr. Campbell's principles as he explained them to me are:

First—Catch the rainfall and store it where the roots of the plant can reach it.

Second—Keep the soil always fine and loose.

Third—Have a firm, solid foundation under the soil—a bottom to hold the water.

"What will this accomplish?" I asked.

"The careful, regular application of these principles in farming will produce at least three times the results of ordinary farming, and often four and five times the results," said Mr. Campbell.

"What is the additional expense?"

"In Iowa or eastern Kansas not more than 25% more labor is necessary than is usually expended upon a crop by a good farmer. On the prairies, as a rule, farming is cheap and slipshod, and twice the labor is necessary. But this is offset to a certain extent by a saving of two-thirds of the seed. An ordinary farmer sows forty quarts of wheat to the acre and gets from nothing to twenty bushels, thirteen bushels to the acre being the average crop of the State and fifteen bushels the highest State average that has been reached in Kansas for ten years. Under my system any painstaking farmer, by sowing twelve quarts of wheat to the acre and cultivating his soil carefully, will harvest anywhere from forty to fifty-six bushels to the acre without fail. We can get forty bushels to the acre in the foothills of the Rocky mountains, or anywhere else, with 14 inches of rain. You can get the same difference in every other plant or crop that grows in gross on the acre.

"This particular farm where I am working was cultivated on the old plan for fourteen years and never yielded but one good crop. I came here in February, 1900, and very soon will harvest my sixth crop. I have never had less than forty bushels to the acre, and the crop this year will be better than that, while the farmers all around me will be glad to get fourteen bushels to the acre."

"Why don't they take up your method?"

"Because they are stubborn and prejudiced, and there is the same spirit in Nebraska and the Dakotas with only an occasional convert."

"How do you do it?"

"By storing the rainfall in the soils," answered Mr. Campbell, "by keeping the surface of the ground always loose, which stops evaporation. It is impossible for moisture to rise to the surface through loose soil, and that leaves the ground in the best condition to receive the net rainfall. Thus you can make 14 inches of rain go as far as 25 or 30 inches in raising all kinds of crops or plants or trees. We do not lose any of the rain—we have the full benefit of it. We keep it stored where the roots of the plants can reach it when they need it."

"How do you accomplish it?"

"By stirring up the soil with a revolving disk and then going over it again and filling up the furrows. We call this 'double disking.' It pulverizes the soil and levels it off. We keep going over it again and again, beginning early in the spring and continuing until the last of June or the first part of July. After every rain we stir up the soil either with a disk or an 'Acme' harrow. Finally, we plow 7 inches deep in the ordinary way and follow the plow with a subsurface packer—a machine which makes a compact, solid bottom, 4 inches from the surface under the loose soil. Then we go over it again with the Acme

harrow so as to keep the top soil loose and pulverized. After working the soil for a year in this way, by what we call 'summer tilling,' we put in our wheat, either in the fall or in the spring, as is usual. The first year we do not put in any seed. We simply keep stirring up the soil, so that it will remain loose and pulverized, and after one year of this sort of cultivation three crops can be grown in succession without renewing the tilling. In some cases it is better to till every other year and raise a crop alternate years.

"If crops are planted every year the reaper must be immediately followed by the plow and the stubble immediately turned under, and the soil disk and harrow kept at work all winter if it is spring wheat, or from the June harvest to the September planting if winter wheat. The same rule must be applied to all the other kinds of crops.

"To repeat. It is simply a question of the thorough working of the soil, as I have described. That is more important than the rainfall. No man can expect a crop who simply turns under the sod and scatters his seed and hauls a harrow carelessly over the field. Labor and pains are necessary to produce good results, whether you are farming or making furniture or publishing a newspaper.

"I am not opposed to irrigation," said Mr. Campbell in conclusion. "But I regard it as unnecessary wherever there is a rainfall of not less than 14 inches. And if we could have 1% of the fund that is now be ing expended in irrigation plants by the Government, to teach the people how to get along without water in a semi-arid region, we could have so many more happy homes and so much more wealth in this country."

Concerning the Pomeroy farm in Colorado, of which Mr. Campbell has charge, Mr. Curtis says:

"The Pomeroy farm certainly proves the truth of Mr. Campbell's theories, or else he is a wizard. There is no water upon it, except one well for domestic purposes, and last year there was only about 15 inches of rainfall. This year there has been a little more—perhaps 18 inches. And there is no more beautiful farm in the country. The orchard, five years old, is equal to any I have ever seen; the hedges that divide the fields and surround the garden are as high as the head of a man; the vegetable garden, the berry bushes, the flowers and the foilage are equal to any that you can find upon the best irrigated farm in California; while the wheat, corn and potatoes are simply perfect.

"The farm across the road looks skinny and shabby; the gaps between the rows of corn, the bald spots in the wheat and the feeble potatoes look as if a conspiracy had been set up to furnish as striking a contrast as possible. From one field, as Mr. Campbell says, he expects to harvest fifty-six bushels of wheat to the acre by his system. On the other side of the fence, where the ordinary methods have been used, it will not pan out more than seven or eight bushels, and it is the same soil and the same rainfall."

THE STOCK YARD.

Shorthorn Characteristics.

Shorthorn cattle are exceedingly popular in California and Shorthorn blood is in fact the leading grade element in this State. For this reason interest in Shorthorn facts is very wide even among those who have no pure blood in their ownership. To minister to this interest we take from the Breeders' Gazette an answer to some questions prepared by Mr. W. A. Harris of Illinois. We give the questions and Mr. Harris' answers follow them.

I notice in your advertisements of Shorthorn cattle some are Scotch and Scotch-topped and some Bates and some Cruickshank. Please explain the difference in these breeds. Do all the colors appear in the different breeds? Which are the best dual-purpose cattle of the breeds named?

Your correspondent makes the mistake of applying the term breed to what are simply different strains of the same breed. Since the Shorthorn breed of cattle assumed its distinctive or improved character in the hands of the Colling Bros., Maynard and a few others at the beginning of the nineteenth century, individual fancy, taste or talent has from time to time produced quite a number of different strains, having more or less difference in use, shape and size, retaining the essential qualities characteristic of the breed, including color (red, white or roan), and all tracing substantially to the same foundation stock, and having more or less blood in common. Mr. Mason, for instance, is credited with having cattle specially improved in their foreshoulders, less open crop and level backs, but he was accused of more or less sacrificing the milking quality. The "Philosopher of Kirklevington" said Mr. Mason had to maintain three distinct herds of cows—one for show purposes, one to raise the calves of the show cows, and a third to provide milk and butter for the family.

Mr. Bates prided himself upon the number of pats of butter which went weekly to the Darlington market, and by his selection in breeding he produced a strain of cattle which was marked for the beauty of their heads, general refinement and aristocratic appearance. The Booths were famous for the beef making qualities of that famous strain, and T. C. Booth, pointing to the broad backs of his cattle, asked if that was not "worth a few pints of milk." Wm. Torr continued with some changes the work of the Booths.

Mr. Linton at one time had cattle that were remarkable in the show ring, and possessed marked individuality. Mr. Cruickshank, the wise old philosopher of Sittyton, based his breeding operations upon the necessity of the tenant farmer for a beast which would give a profit in its consumption of the ordinary feeds of the farm. With him, good digestion and constitution were of prime importance, and even though an animal was somewhat unsymmetrical, still if it had these qualities strongly marked he said it could not be called a bad one. So that while all are Shorthorns there has been a great variety. Even different strains can sometimes be divided into single families. While Mr. Renick bred along the Bates lines and his cattle might have been called a Bates strain, still as a single family they became prominent and the Renick Rose of Sharons have a distinctive place in Shorthorn history.

Your readers ask substantially for a definition of the terms Cruickshank, Scotch and Scotch-topped Of course an animal bred in Scotland, no matter what breed may be used, or what strain it belongs to, would necessarily be Scotch-bred, and that is the term now applied to everything imported from Scotland. It has very little meaning aside from the mere fact of the locality where bred. Beginning with Robertson of Lady Kirk, followed by Rennie of Phantassie, and the pioneer of the north of Scotland, Barclay of Ury, Shorthorn cattle of all varieties or strains were brought from England up through to the north of Scotland. Booth strains, Mason-bred, and Bates cattle were all alike selected, the only criterion being that they satisfied the wants of the purchasers, so that all Scotch-bred cattle are miscellaneously bred and have in their veins Bates and Booth and other lines of breeding. Mr. Cruickshank himself obtained cattle from various sources in England.

He avoided anything like line breeding in the earlier part of his career and used bulls having a mixture of the different strains then prominent. After Champion of England appeared he very rarely took any outside blood, and confined himself to the sons and grandsons of that great bull, so that the Sittyton herd grew to have marked and distinctive characteristics, and made the term Scotch-bred of universal fame. Neighboring breeders, using his bulls, more or less shared in the reputation which his herd obtained.

Of course Scotch-topped would simply mean the older families of cattle which we have had in the United States coming from the old Ohio and Kentucky and other importations, upon which have been used bulls imported from Scotland or bred from such stock. Cruickshank cattle would of course apply to those bred by Mr. Cruickshank, or the produce descending directly from his cattle. Colors of course are all similar, "red, white and roan." As a rule, however, roan is almost the universal color in both Scotland and England, but pure white would be just as well bred as a red or roan; it makes no difference so there is no other color than the three indicated.

As to which are the best dual-purpose cattle, it would be impossible for any one to say. The Bates cattle were certainly bred largely along the lines of milk and butter making, but after they became extremely fashionable unquestionably little attention was paid to the milking qualities. The Booths never professed to give much attention to that quality, but yet in later times splendid milking cows have been developed from Booth foundations. My own opinion is that away back at the beginning of the breed the milking quality was undoubtedly strongly developed, and it is bred all the way through more or less in all strains, and can be developed by milking. Mr. Cruickshank himself paid attention to the milking qualities only so far as he deemed it necessary in order to raise a good calf to have a good milk cow, but his herd was not utilized for dairy purposes. The Lavenders among the Cruickshanks I found generally to be good milk cows, possibly running back to the marked quality in the foundation of the family.

The one thing of all others which has made the Scotch-bred cattle popular is their utility for beef and early maturity. The Scotch methods have been to breed to the animals that possessed the qualities wanted. They have been thoroughly catholic in their selections, and if we would only import Scotch common sense and Scotch methods along with the cattle we could go ahead and breed cattle of equal or greater merit. The American citizen, who has attained some fame in this little world of ours for his general all-round good qualities, has in his veins the blood of two or three or more nationalities. He has not been "line-bred" and does not get all of his good qualities from Scotland or England, France or Germany. The best Shorthorns, either in Scotland or America, are miscellaneously bred, and if men will simply use wisdom in selecting sires, thinking more of their immediate ancestors and pay little attention to the foundation of their pedigrees we can breed up and have bred-up American Shorthorns that we can boast of against all comers.

FRUIT MARKETING.

Walnuts and Raisins Abroad.

Walnut Trade of Hungary.—F. Dyerchester, Consul, Budapest, Hungary, July 14: According to report the walnut crop of southeastern Europe this year will be very weak, as spring frosts caused great damage in the chief places of production. Hungary will have to import and the prices "ab station" will be even higher than 40 crowns ($8.13) per 100 kilos (220.46 pounds).

Walnuts in Chile.—R. E. Mansfield, American Consul, July 25: One variety of walnut is grown in Chile, the amount of a normal crop being 30,000 to 40,000 bags, gathered in February and March. The estimated crop for 1905 is 20,000 to 25,000 bags. Quality better than last year; 90% to 95% of the crop is exported, principally to the Argentine Republic, west coast of South America and the United States. Present price is $14 Chilean gold per 44.16 kilograms (96 pounds). Freight rates to New York and to Europe 45 to 50 shillings per ton.

Valencia and Denia Raisin Crop.—J. L. Byrne, Consul, Valencia, Spain, July 6: Improved methods in cultivating the Muscatel vine have resulted this season in the most abundant crop on record. Estimates are for a yield of 600,000 cwts., against 432,000 cwts. last season and 46,000 cwts. in 1903. Lower opening prices are generally forecasted, and some of the most sanguine exporters are even expecting prices to enable them to successfully compete with California growers on American markets. On the other hand, stocks in foreign hands are reported almost cleared, and those held by home speculators barely reach a total of 10,000 cwts. First shipments will be made early in August.

Currants in Greece.—E. S. Lontos, Acting Consul, Port of Patras, July 1: Crop estimated in this consular district at from 320,000,000 to 330,000,000 Venetian pounds; (95¾ Venetian pounds equal to 100 English pounds). Forecast of last year's crop placed the same at 330,000,000 pounds, but the actual production came up to 340,000,000 pounds. The stocks of last year's crop in hands of growers and dealers are about 27,000,000 pounds, beside another 28,000,000 pounds in retention stuff. It is almost certain that the 27,000,000 pounds will have been exported before the commencement of the new currant year, for the exportation of which an amount of 10,000,000 pounds, to be drawn out of retention lots, will be required; consequently the only stocks to remain will be 18,000,000, and these purely of the retention category, as against 50,000,000 pounds of last year in both retention and (currant) stocks in hands of growers and dealers. It is proposed to place the currant trade under the control of a syndicate with a view to bringing about an improvement in the currant status. Freight rates to New York, Philadelphia, Boston and San Francisco are: 17s 6d, 20s to 22s, 24s to 25, 83s respectively.

Almonds and Walnuts Abroad.

Almonds.—Under date of July 3, D. R. Birch, United States Consul at Malaga, Spain, says: "The Jordan almond crop is now secure and a large yield is expected. Predictions in round figures are dangerous at this time, but indications are that the output will not fall below the 60,000-box production of last year, but will probably exceed it.

"Lack of rain has excited some fears for the almond crop, but merchants now say that the loss due to dry weather will be augmented by the product of new trees. Much planting of the Jordan tree has been done within the past few years.

"The Valencia almond will be as plentiful as usual. Small stocks of both Valencias and Jordans, figures not available, are now in local storehouses. These will probably be shipped before the opening of the new season."

Walnuts.—C. P. T. Mason, Consul at Grenoble, France, under date of July 5, says of the French walnut crop: "Owing to an unusually cold spring and to long continued rains, all vegetation has been retarded and fruits have developed and ripened slowly. The season may be said to be two weeks behind the average one. The walnut trees have shared in this, and, besides, the excessive rains were, in one locality, in the month of June, subjected to a very heavy storm, accompanied by hail.

"The young nuts in consequence were slow to form, but since the 20th of June—a period of about two weeks—the weather has become suddenly warm, developing into a heated spell, with occasional showers, and the general conditions for the growth of the nuts have changed for the better.

"The nut trees are looking fresh and clean in their rich, green foliage, and the nuts themselves, now of the size of small marbles, are promising a normal yield."

Agricultural Review.

Butte.

BUSY CHICO ORCHARDS.—Chico special to Sacramento Bee, Aug. 4: The fruit season is now on and the good crop is giving employment to hundreds in the cannery and various dry yards. The peach crop of the Bidwell orchards was this year sold to the cannery and the picking of freestones is being vigorously prosecuted. From thirty-five to fifty tons are daily delivered from the orchard to the cannery. A new process introduced this year enables the cannery to successfully handle the "soft" peaches, which has heretofore been difficult. An automatic process of peeling has reduced the number of operatives, but they readily find employment in the dry yards where labor is in demand.

Fresno.

THE ZANTE CURRANT.—Fresno Republican, Aug. 4: The Zante currant has been successfully raised in Fresno county. John S. Dore of West Park received a few years ago from the Government cuttings which have thrived on his place. The grapes—for the Zante currant is a grape—are very small and seedless. In nearly every bunch raised on Mr. Dore's place, however, there are odd large grapes containing seeds. In Smyrna every year the vines are girdled, there being a curious superstition that this must be done, and hence it is done religiously. It is very likely that there is a scientific reason for it, and an old tradition has developed into a superstition. It is believed that the girdling has the effect of producing grapes of a uniform size. Mr. Dore has dried some of the grapes, and they make a very sweet raisin. The so-called Zante currant is extensively used in puddings and the like. It may be that the article that such strenuous efforts were made to keep on the other side of a tariff wall will be produced on a commercial scale in Fresno county. If so, there will be the more reason for excluding the foreign article. The whole confusion about the tariff rate resulted from the fact that what is in reality a raisin is known commercially as a currant. The so-called Zante currant is the dried black grape of Corinth. When the fact was demonstrated to the tariff committee, despite the efforts of the New York importers and the minister from Greece, a sufficient tariff was placed on the so-called currants to prevent ruinous competition with the Fresno raisin.

Merced.

MERCED BEETS A FAILURE.—Salinas Index, Aug. 3: A. W. Parthington of Merced passed through on his way to Oxnard, where he will study the sugar beet question. Mr. Parthington stated that the claim has often been made that sugar beets will grow anywhere in California, but the assertion has fallen short of its mark in some places. In Merced county, in the San Joaquin valley, where contracts were entered into between the farmers and the Hawaiian Sugar Refining Co. for the raising of quite a large acreage of beets, the crop is almost a total failure this year. It seems that the beets did very well during the first of the season but later turned back inside and the tops began to wither and die. He claims that it is a great disappointment to the people of that section, as they had built their hopes on having a large sugar factory there next year.

FIRST CRATES OF EARLY SWEETS.—Merced Sun, Aug. 4: The first shipment of sweet potatoes from Merced county has been made by the Merced & Turlock Sweet Potato Association through its selling agents, the California Vegetable Union, with local offices established in the Pedreira building. The harvesting of the tubers is a simple process and consists of the severing of the surface or upper vegetation by hand; this brushed to the left as each row is cut. This cutting and brushing aside of the greens is repeated on each row until the refuse of about eight rows is accumulated, when it is gathered and carted away. This refuse has recently been experimented with and is said to be an excellent fertilizer. The potatoes are then plowed up and accumulated in numerous piles and the remaining stems removed by hand. Then follows the assortment of the smaller from the larger, or salable potatoes. The former are used for hog feed and are said to be unsurpassed for this purpose. The shipment consisted of twenty-five crates of 100 pounds capacity each. Beginning Monday, the daily shipments will average between forty and fifty crates, the owners of these crops sacrificing a good portion of their sweets, which are not yet full grown, in order that they may receive the benefit of the higher price for the early product. The big shipments, however, will not really begin until the middle or latter part of August, when the potatoes will be shipped in carload lots. The extent to which the industry has grown may be realized when it is stated that this will continue until the rainy season, when much of the product will of necessity be stored.

BELLEVUE RANCH IMPROVEMENTS.—Merced Sun, July 28: The Bellevue ranch, 3 miles north of Merced, is under Superintendent T. H. Scandrett. The pumping plant is housed in a tower-shaped building with a 3 H. P. electric motor operating a No. 2 centrifugal pump. This equipment displaces the old windmill and it supplies all the water needed at the ranch. It pumps water through a 2½-inch pipe into three tanks of 20,000, 11,000 and 5000-gallon capacity respectively. There are also six stand pipes stationed in various parts of the premises for fire protection, and in order to make the system effective they have 300 feet of 1½-inch hose coiled on a regular hose cart. They have two main barns with arrangements for 180 head of stock. All the buildings at the Bellevue are electric lighted. The blacksmith shop is equipped with a band saw, rip saw, drill and carborundum wheels, the machinery all being operated by a 10 H. P. motor. The cold storage plant, which handles the meat business of the ranch, consists of a three-ton ice machine. The power is supplied by a 7 H. P. motor. The capacity of the machine is 2000 pounds a day of twenty-four hours. It is producing now about 1000 pounds a day. The cooling room is 16 by 14, and the temperature of this room, where the freshly slaughtered meat is kept, averages from 38° to 40°. The walls are 15 inches thick. A track system runs from the slaughter house into the cooling room, and the beeves, mutton and porkers are quickly transferred to the cooling department after they are killed. They aim to slaughter about twice a week, and the cold storage enables them to keep the meat in good shape in the hottest weather, and to distribute it out to the other ranches of the company as their needs demand. They also supply veal and mutton to the local meat markets.

Placer.

WHEAT YIELD.—Lincoln dispatch to Sacramento Union, Aug. 4: A. Hemphill, one of the most extensive farmers in this region, has just completed his harvest of 1500 acres of wheat. During the harvest he had in operation three combined harvesters at one time, necessitating the working of about 100 horses. His yield, while somewhat under the usual average owing to the rust, may be considered as fairly good, and when compared with the crops produced this year in other sections, is above the average. From various parts of the State comes the report that the wheat crop has suffered heavily from rust, and while this section will show a slight decrease in the aggregate production, as the result of damage from this source, Placer county wheat crops have perhaps been less hurt than those in any other part of California. J. P. Thompson, another extensive wheat grower, is nearing the end of his harvest.

San Joaquin.

GOOD PRICE FOR LODI GRAPES.—Lodi special to Sacramento Bee, Aug. 5: For her crop of ten acres of Tokay grapes, Mrs. L. M. Fairchilds, who lives on the Waterloo road, has accepted $1800, or $180 an acre. Yesterday the owner signed the contract with a Lodi firm and received as her first payment one-third of the sum. The buyers harvest the crop and the owner will be under no expense at all. Tokays will be sent from Lodi about August 12th, and the first shipments will be heavy. There is a small amount of mildew noticeable in some vineyards, but not more than has been noted in past seasons. The mildew and recent extreme hot weather will probably damage the grapes about 15% and, even allowing for this, the crop will be nearly a third larger than last year, on account of the new vines coming into bearing.

Santa Clara.

APRICOTS.—Mountain View Register, Aug. 4: The apricots of this section are pretty well through with. The yield is one of the largest on record. For example, from five acres of unirrigated Blenheims on T. F. Huntington's place, corner of Almond avenue and Griffin road, there were harvested 23¾ tons. The quality and size are fair, considering the yield. There is comparatively little complaint heard concerning the sunburn, although it did considerable damage, especially to those growers who had failed to thin the fruit sufficiently, thus causing a lack of foliage for covering. Sulphuring has not seemed to be sufficient to bleach the sunburn out. However, the lowest price that is known to have been received for sunburned apricots is 5 cents.

LARGE HAY WAREHOUSE.—San Jose Mercury, Aug. 4: Hollister claims to be the largest shipping point for hay in California, and claims to have the largest hay warehouses in the world. The Lathrop Hay Co.'s shipping yard covers 37½ acres, with four warehouses; three are corrugated iron, one a wooden structure. The four warehouses combined would make one warehouse over one-quarter of a mile in length. To be exact, the dimensions would be: Length, 1430 feet; width, 100 feet, with a storage capacity of 16,500 tons. During the summer months great quantities of hay are shipped before going into the warehouses. Hollister ships on an average 2000 tons a month the year round.

Sonoma.

GOOD CROP AT ASTI COLONY.—Healdsburg Enterprise, Aug. 5: Julius Allegrini, superintendent of the vineyards of the Asti Colony, states that the grape crop at the colony this year will be an average one. The extreme heat of a couple of weeks ago has damaged the crops somewhat, in some portions of the vineyards the damage amounting to 20%. The grapes are now maturing nicely, and everything is in a state of activity there.

FRUIT CONDITIONS.—Healdsburg Tribune, Aug. 3:—Isaac Gray has recently finished the building of an evaporating fruit plant on his place, and is now drying apples, already having dried four tons. He has a large number of apple trees on his place, the majority being of the Gravenstein variety. Mr. Gray has a man running the dryer, who thoroughly understands the business. He also states that the prices offered for his evaporated fruits are very satisfactory. The Healdsburg Fruit Association's cannery is running smoothly. About all of the peaches required to keep the hands employed are received. The cold, foggy weather has somewhat retarded ripening of fruits, yet the Early Crawfords are about all in, and the McClish clings will soon be finished up. Muirs are just beginning to arrive. Manager Snook reports the new peeling machinery as doing excellent work. In the soldering room seven men are employed, and it was found that 100 pounds more solder was used per day than was necessary. Solder is worth 18 cents per pound, hence the loss was $18 per diem, all due to the inexperience of those employed in that department. The management has found it necessary to send away to get experienced men. There was more loss of solder than the wages of the seven men amounted to. Fontana & Co. are shipping daily from twenty-five to thirty-five tons of fruit to their Santa Rosa cannery. Arthur Buffum is in charge of the shipping. First-class pears are wanted. He stated that Mr. Brandt had brought in some of the finest pears he had seen this season. The pear trees had been irrigated and it was found that it much improved the fruit. The fruits being received are excellent, and will be up to the usual quality grown in this valley. A visit to the fruit-drying yard of Miller and Wagers will give the visitor a view of some of the finest plums ever seen anywhere, as well as an idea of the various varieties of the same. Quite a number of hands are employed. Some 200 tons of prunes have already been purchased and will be dried at this yard. Peaches, plums, pears and prunes are being dried. Brown Bros. are making preparations to dry prunes at their yard on the old Drayeur place at the foot of West street. The first prunes of the season were put out on the dry yard of Miller & Wagers on last Thursday morning. Two tons were put out. The quality of the prunes in this valley promises to be of very large sizes.

Sutter.

PEARS.—Marysville dispatch to Sacramento Union, Aug. 4: Pears are worth money this year and owners of pear orchards are getting good returns for the money invested. The prices are as high in some cases as $65 per ton. One instance that shows what can be done is found in the case of Eugene Moore, who about two years ago purchased ten acres in Yuba City, paying $3100 for the land, eight acres of which were planted to pears. This season he has eighty tons and sold them early in the season for $50 a ton, making his income for the pears alone $4000. He has a fine crop of grapes that will yield him a handsome profit in addition to the pears.

CANNERIES RUNNING STEADILY.—Sutter County Farmer, Aug. 4: Everything has been moving along steadily at the canneries here and both plants have made a very good pack on the various kinds of fruit already delivered. The Tuscan peaches are about all in and the Orange Clings ripening. Some free peaches are being canned, as well as pears, plums, etc. The run on late peaches will continue for some time yet. The Sutter Preserving Co. has arranged to secure a choice lot of tomatoes and quite a run will be made on these. Both canneries are having considerable difficulty with the drainage this season, as on account of the new processing machines more water is used than formerly and the sump capacity is overcrowded. Before another season something should be done to remedy this.

BIG PEACHES. — Sutter Independent, Aug. 3: Giblin Bros. have big peaches grown on their orchard south of Yuba City. They were not selected with any special care, but were a fair sample of the orchard's production this season. The box held a number of peaches which measured from 8 to 10 inches, ring measure, while one went 12½ and another 12. From six acres of this variety of fruit they got 74½ tons and sold them at $25 per ton, giving them a return of $1862, or about $310 per acre. They have two acres which they think will yield 40 tons of fruit, or a gross yield of $500 per acre.

Tehama.

WOOL BUYERS BUSY.—Red Bluff dispatch to Sacramento Union, Aug. 5: Several wool buyers have been visitors here lately, which would indicate a busy season when the fall shearings are in. Many sheep men are shearing in the mountains, but the bags will not get here until the end of the month.

Yolo.

FIRST BALE OF 1905 HOPS.—Union, Aug. 6: F. V. Flint & Co., hop dealers of Sacramento, yesterday started East what they believe to be the first bale of new hops picked in California—or in the world—this season. The hops were grown and baled by Charles and John Merkley on their Yolo county ranch, a short distance up the river from Sacramento. The hops are fine in quality, extremely large and of extra fine flavor.

Yuba.

FEW GRASSHOPPERS. — Marysville Appeal, Aug. 3: Reports from those districts in the vicinity which has recently been affected by grasshoppers show that the pest is rapidly becoming less dangerous, and that in some parts they have entirely disappeared. It is also noticeable that the places which they are leaving are the very ones which made a strenuous campaign against them. This should be encouraging to those who believe that nothing will rid a land of the little pests and tend to influence them to fight the hopper in the future. Even the wily, hopping and hungry grasshopper cannot long withstand the attacks of science.

OREGON.

FRUIT AND NUT TREES PROFITABLE.—Rogue River Courier, July 29: Henry E. Booth, the owner of a large tract of land on Rogue river 12 miles below Grants Pass, has thirty-six acres to fruit trees, seventeen acres of which are to apples and the remainder is to peaches, prunes, cherries, pears, almonds and walnuts. Most of his apple trees are too young to bear, but such as are old enough have a good crop. He has a fine yield of peaches and will begin next week to pick his Early Crawfords, of which he will have 1500 boxes. His late peaches are all Salways and of them he will have fully 1800 boxes. Mr. Booth has a few almond and fig trees that are loaded, but he has only a few trees of each for home use. He has some twenty English walnuts. The trees are but eight years old, yet each is bearing a number of nuts and in a couple of years more he expects that they will yield a good supply of nuts. Mr. Booth thinks that walnuts are more profitable than fruit trees for they are the most hardy, thrity tree he has in his orchard and they require no pruning, or thinning of nuts as fruit has to be thinned, and there is not a pest that bothers them so there is no big expense of spraying, and they will grow on land that is not good fruit land. The picking of the nuts is a simple matter as compared to picking fruit if there is no liability to bruising and there is no scientific packing to be done; to pick up the nuts after they have been shaken to the ground and sacking them is the extent of the work and of harvesting the crop.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from **Horses** and **Cattle, SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish*

Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

Your Mission.

If you cannot on the ocean
Sail among the swiftest fleet,
Rocking on the highest billows,
Laughing at the storms you meet,
You can stand among the sailors,
Anchored yet within the bay;
You can lend a hand to help them
As they launch their boats away.

If you are too weak to journey
Up the mountain steep and high,
You can stand within the valley
While the multitudes go by;
You can chant in happy measure
As they slowly pass along—
Though they may forget the singer,
They will not forget the song.

If you have not gold and silver
Ever ready to command,
If you cannot toward the needy
Reach an ever open hand,
You can visit the afflicted,
O'er the erring you can weep;
You can be a true disciple,
Sitting at the Savior's feet.

If you cannot in the conflict
Prove yourself a soldier true,
If where fire and smoke are thickest
There's no work for you to do,
When the battle field is silent
You can go with careful tread,
You can bear away the wounded,
You can cover up the dead.

Do not, then, stand idly waiting
For some greater work to do;
Fortune is a lazy goddess,
She will never come to you.
Go and toil in any vineyard;
Do not fear to do or dare:
If you want a field of labor
You will find it anywhere.

—Ellen M. Gates.

His Girl.

The great week was over, and of the 300 or 400 girls who had filled the college buildings and campus with their bright, earnest life not more than a dozen remained, and all but one of these had their trunks packed for speedy departure. This one was Mary Cathcart, who did not know where she could go if she did pack.

This morning she was standing near the entrance of the lecture-hall wondering what she should do. For ten days she had been looking hopefully for a letter, but none had come. None seemed likely to come now.

She had not specially fitted herself for anything, and she rather looked forward to coming back after the summer holidays to take a post-graduate course, when, if it should seem best, she would study for one of the half-dozen callings which many of her schoolmates were already entering upon. But it all depended upon the letter, and the letter had not come.

A girl but little older than herself came briskly from the building. It was the French teacher, and she was now going straight to the station, to take the train for home. Mary looked at her a little enviously.

As the teacher reached the foot of the steps she smiled and nodded. "Not gone yet, Miss Cathcart? she said.

"No; I am looking around."

"I understand. It is a lovely place. I expected to find it hard to leave, but after the past week everything seems so lonely and dreary that I am glad to get away. When do you go?"

A second before Mary had not even thought of packing her trunk. Now she answered promptly, "On the afternoon train."

"That is nice. Where do you go?"

"To Longley." The answer was unpremeditated; but oddly enough with it vanished the listlessness and discontent and doubt from the girl's face. As the French teacher turned away she walked rapidly across the campus, ran up the steps, and into the building which had been her home for four long years, and on up the stairs to her own prettily furnished room. To Longley? Of course. That was the place from which she had been expecting the letter.

Two hours later she was at the station, and had purchased a ticket. She had money enough to pay her expenses for a month. Beyond that she did not know.

Whom should she find at Longley? Should she even find anybody? A letter which had come to her after her mother's death, more than four years before, bidding her to enter upon a course at this college, and stating that money would be sent to her from time to time, as before, was all she had to go by. The letter had been postmarked "Longely." Before that money had been sent to her mother from banks in New York, Boston and other cities, but never twice from the same city. During her college course it had been the same.

She had always been generously supplied, and had furnished her room well, and had had money to spend.

Then as the end of the course approached, she had confidently looked forward to another letter. But none had come. The one postmarked Longley was her only cue, and even that might have been mailed by some one passing through the place.

Her mother had thought the money might come from a wealthy uncle, who had had some disagreement with the family, and who took this way of saving his pride. He was eccentric and fond of traveling about from place to place.

All this passed through her mind as the train rushed on. At length Longley was called, and Mary rose and hurried out to the little platform of a small country station.

As she looked around her heart sank. There was a long, unpainted wooden building with many small windows, which she afterward learned was a cotton factory. She could hear the harsh clack, clack-i-clack of the looms from where she stood. Around the mill were several dozen small houses, all alike and all without shade-trees or yards. She looked eagerly for a mansion with piazzas and lawn, but there was none; only the unpainted factory tenements, with two or three buildings in the midst of them, which might be stores or offices. Compared with the campus and spacious college buildings it seemed unutterly dreary and lonesome, and Mary turned longingly toward the train which was disappearing in the distance. Of course it was a mistake, her coming here.

The station-master was dragging her trunk back from the edge of the platform, where it had been dropped. She went to him.

"There are no Cathcarts here, of course," she said, more as an assertion than as a question.

"No; guess not; never heard of any. Be you lookin' up some?"

"Y-es; I thought I might find a relative here. When is the next train?"

"Not till to-morrer."

She drew a long breath. "Is there a hotel near?"

"Factory boardin'-house; but I guess it's pretty full. That's it down yonder," the station-master answered, pointing with his finger; "the house swingin' on one hinge. Be you lookin' fer a job? I hear they're needin' two or three more weavers. That's the only job I know of, unless it's old Tom Farrar's. He's been man of all work 'round the mill ever since nobody knows when; but he has been sick fer a month or more. But of course ye don't want that job. But, oh, say!" as he started down the platform. "I moost fergot. I heerd this mornin' that the woman who's been nussin' Tom is goin' off to-day. Maybe ye could get her job."

Mary nodded her thanks, a sudden resolution flashing in her eyes. She was a girl who made up her mind quickly, often on impluse, as now. She had not thought of obtaining a situation; but why not? If she returned to the college town she would scarcely have money enough to pay her expenses through the vacation, even with the strictest economy.

So when the boarding-house keeper grimly informed her that there was not a room, not even a lounge, vacant, she did not look dismayed, as she might otherwise have done, but smilingly inquired her way to the home of Mr. Farrar. There she found a middle-aged woman, who greeted her anxiously. But on learning her errand the woman's face cleared.

"That's what I call a special Providence!" she exclaimed, heartily. "You see, I've got to go, for my sister's sick; but I've been hatin' to leave old Mr. Farrar. The very best I could think of was gettin' a neighbor's little girl, only fourteen, to come; but she'd be a pretty poor excuse. Have you done any nussin?"

"I took care of my mother before she died."

"Then it's all right, and I'm glad. You'll not have a bit of trouble lookin' arter things here. Mr. Farrar is one of the best housekeepers, I know, if he has kept bachelor's hall. There's everything one want's to do with, an' it's all spic an' span. An' Mr. Farrar himself will not give a mite of trouble. Even when he's wanderin'—which has been most of the time so far—he's gentle an' soft-spoken. One can't help lovin' the old man. But come in! Come in!" stepping back from the doorway to allow Mary to enter. "You might as well begin right off, an' I'll be packin' my trunk."

"Is he very ill?" Mary asked as she went inside.

"Well, no; not so very now. He's gettin' better slowly. The doctor says he'll begin to sense things in another week. An' oh yes! He told me when I fust come that he could not pay only three dollars a week, for he had other expenses to meet outside. I s'pose you'll get the same. But it's a nice place to stay, an' I think you'll like it."

She was right; Mary did like it. She remembered many of the tempting dishes which she had prepared for her mother, and she made them now, singing little snatches of song as she did so. She had not known for what she was fitted. She knew that she could be a good nurse. Perhaps she could also be good at other things; but she had not found that out yet.

What surprised her most were the books in every room, some of which she looked at with awe. They all showed marks of much use as well as loving care. The old man's hands were rough and calloused, as befitted a man of all work around the mill; but for all that he was evidently a scholar, and Mary felt that she could read proof of it in the strong brow and dreamy eyes.

As the days went by these eyes began to follow her as she moved softly about the room, contented and lovingly at first, then with a questioning wistfulness, as though the clouded mind were striving to grasp something it could not reach. Then one day there were several minutes when the eyes grew clear and intelligent, and gazed at her with almost startled wonder. The next day the lucid interval was longer and several times repeated. But he did not speak; he only gazed at her, and passed his hand across his brow from time to time as though to clear his brain. Once he turned his face to the wall, and when she went to him a little later she found traces of tears upon his cheeks.

Then came a morning when he was strong enough to sit up in bed; but still the wistfulness and wonder remained in his eyes, and mingled with them now was a certain resignation. Presently he motioned Mary to his side.

"You are a new nurse?" he said.

"Yes."

"I knew it, of course, but I haven't said anything. I—I have been trying to get my mind clear. I thought as I got stronger my mind would get better, but it doesn't. I—I am afraid it's getting worse. I suppose I'm growing old; and it's to be expected, but I've been planning for a good deal of reading and study yet, and haven't realized how the years slip by."

Mary softly stroked his hand. "You cannot get well all at once, Mr. Farrar." she chided. "You have been very sick, you know. But you are gradually growing stronger and your brain is becoming clearer."

"You don't understand," he answered, gently; "my body's stronger, but my mind doesn't seem to gain. It made you out to be somebody else from the first, and has persisted in the hallucination ever since. I've looked in other directions, and changed my thoughts to other things, but it's no use. You are taking care of me, so my mind says that you are somebody whom I used to know a long time ago, but who's dead. I suppose it's what folks call second childhood." Then changing the subject abruptly, he asked, "How long have I been sick?"

"I do not know. I have been here only two weeks. It is now the fifteenth of July."

He looked startled. "So late?" he gasped. "Why, I—I've got a little girl off to school who ought to have been written to long ago. Will you bring me my pen and paper from the desk?"

She complied; but his hand trembled so that he could not hold the pen.

"Let me do it for you," she said, taking the pen from his shaking fingers, and moving a small table close to his bedside. "Now, how shall I begin?"

But he remained silent, looking at her doubtfully. "I—I—you see. I don't write to her directly," he said at length, hesitatingly. "There is an old friend in New York who acts for me." He was silent for some minutes longer, then went on, desperately, "The letter must be written, and I suppose it'll be best to explain things a little. You see, when I was a boy I had a strong notion for college, but there were reasons why I had to work hard year after year. When at last I was fixed so I could go I felt that I was too old. Besides, I was sort of settled with the books I liked to read, and had lost ambition to go out in the world. But I didn't give up the idea altogether. I would send somebody in my place. So I looked around. I had no relative save a little girl whom I used to play with when a boy. She had married and gone West. I traced her, and found that her husband was dead, and that she was an invalid without means. That was something nearer than college, so I sent her from time to time what money I had to spare. When she died I arranged for her daughter to go to college."

He paused, with his gaze upon the coverlet, his eyes unobservant, dreamy, reminiscent.

Mary had risen, her eyes shining. "Why didn't you write to her directly?" she breathed.

"Well, she was a college girl, you see, with college-girl notions. I liked to think of her as my girl, and to plan things for her. If I'd written to her directly it—it might have been different. You see, I'm just a man of all work in a factory." He held up his hands, white and transparent from his illness, but still knotty and hard from a lifetime of toil. "I don't know much about girls," he went on, "but I want to think of this one as mine, and I can't bear the thought of her ever—"

"Mr. Farrar, do you think any girl could be ashamed of you?"

The quick, passionate cry brought his gaze suddenly from the coverlet. What he read in her voice, in her eyes, brought a look of rapt understanding to his face.

"Then my mind isn't wandering!" he exclaimed, tremulously "It's she, really and truly? Mary, bring me that box in my desk!"

She brought it, and he ran his fingers eagerly through the contents, soon finding a tintype, which he opened and held up for her inspection. It might have been her own picture, so exact was the likeness. She recognized it with a low cry. "It's your mother, Mary," he said softly, "taken just before she went West."

Burns.

Success in treating burns depends upon the completeness with which the irritation is arrested and the air excluded. Surface burns are for the most part caused by dry heat, from direct contact of the flesh with the flame, or by moist heat, in the form of hot water or steam. Scalds are more painful, and, where the injury is extensive, much more dangerous than wounds caused by dry heat. In burns from dry heat the damage to the tissues is generally complete; while hot water and steam leave the flesh dead, it is true, as far as its usefulness is concerned, but still capable of undergoing decomposition and putrefaction with all the accompanying dangers.

Whatever their nature, however, all burns are to be treated alike. If caused by heat the part should immediately be

wrapped in some substance that will effectually exclude the air, which becomes a source of irritation to the raw flesh. This may be done very simply and easily by cotton wadding soaked in carron-oil; or, if these articles are not at hand, the burn may be sprinkled liberally with baking soda, starch or even flour, with just enough water added afterward to make a thick paste. All blisters should be slightly pricked before the part is dressed. After the wound has been smeared with some one of the above preparations it may be lightly covered with cotton wadding. The dressing should be removed daily, and the part carefully washed with a weak solution of carbolic acid—say from 3% to 5%—and redressed.

Burns caused by acids or other irritating substances should be immediately immersed in running water, that the irritant may be diluted and carried off.

If the burn is severe or extensive there will be symptoms of a constitutional disturbance of proportional severity. The first signs will be those of shock or collapse, which should be treated with stimulants and hot applications to the heart and extremities. Within forty-eight hours the stage of reaction and inflammation usually occurs, and we may have, as accompanying symptoms, fever and inflammation of any of the organs of the body. If the trouble grows worse, after about a fortnight, erysipelas and blood-poisoning may result. There is nothing to be done in these last stages but to follow a physician's orders.

Domestic Hints.

Willow Furniture.—Willow furniture may be cleansed with salt and water applied with a stiff nailbrush.

Leaks in Gaspipes.—A leak in a gaspipe may be located without the use of a light by painting the pipe with soap and water. Bubbles will indicate where the leak is.

To Remove Insect Specks.—Insect specks may be removed from gilded picture frames by dipping a soft camel's-hair brush in alcohol and applying it to the spots.

Corners of Window Sashes.—A small, flat paintbrush is useful in cleaning the corners of the window sash. Hot vinegar will clean off paint spatters and turpentine will remove putty.

To Clean Zinc Utensils.—A good way to clean zinc utensils is to dip a piece of cotton in kerosene and rub the articles with it until the dirt is removed. Dry afterward with a clean cloth, so as to get rid of all grease.

Oranges and Lemons.—To keep oranges or lemons fresh for any length of time, select firm ones, wrap each one in soft paper, and put it in a glass jar with white sand, that has been previously dried in the oven, around each orange and with a thick layer over the top.

Soft Boiled Eggs.—An egg that has been boiled soft and becomes cold cannot be cooked again and made hard, but a soft-boiled egg that has not had the shell broken may be reheated by cooking three minutes in boiling water, and it will taste as well as if freshly boiled.

To Iron Lace.—When ironing lace always lay a piece of soft muslin over very fine lace, and do not touch it directly with the iron. Crochet, tatting, guipure and Irish lace should not be ironed, but simply pinned out on a well-covered board, point by point, and left till dry; pull it out gently with the fingers if it seems stiff when unpinned.

To Clean Ostrich Feathers.—White ostrich feathers can be cleansed by making a mixture of white soap shaved into small pieces, boiling water and a little soda. After this has dissolved and cooled, dip the feathers into it and then draw them gently through the hand, repeating the operation several times. Then rinse thoroughly in clean water, with a trifle of blueing added. Shake, dry and curl.

To Mend Kitchen Utensils.—To mend leaks in the kitchen utensils, use fresh putty and work it until it is soft. Scrape the tin around the leak until it is perfectly clean; then take a little of the putty, press over the leak hard enough to force a portion of it through on the opposite side of the vessel, smooth both sides down nicely, set aside two or three days until it becomes perfectly hard. Leaks in the washboiler can be effectually stopped in the same way.

Waterproof Shoe Blacking.—To make a good waterproof blacking for shoes or other leather articles, mix one part of borax with eighteen parts of melted beeswax and stir to a stiff jelly. Then mix five parts of asphalt varnish with sixty-six parts of oil of turpentine, into which stir six parts of melted spermaceti. After thorough stirring, combine this with the first mixture of borax and beeswax, and the result will be a nearly colorless waterproof paste, excellent for use on natural leather.

How to Pack a Trunk.—In packing a trunk, place all the books, boots and other heavy articles at the bottom, fill all the corners and crannies with stockings, vests and similar articles. Remember that the good packer packs tightly, for in this way breakages and creases are avoided. The secret of good packing is firmness and smoothness, and to attain that everything should be put in the trunk in layers. Before putting in the dresses have a firm layer of undergarments, and then proceed with the thickest and heaviest skirts. The skirts should be folded as nearly as possible in the folds they take in wear. Lay the skirts alternately in different directions, so that if the waistband on one is to the left side of the trunk the waistband of the next is at the right side. Between dark and light dresses place a towel to prevent the former from soiling the latter. Fold bodices as far as can be in the lines which they take upon the figure, put stiff, lightly crushed paper into the sleeves, and also into bows and puffings to prevent their being creased, and then pack as tightly as convenient.

Home Drinks for Hot Weather.

Oatmeal Water.—Place two ounces of oatmeal in a basin and add to it enough cold water to make a thin batter. Then add a teacupful of black currant jam. Pour over all a quart of boiling water and cover until cold; then strain and it is ready for use.

Apricot Cordial.—Peel about one dozen nice ripe apricots and take out the stones. Place them in a pan with six ounces of sugar and pour over them a quart of boiling water. Let the fruit stand for two hours and then strain through fine muslin.

Pineapple.—Take a pineapple, cut into slices and pour over it a quart of hot water. When all the goodness has been extracted strain off the liquid, sweeten to taste and add two bottles of lemonade. When cold it is ready for use.

Lemon Sherbet.—Peel four large lemons and boil the peel in six quarts of water and a little ginger cut fine; boil them for a quarter of an hour, then add three pounds of sugar, and when it is cold put in the juice of the lemons; strain and it is ready for use.



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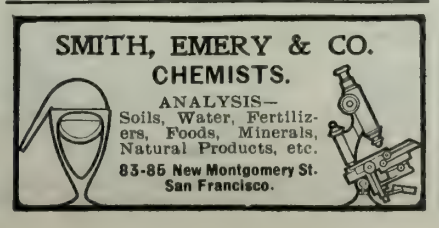
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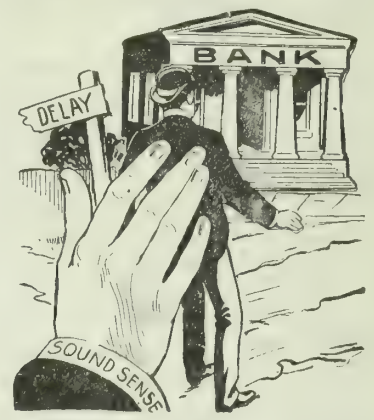
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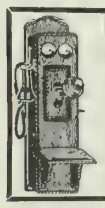




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The Markets.

San Francisco Produce Report.

San Francisco, August 9, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	$ 84⅞@83⅞	86½@85⅛
Thursday	85 @84¼	86⅝@86
Friday	85¼@85⅛	86⅜@85¾
Saturday	85⅛@83⅞	86¾@85⅛
Monday	83¾@82⅞	84⅞@84⅛
Tuesday	83⅝@82⅛	84¾@83¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53¾@52⅝	46¼@45⅝
Thursday	55⅛@53⅞	46½@46
Friday	54¾@53¾	46⅜@45⅞
Saturday	53⅜@52⅞	45⅞@45¾
Monday	53 @52½	45¼@45
Tuesday	53⅞@53	45⅝@45¼

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 43⅞@1 43⅝	$——@——
Thursday	1 43¾@1 43	——@——
Friday	1 43 @1 42	——@——
Saturday	1 41⅝@1 40¾	——@——
Monday	1 40 @1 38⅝	——@——
Tuesday	1 39¾@1 38	——@——

Wheat.

December option shows a decline of 4 or 5 points during the past few days, owing to large offerings from the North at much lower price than is asked for California wheat. It now looks as though very little reaction is to be expected within the next few weeks. Harvest reports from Oregon state that harvesting is progressing rapidly and for the most part the yield is coming fully up to the first expectations. Northern wheat is now being offered on this market and is meeting with a good demand. It now looks as though there will be some export trading developed in the next few days, though spot prices are the same as formerly quoted. It is not probable that they will be maintained at that figure very long, as the first arrivals of the new crop from the North would indicate fully as large a yield as last year's, and in some sections larger. Advices from the State of Washington state that wheat is expected to open at about 65c per bushel for Blue Stem and 62c per bushel for Club, while Red Russian wheat, which is not popular for milling purposes, is expected to open about 4c below Club. Eastern crop reports state that all indications point to a big merchandising year in wheat. Bountiful yields and splendid quality seem assured. Heavy marketings from the new winter wheat crop have gone thus far to replenish flour and urgent storage demand. There is now beginning a period of warehousing, and later on it may reasonably be expected that the export trade will make up for the loss of July, and probably partial loss of August, from the export column of the new crop year.

California Milling	$1 55	@1 65
Cal. No. 1 shipping, alongside	——	@——
Cal. No. 1 shipping	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.39⅜@1.38⅜.

Flour.

Prices are being well maintained at the quotations given, though trading is very light. The export trade with Central America is fairly good, but with Hong Kong it has fallen off almost entirely. A slight decline in prices may be expected, as soon as the large crop of wheat in the north is available. Eastern advices state that Kansas millers have been doing a tremendous business in the manufacture and sale of flour ever since the new wheat became available.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

There is no change in the market for spot barley for the current week. Receipts have been rather heavy, but prices are being well maintained at quotations given. It now looks as though no export trade is likely to develop during the month of August, as the present quotations are entirely above a parity with exporting. During the current week December option dropped about 3c or 4c per cental, but has since reacted and is now selling at 99¾c. Good bright lots of feed barley are rather scarce and are quickly taken up at the maximum quotations. Off grades are, however, very plentiful and are not experiencing an active movement.

Feed, No. 1 good to choice spot	$1 00	@1 02½
Feed, fair to good	97½@1 00	
Feed No 1, December	99¾@——	
Brewing, No. 1 to choice old	——	@——
Chevalier, No. 1 to choice	1 10	@1 15
Chevalier, common to fair	1 00	@1 07½

Oats.

New samples of black oats coming in are very poor in quality. All samples are running very light in color. There has been some jobbing inquiry for small black oats, but no prices have been mentioned. Receipts of red oats are also small and show a very poor quality. The quotations for choice new are therefore nominal, as no such are to be found in the market. Reports on the oat market of Oregon are to the effect that buyers are manifesting an indifference and have refused to be interested in anything except the choice grades. A few cars of new oats have come to this market and have brought $25 per ton.

White oats, fancy feed	$——@——	
White, good to choice	——@——	
White, poor to fair	——@——	
Milling	——@——	
Black oats	1 45	@——
Red, choice new	1 30	@1 35
Red, fair	1 22½@1 27½	

Corn

There has been very little movement in corn during the current week. Arrivals from the East were light and were mostly taken up by the mills. Eastern reports state that there has been considerable corn bought up for export trade with Europe and it is probable that if the drought in Hungary and Roumania is as extensive as has been reported those countries will be largely dependent on the United States for their corn.

Large White, good to choice	$1 40	@1 42½
Large Yellow	1 40	@1 42½
Small Yellow	1 50	@1 60
Egyptian White	——@——	
Egyptian Brown	——@——	
Eastern, sacked	——@——	

Rye.

Some new rye is coming into the market, but the trading is light, as buyers do not seem willing to buy at the prices it is being held for. Receipts are, however, light and of good quality, and this, together with less than an average yield, would not indicate that a decline is imminent. Prices are firmly held as quoted.

Good to choice	$1 45	@1 50

Buckwheat.

There is no movement in buckwheat of anything like a jobbing character. The only holdings now in evidence are those of the millers. These are reported to be entirely sufficient for immediate wants. The highest price that has been paid in the local market is $1.75 for choice, though some seed buckwheat has been sold to growers by the millers at prices ranging around $2.

Good to choice	$1 50	@2 00

Beans.

The bean market has been fairly active during the current week and as a result stocks have been still further cleaned up. There are now very few choice Bayos to be had even at the 25c advance noted, and off grades are also scarce. There are no strictly choice Pinks offering, and it is reported that none are to be had at any price, as they have all been taken by the growers for seed. There are still some considerable holdings of damaged stock and some of fair quality, which command a price around $3.25 per cental. Fancy small white beans were sold as high as $3.65 per cental. Red Kidneys are now almost cleaned up and the price given on red beans is practically nominal.

Pea, good to choice, 100 lbs	$——	@——
Small White, good to choice	3 30	@3 50
Small White, damaged	1 50	@2 75
Large White	2 50	@2 85
Large White, damaged	1 50	@2 40
Pinks	3 25	@3 75
Pinks, damaged	1 25	@2 75
Bayos, good to choice	3 75	@4 25
Bayos, damaged	2 50	@3 50
Red Kidneys	3 50	@4 00
Reds	6 00	@7 50
Limas, good to choice	5 50	@5 65
Black-eye Beans	3 00	@3 15

Dried Peas.

Trading has been very quiet during the current week, but prices are being well maintained at quotations given. Stocks are very light in all varieties, and Garbanzos of both sizes are entirely out of the market. No business has as yet developed through the East, though it is claimed that advices show that Eastern prices are on a $2.22½ basis delivered here. No extensive movement is expected until the new crop is harvested, as its extent is not definitely known, though the indications are that there will be a very favorable average.

Green Peas, California	1 85	@2 10
Garbanzos, Large	——	@——
Garbanzos, Small	——	@——
Niles	1 75	@2 00

Hops.

The hop market continues very weak. Very few old hops are being offered, as the ideas of growers in regard to prices do not seem to coincide with those of buyers. There does not seem to be any immediate prospect of an advance in prices, as it is estimated by the jobbing interests that there are still 23,000 bales of the old crop in first hands on the Pacific coast, and the brewers seem to be unwilling to buy old hops with the new crop so near at hand. There have been some offers of 13c to 14c made in the spot market, but no trading has been done at these figures. Some contracts have been made for futures at 15c. The prospect seems to be for good crops throughout most of the United States as well as in the foreign hop growing districts. The coast crops show a considerable improvement in quality during the past two weeks. These conditions naturally have a tendency to lower prices. Spot good are now selling from 15c to 18c, and some contracts for the coming crop have been made as low as 14c, but no heavy trading has been done. The first bale of the new crop was shipped East August 15th from the Sacramento section. Buyers here state that harvesting will not be completed until about ten days later than last year.

Good to choice 1904 crop, nominal	15	@ 18

Wool.

There is little or no change in the wool situation for the current week. Fall shearing has just been begun, but no contracts of any consequence have been made. Small straggling lots of old wool continue to arrive in rather a desultory manner and are usually picked up at prices ranging from 25 to 28½c. Reports from the interior are to the effect that the Wool Growers' Association of Marysville has decided to hold its fall sale one day during the week between October 13th and 20th. Growers will be requested to sign agreements that they will not sell before that day and will store their wool in that city. In this way it is hoped to have a large quantity of wool for sale so that it will pay buyers to come from a distance.

SPRING.

Humboldt and Mendocino	25	@28½
Northern, free	24	@27
Northern, defective	22	@24
Middle County, free	22½	@25
Middle County, defective	18	@20
San Joaquin and Southern, free	18	@22
San Joaquin and Southern, defective	15	@18
Oregon, valley	26	@28
Eastern Oregon	16	@22
Nevada	18	@22

Hay and Straw.

There seems to be but little diminution in hay shipments, as the total for the week just ended shows 5200 tons, which is but 400 tons less than for the week preceding. The hay tracks and hay wharf are badly blocked with hay, and it still continues to be a case of insufficient team facilities. There is nothing new in the way of outside demand, so that the situation has not been relieved in any way. The strictly fancy grades of wheat are doing well, but other varieties are, if anything, a bit lower than last week. Tame oat hay, most of which shows at least a little rust, does not seem to be in as good demand as it was two years ago. There are reports of considerable concessions from quoted prices.

Wheat, good to choice	$ 9 50	@ 14 00
Wheat and Oat	8 00	@ 12 00
Tame Oat, fair to choice	7 50	@ 11 00
Wild Oat	5 00	@ 8 00
Barley	6 50	@ 9 00
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 10 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₩ bale	30	@ 50

Millstuffs.

The demand for middlings is very strong and has caused a still further advance in price and a further reduction in stock. The holdings of the local millers are now very light. The market on millstuffs generally is very firm. Shorts are now almost out of the market. Cracked corn is stiffer in price owing to a brisk buying demand.

Alfalfa Meal, ₩ ton	$18 00	@ 20 00
Bran, ₩ ton	21 00	@ 22 50
Middlings	28 00	@ 30 00
Shorts, Oregon	22 00	@ 24 00
Barley, Rolled choice	22 00	@ 22 50
Cornmeal	30 00	@ 30 50
Cracked Corn	32 00	@ ——
Oilcake Meal	33 50	@ 35 00
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

There has been very little movement in seeds during the current week. The market on nearly all varieties is well cleaned up. On Canary the market is cleaned up entirely, but there is some to arrive in thirty to sixty days. At present there is nothing offering. Quotations on mustard are largely nominal, as no new seed has as yet appeared in this market, though some Triest is expected to arrive soon.

Flax	$2 25	@ 2 50
Mustard, Yellow	3 25	@ 3 75
Mustard, Trieste	4 50	@ 5 00
		Per lb.
Alfalfa		—@—
Canary		6½@ 7
Rape		2½@ 3
Hemp		3½@—
Timothy		5 @ 5½

Honey.

The honey market shows little change this week. All dealers have large stocks and all new arrivals show an excellent quality. White honey which has been received in this market is of a very superior quality and is meeting with a fair demand. Prices are being held at the figures quoted, though trading is very light.

Extracted, Water White	5	@ 5¼
Extracted, White	4¾	@ 5
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½	@ 4
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	9	@10
Amber Comb	7	@ 8

Beeswax.

Trading in beeswax has been very light during the current week. Prices are firmly held at quotations given.

Good to choice, light ₩ lb	27	@29
Dark	25	@26

Live Stock and Meats.

The market is a shade weaker on all kinds of meats, but prices are being maintained at former quotations. Owing to the fact that the fall shearing is now on, the mutton market shows a slight tendency to stiffen. Lambs are, however, quite plentiful, so that prices have not been materially affected.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₩ lb	5	@ 5¼
Beef, 2nd quality	4½	@ 5
Beef, 3rd quality	3½	@ 4½
Mutton—ewes, 6@7c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾	@ 6
Hogs, large, hard, over 200 pounds	5½	@ 5¾
Hogs, small, fat	5¾	@ 5⅞
Veal, large, ₩ lb	5	@ 7
Veal, small, ₩ lb	8	@ 9
Lamb, yearlings, ₩ lb	8	@—
Lamb, spring, ₩ lb	8	@ 9

Hides, Skins and Tallow.

The hide market is very firm, and on advices of a continual strengthening of the situation at Chicago and elsewhere, the local market has moved up slightly from the basis of last week. Heavy steers have sold at 13c, and there are reports of a trifle more being paid for choice lots. It now looks as though the market would continue as at present throughout the month of August.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12½@13	11½@—
Medium Steers, 48 to 56 lbs	11½@12	10½@—
Light Steers, under 48 lbs	11 @11½	10½@—
Heavy Cow Hides, over 50 lbs	11 @11½	10 @—
Light Cow Hides, under 50 lbs	11 @11½	10 @—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₩ skin		1 50@2 00
Pelts, medium, ₩ skin		90@1 25
Pelts, short wool, ₩ skin		60@ 90
Pelts, shearling, ₩ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4¼
Tallow, poorer grades		2½@3½

Bags and Bagging.

The local market contains very few new grain bags, owing to the recent heavy demand from the North. Prices show an advance of ¼c on nearly all varieties of bags and the market is still very firm. Bean bags are ruling very firm at 5½c and a further advance is predicted, owing to a strong buying demand from the bean sections.

Bean Bags	5	5½@—
Fruit Sacks, cotton	7	@7¾
Fruit Sacks, jute, as to quality	6	@7½
Grain Bags, Calcutta, 22x36, spot	7¼	@7½
Grain Bags, Calcutta, buyer June-July		—@—
Wool Sacks, 4-lb	33	@—
Wool Sacks, 3½ lb	30	@—

Poultry.

There is a slightly better demand for small broilers and the market generally shows a slight improvement all round. There is also a good inquiry for geese and turkeys. Receipts are of fair size, though a good many which are off in quality are now coming into this market. The demand for this stock is weak, but choice stock of all kinds is meeting with good request.

Turkeys, choice Young, ₩ lb	$ 24	@ 26
Turkeys, live gobblers, ₩ lb	18	@ 20
Turkeys, live hens ₩ lb	19	@ 21
Hens, California, ₩ dozen	4 00	@ 4 50
Hens, large	5 00	@ 6 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	4 50	@ 6 00
Fryers	3 00	@ 3 50
Broilers, large	2 50	@ 3 00
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₩ dozen	3 00	@ 4 00
Ducks, young, ₩ dozen	3 50	@ 4 50
Geese, ₩ pair	1 50	@ 1 75
Goslings, ₩ pair	1 75	@ 2 00
Pigeons, old, ₩ dozen	1 25	@ ——
Pigeons, young	1 25	@ 1 50

Butter.

The market is a shade firmer. Prices are being well maintained at figures quoted. Receipts are fairly large and are reaching

this market in excellent shape. The demand, however, has drawn some on the storage grades.

Creamery, extras, ℔ lb	23	@24
Creamery, firsts	22	@23
Creamery, seconds	20	@21
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	21	@22½
Mixed Store	17	@18

Cheese.

The market remains firm at figures quoted. Arrivals are plentiful and of good quality and prices are well supported by the demand. Choice lots are in good request and are being handled at the maximum quotation.

California, fancy flat, new	10	@11
California, good to choice	9½	@10
California, fair to good	9	@ 9½
California, "Young Americas"	11	@13
Eastern, new	15	@18

Eggs.

The market is firmer on all grades of stock. Receipts are not large, but of good quality, and a good demand is drawing considerable stocks out of storage. An advance of 1c per dozen is quoted on all California stocks.

California, select, large, white and fresh.	29	@30
California, select, irregular color & size.	25	@26
California, good to choice store	18	@20
Eastern firsts	20	@22
Eastern seconds	17	@18

Potatoes.

The situation in the potato market shows little change. Stocks are large and receipts are coming in very plentifully and are of excellent quality. The market is still very weak and the price of River Burbanks shows a still further falling off. There is a large request for cheap shipping stock for southwestern points. Good stock is now moving slowly, the prices being too high for shipping purposes.

Cal. Early Rose, ℔ cental	50	@	60
Cal. Burbanks, ℔ cental	60	@	75
Salinas Burbanks	80	@	1 10
Chile Garnet, ℔ cental	50	@	60
White Rose, ℔ cental	65	@	75

Vegetables.

The vegetable market is now in very fair shape. As is usually the case in cool weather, the demand has been fairly brisk. Tomatoes and Summer Squash show a considerable decline, the former being almost a drug on the market. Beans of all kinds show advance, limas especially being in good demand at 7c. Some rhubarb is showing up at 50 to 75c per box. Egg plant is very plentiful at $1.25 per box. The onion market is in fair shape, but it is expected that it will be weaker after the Australian shipments go out. Present prices are being well maintained, however. Reports that United States growers were menaced by competition with Japanese producers were greatly magnified, as it has been found that the Japanese onions are of a very inferior quality and limited in quantity.

Beans, Lima, ℔ lb	7	@	—
Beans, String, ℔ lb	4	@	5
Beans, Wax, ℔ lb	4	@	5
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ crate	—	@	1 25
Egg Plant, ℔ box	1 25	@	—
Garlic, ℔ lb	4	@	5
Onions, New Yellow Danvers, ℔ ctl.	75	@	1 00
Onions, New Red, ℔ ctl.	60	@	75
Peas, Green, ℔ sack	1 00	@	1 50
Peppers, Bell, ℔ box	1 25	@	1 50
Peppers, Green, ℔ box	1 00	@	—
Rhubarb, ℔ box	50	@	75
Summer Squash, per large box	35	@	50
Tomatoes, ℔ box or crate	25	@	50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

There are now plenty of fresh fruits coming into this market. Receipts are for the most part of a very good quality and are meeting with a very good demand. Prices are rather low, however, owing to the unusually large receipts, and the canneries are taking advantage of the opportunity thus afforded and are buying up large lots. Apples have suffered a considerable decline in price, choice to select stock being now held at 85c to $1 per 50-pound box, while good to choice stock is moving very slowly at 60c to 85c. Figs also show a considerable decline and peaches are slightly weaker than at last quotation. Receipts of apricots have fallen off entirely and there are very few of any grade now in the market. Owing to the few days of very hot weather during the early part of July the stocks of apricots in the fresh fruit market have been rather limited, as they were mostly picked up by dryers and canners. Berries of all kinds are very scarce and are commanding a good price.

Apples, choice to select, ℔ 50-lb bx	85	@	1 00
Apples, good to choice, ℔ 50-lb. box	60	@	85
Apples, fair to good, ℔ 40-lb box	35	@	60
Apricots, in bulk, ℔ ton	20 00	@	40 00
Apricots, ℔ box	50	@	1 25
Blackberries, ℔ chest	1 25	@	2 50
Cantaloupes, pony crate	1 35	@	—
Cantaloupes, ℔ standard crate	2 00	@	—
Crabapples, ℔ large box	50	@	65
Figs, ℔ one layer	35	@	50
Figs, ℔ two layer	75	@	1 00
Grapes, Seedless, ℔ crate	75	@	90
Huckleberries, ℔ lb	10	@	12½
Loganberries, ℔ chest	3 50	@	5 00
Peaches, ℔ large box	75	@	1 00
Peaches, ℔ small box	35	@	40
Pears, Bartlett, fair to choice, 40-lb box	1 50	@	1 75
Pears, Dearborn Seedling, 40-lb. bx	75	@	1 00
Plums, large, ℔ crate	40	@	75
Plums, ordinary, ℔ box	30	@	50
Plums, Simoni, ℔ crate	65	@	75
Prunes, Tragedy, ℔ crate	40	@	60
Raspberries, ℔ chest	5 00	@	6 00
Strawberries, Longworth, ℔ chest	2 00	@	4 00
Strawberries, large var., ℔ chest.	2 50	@	4 00
Watermelons, ℔ doz	75	@	2 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The market is in good shape. Prices are firmer in some kinds of dried fruits, apricots especially showing a substantial advance. Other prices are ruling firm at quotations given. Advices from the fruit growing section say that the apricot season is over, both at the driers and the canneries. The hot weather a few weeks ago shortened the season. Peaches and prunes are coming forward rapidly and it is likely that the whole fruit crop will be out of the way several weeks earlier than usual.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5	@	6
Apples, extra choice to fancy, 50-lb boxes.	6	@	7
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ℔ lb	6½	@	7
Apricots, Royal, fancy	8	@	8½
Figs, 10-lb box, 1-lb cartons	50	@	55
Nectarines, White and Stanwick, ℔ lb	5	@	5½
Nectarines, red, ℔ lb	—	@	4½
Peaches, unpeeled, good to choice	6½	@	7
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ℔ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¼@4½c; 50-60s, 3½@3¾c; 60-70s, 3@3¼c; 70-80s, 2½@2¾c; 80-90s, 2@2¼c; 90-100s, 1¾@2c; small, 1½@1¾c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	1½	@	2½

Raisins.

There is practically no change in the raisin market this week, and none in prices. Trading has been fairly brisk during the current week at prices made by the Growers' & Packers' Association. The tendency seems to be toward a gradual stiffening in price, and the newly formed Association is receiving the credit for this tendency. As yet no buying of futures has been reported.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	3¾	@	—c
Fancy, 16-oz. Seeded	6¼	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4⅞		c

Citrus Fruits.

The market for citrus fruits of all kinds is now in good shape and prices are being well maintained at quotations given. Oranges are very scarce, but the number is sufficient to supply the demand. The lemon market is in good condition and there is also a very fair request for grape fruit and tangerines. The above report applies to good stock only as poor stock is not worth shipping.

Oranges, Navels, choice to fancy, ℔ bx	—	@	—
Oranges, Navels, fair to good, ℔ box	1 50	@	2 50
Oranges, Seedlings, ℔ box	—	@	—
Oranges, Valencias, ℔ box	2 25	@	3 50
Oranges, Mandarins, small	—	@	—
Lemons, California, select, ℔ box	3 00	@	3 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	2 00	@	3 00
Limes, ℔ box	5 00	@	8 00

Nuts.

There has been a fairly brisk demand for both walnuts and almonds during the current week with the result that almonds are now out of the market entirely and stocks of walnuts are very limited. The harvesting of almonds has now begun in some districts, and it is expected that some of the early varieties will soon begin to appear in this market. Reports from all sections indicate that there will be an abundant crop of almonds but less than an average crop of almonds but less than an average crop of walnuts. The new crop of Nonpareil almonds to arrive is expected to open at prices quoted. The quotations are, however, nominal as regard to the spot market.

Chestnuts, Italian, ℔ lb	—	@—
Nonpareil Almonds	13	@16
Ne Plus Ultra Almonds	—	@—
Languedoc Almonds	—	@—
Peanuts, fair to prime	4½	@ 5½
Cal. Walnuts, No. 1 soft shell	12	@13
Cal. Walnuts, No. 2 soft shell	7	@ 7½
Cal. Walnuts, No. 1 hard shell	11	@—
Cal. Walnuts, No. 2 hard shell	7	@ 7½

Wine.

Owing to the fact that the size of the coming vintage is as yet problematical, it is impossible to form even a rough estimate of what the price of the growing crop will bring. The Association is extremely reticent in discussing the situation with regard to future prices. The general opinion of those who have inspected the vineyards in the northern districts bears out the estimate that about one-quarter of the Tokay crop was ruined by the hot weather in the early part of last month.

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Rope transmission is an important factor in many farm operations. One of the important features in rope transmission is the splicing. This must be properly done or the operation of the plant cannot be satisfactory. The splicing of a rope is not a difficult matter when understood. As a matter of course, by frequent repetitions of the operation the workman becomes more expert and the result of the improvement, which is the outcome of experience, is observable in the more enduring quality of the splices. The C. W. Hunt Co., of 45 Broadway, New York City, have recently issued a catalogue, No. 054, entitled "Manila Rope," which contains much valuable information on rope transmission and on ropes and their use generally. Incorporated in this handsome little volume are a number of cuts, which show clearly the methods of splicing. The following description and illustrations are published through courtesy of the C. W. Hunt Co.:

Splicing.—To properly splice a rope or tie a knot that will not slip is a simple operation, and it would be supposed that almost any workman would be able to do either, but the difficulty of getting the splices put in a rope in manufacturing establishments has been a serious drawback in introducing the use of rope for the transmission of power. There is but little information on splicing a transmission rope in technical literature, and as ordinary rope splices are not suitable for this purpose, the following description and cuts will serve a useful purpose.

The splice in a transmission rope is not only the weakest part, but is the first to fail when the rope is worn out. If the splice is not long enough the rope will fail by breakage or pulling out of the splice. If the splice is improperly made it will be larger than the rope and the projecting parts will wear on the pulleys and the rope fail from the cutting off of the outer threads of the strands.

If it is desired to profit by the experience of others, do not put in a "short splice" or an ordinary "long splice," or get an "old sailor" to do the work, but have a handy man follow implicitly the directions given below for a splice in a four-strand transmission rope.

We have had accurate engravings made of each successive operation in splicing a $1\frac{3}{4}$-inch manila rope, and also of the most common knots. Each engraving was made from a full-size specimen, and accurately shows the position of the parts.

Tie a piece of twine, 9 and 10, around the rope to be spliced about 6 feet from each end. Then unlay the strands of each end back to the twine.

Butt the ropes together and twist each corresponding pair of strands loosely, to keep them from being tangled, as shown in engraving, Fig. 1.

The twine 10 is now cut, and the strand 8 unlaid, and strand 7 carefully laid in its place for a distance of $4\frac{1}{2}$ feet from the junction.

The strand 6 is next unlaid about $1\frac{1}{2}$ feet, and strand 5 laid in its place.

The ends of the cores are now cut off so they just meet.

Unlay strand 1, $4\frac{1}{2}$ feet, laying strand 2 in its place.

Unlay strand 3, $1\frac{1}{2}$ feet, laying in strand 4.

Cut all the strands off to a length of about 20 inches, for convenience in manipulation.

The rope now assumes the form shown in Fig. 2, with the meeting points of the strands 3 feet apart.

Each pair of strands is successively subjected to the following operation:

From the point of meeting of the strands 8 and 7, unlay each one three turns; split both the strand 8 and the strand 7 in halves as far back as they are now unlaid, and the end of each half strand "whipped" with a small piece of twine.

The half of the strand 7 is now laid in three turns, and the half of 8 also laid in three turns. The half strands now meet and are tied in a simple knot, 11 (Fig. 3), making the rope at this point its original size.

The rope is opened with a marlin spike, and the half strand of 7 worked around the half strand of 8 by passing the end of the half strand 7 through the rope, as shown in the engraving, drawn taut, and again worked around this half strand until it reaches the half strand 13 that was not laid in. The half strand 13 is now split, and the half strand 7 drawn through the opening thus made, and then tucked under the two adjacent strands, as shown in Fig. 4. The other half of the strand 8 is now wound around the other half strand 7 in the same manner. After each pair of strands have been treated in this manner, the ends are cut off at 12, leaving them about 4 inches long. After a few days' wear they will draw into the body of the rope or wear off, so that the locality of the splice can scarcely be detected.

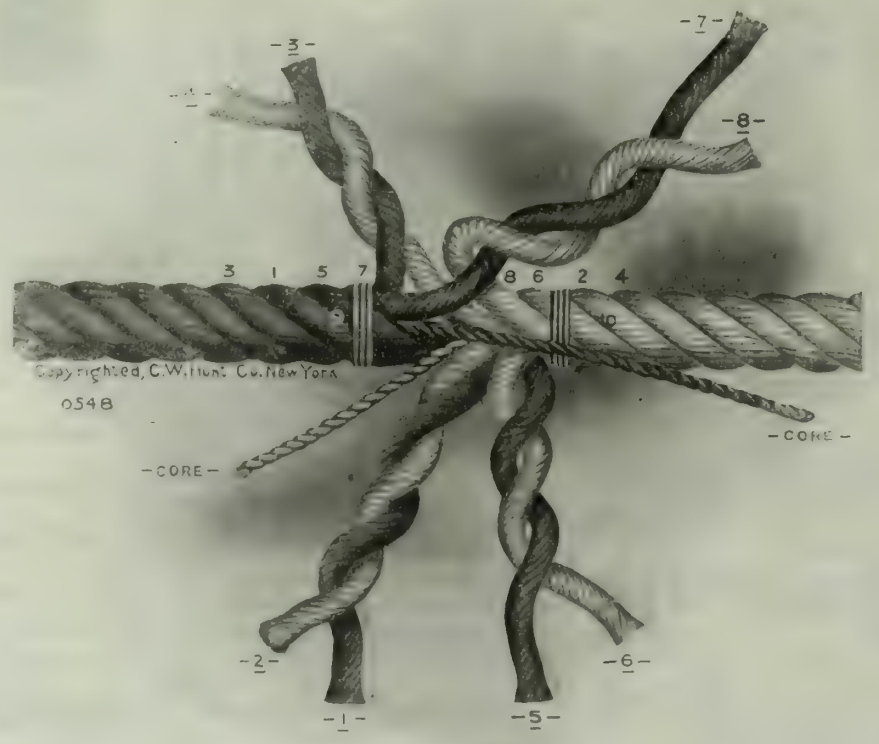


Fig. 1.

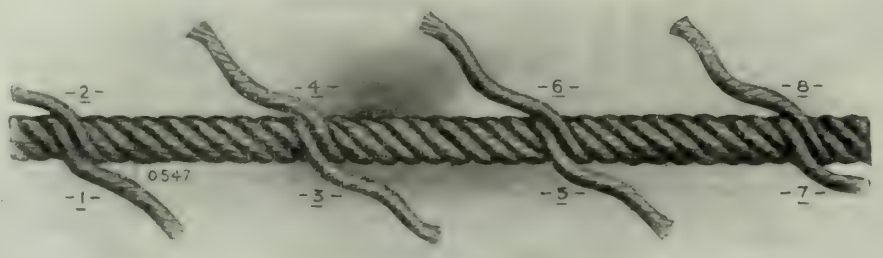


Fig. 2.

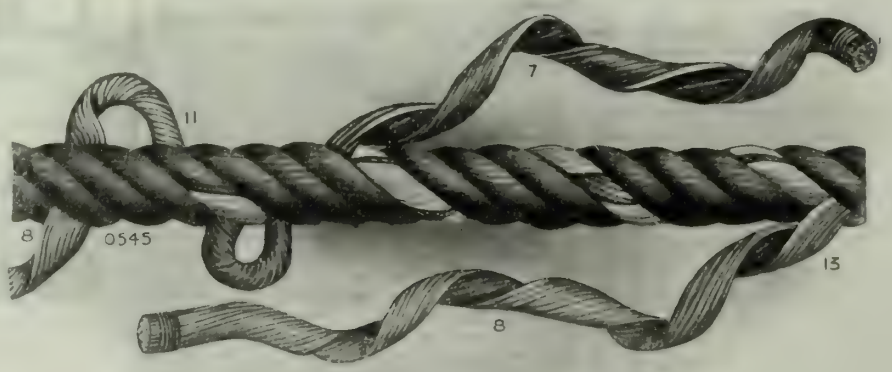


Fig. 3.

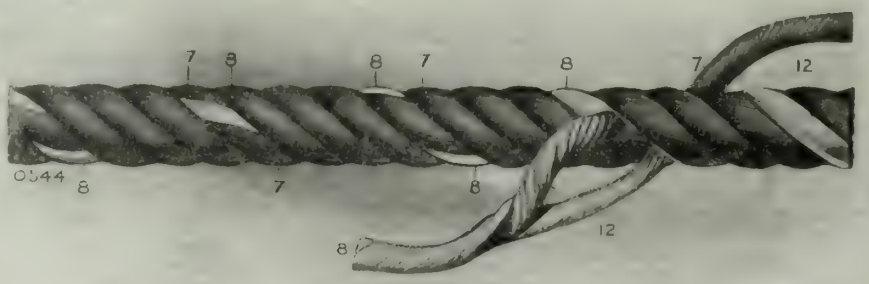


Fig. 4.



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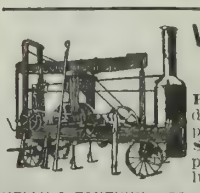
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THE VETERINARIAN.

Interesting Facts About Texas Fever Ticks.

Stock growers in California below the quarantine line will be interested in the following facts about the growth of the Texas fever ticks and under what conditions pastures can be expected to become free of them. The facts are from a special study just made by Prof. H. A. Morgan of the Louisiana Experiment Station. Although the fixing of months for various phenomena in the life of the tick may not be correct for California, it must serve as the best approximation until our own investigators undertake local studies:

Many Ticks, But One Dangerous — There are five species of ticks found upon cattle in Louisiana which the stock raiser might experience some difficulty in differentiating: The North American Texas fever tick (Boophilus annulatus), the lone star tick (Amblyomma americanum), the dog tick (Dermacentor electus), the net tick (Dermacentor reticulatus), and the castor bean tick (Ixodes ricinus). The first is the only one which should give the breeder any concern, but persons not familiar with the specific differences have confused the habits and development of the fever tick with those of the lone star, dog and net ticks. While the habits (except in selection of hosts) and development of all these species are very similar up to attachment to host animals in the seed tick condition of each, there is a very marked difference in habits and development of the fever tick and the three other species from the period just before the first molt to the fully mature and engorged females. The fever tick remains upon its host throughout the molting periods up to engorgement, while the other species drop from their hosts just prior to each molt. The latter habit greatly prolongs the life cycles of the lone star, dog and net ticks, even to as much as ten months or a year, and in consequence reduces the numbers to such an extent that they are not in any sense serious pests.

Life Cycle of Fever Tick.—As the pasture rotation remedy for the Texas fever tick is based upon a study of the life history and habit, a general statement of the development of this species is given in order that the plan proposed for its extermination may be more clearly understood.

The fully engorged female (that stage most commonly observed upon animals) detaches itself from its host, drops to the ground, and deposits as many as 3000 eggs. The number of eggs laid by individual ticks and the time required to deposit them vary with the food and temperature conditions. In summer, with food conditions normal, even more than 3000 eggs may be deposited in a few days; in late fall and winter as long as a month or more may be consumed in laying half, and less than half, of the eggs a tick of the same size would deposit in summer. Eggs laid in summer hatch in from twenty to thirty days, while those deposited in late fall and winter months may not hatch until the following March or April. On hatching, the ticks are called "seed ticks" in distinguishing them from the "yearling" ticks (stage after first and second molts) of the lone star and dog tick species, which may collect upon a person in walking through a pasture or woodland, or from the same stages of the fever tick found upon cattle. The seed ticks bunch in an exceedingly local manner upon grass and twigs of weeds and shrubs, and there await the passing of some animal to which they attach. These seed ticks possess remarkable vitality in that they may remain in a pasture as long as two months in summer and over six in winter before perishing in case no host animal should pass and collect them. On being collected by a host animal the young ticks soon attach themselves and begin their parasitic life. The time required to develop (molts twice) upon cattle is important in connection with the remedy suggested. During the midsummer, full engorgement of the mature tick ranges from nineteen to thirty days after attachment, while in late fall and winter the cycle of development upon cattle is usually a few days longer, ranging from twenty-eight to forty days.

From the foregoing it will be seen that the female ticks during the egg laying period, the eggs, and the young ticks (seed ticks), prior to attaching to animals, are to be found on the ground of pasture fields and not on animals; while the remaining stages—seed ticks after attachment, stage after first molt and stage after second molt to engorgement of females—are consecutively developed upon the animals, and at no time upon the ground, grass, weeds or shrubs of the pasture.

Egg Laying.—In the study of the development of the Texas fever cattle tick during the summer months it was found that the time required for seed ticks after infesting animals to mature into engorged females and drop to the ground for egg deposition was a little less than the time required for a female after dropping to lay eggs, and these eggs to hatch. Therefore infested animals might be cleaned of ticks by being placed in a tick-free field, upon which to drop all their ticks before eggs from females dropped the day the animals were placed in the pasture would hatch. The time between the dropping of the ticks and possible reinfestation was of too short duration for this plan to be practicable in the face of slight developmental variations due to changes in temperature or other conditions. Experiments were conducted in order to determine if a wider range of time between these important suggestive remedial periods did not exist and thus develop a remedy easily within the range of the average farm operations of the State. Continuing the breeding experiments through every month in the year, it was found that eggs deposited the latter part of November and in December, January and February, did not hatch until late March, April or early May, and that the longest period of development of the tick (from seed tick to full engorgement and period of dropping) upon cattle during these months was forty days, thirty-five being in most cases ample for the development and dropping of every tick. It thus became easily possible to place infested animals upon the tick-free areas during late November, December and January, have them drop every tick, and run no risk of reinfestation, as eggs did not hatch under the prevailing temperature of these months.

Starving Out Ticks. — The next phase in the development of a practical remedy was the determining of the length of time necessary to starve ticks out of a pasture when all hosts (cattle, horses and mules) were excluded. Experiments during the summers from 1897 to 1904, inclusive, showed that about one month was necessary for the laying and hatching of eggs and that seed ticks could endure as long as two months in summer without food. For example, if all hosts of the cattle tick were removed from a pasture on June 1 this pasture would be tick free by early October.

The fall and winter months, though a decidedly opportune period for ridding animals of ticks, were found less effective as a period for cleaning pastures by excluding cattle tick hosts. Eggs deposited in late fall may not hatch until the next March or April, and seed ticks may live without food from late September until the middle of the following April. It will thus be seen that more time is required during the late fall and winter months to deposit and hatch tick eggs or to starve out seed ticks than is necessary during midsummer to effect both operations.

With this information a remedial application may be perfected to meet the conditions upon the farms or plantations of the South. Pastures may be divided so that from a portion of them all animals (cattle, horses and mules) upon which the Texas fever cattle tick develops may be excluded from June 1 until late fall in order that the animals when cleaned of ticks may have a tick-free field in which to be placed. To be cleaned the animals may be placed, not earlier than the middle of November, in a corn or cotton field from which the crop has been removed, and there kept until the ticks have dropped (thirty-five or forty days). In no case should they have access to the pasture from which they have just been taken, as animals may become infested during a warm spell of the winter months with seed ticks which hatched in September or early October. (Seed ticks hatched September 29, 1903, remained alive without food until April 10, 1904). As soon as all ticks are dropped the animals may be removed to the tick-free field, or they may remain longer without danger of reinfestation if the corn or cotton field provides sufficient pasturage. Not later than February they should be placed in the tick-free field to be fed the hay crop gotten from this area the previous season. Upon this tick-free area they may be kept until sufficient time has elapsed to destroy the ticks by starvation in the pasture from which they were removed into the corn or cotton field the fall previous.

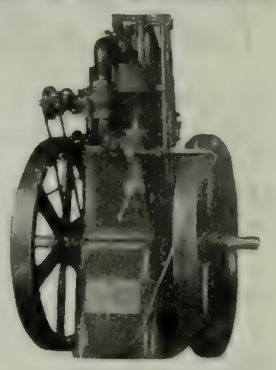
Feed Lot Method.—It should be remembered that not all farms nor all fields of individual farms lying below the national quarantine line are infested with the fever tick. Parishes of Louisiana devoted to sugar cane and rice culture are practically free from ticks. Many cotton plantations are also exempt, and those parts of all farms upon which no cattle have been from June 1 until October 1, or later, are also tick free. These areas may be advantageously used in eradicating the fever tick from contiguous ones.

The "feed lot" method of cleaning cattle is based upon the fact that the parasitic period (from attachment as seed tick to dropping to ground as a fully engorged female) of the fever tick is not more than forty days; less in summer. In this method a portion of ground is set apart, half of which is of sufficient size to accommodate the number of cattle on hand. The area selected should be convenient to plenty of feed and water. Surround and divide the lot with a double fence (8 to 10 feet space). Feed the cattle for twenty days on one side, then remove them to the other for fifteen or twenty days longer. Every tick will have dropped, and the cattle may then be placed upon such field or pasture as may be tick free and available. By this method entire farms may be cleaned during a summer period of not exceeding four months. In the early spring select a field with water and shade available to be devoted to broadcast sorghum, corn or millet, or all three. On June 1 fence off the feed lot (within the forage field), in which place all the cattle of the farm, and feed and rotate as described above for forty days. At the end of this period the cattle may be turned into the field of sorghum, millet or corn and there pastured until October 15 or November 1, by which time all fever ticks upon the entire property outside of the feed lots will have perished.

After the animals are removed the feed lots should be immediately plowed and thoroughly cultivated, and their edges sprayed with crude petroleum, zenoleum solutions, or other substances destructive to tick life.

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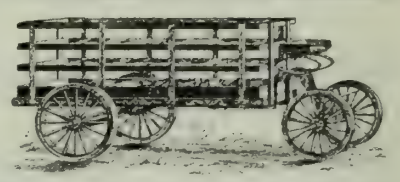
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THE DAIRY.

Cement Floors for Dairy Barns.

From a Bulletin by Mr. H. E. Cook of New York on "The Construction of Sanitary Dairy Stables."

The Foundation Walls and Floors.—Concrete is the only material which meets the three requirements of sanitation, durability and economy. It also possesses that much-to-be-desired quality of being fireproof. Prejudice against it is fast dying out and its merits are becoming generally appreciated. While concrete construction is comparatively simple, it is not art into which guesswork can be mixed with safety. Portland cement and clean, sharp sand are requisites. Grouting or foundation work can be made of gravel, crushed stone, or small field stone, often called "hard heads." When obtainable these are much cheaper than crushed stone or gravel, since they require less cement to hold them in place.

Making Floor. — First level the space to be floored. If it is soft dirt, drain it and solidly tamp the loose soil. Ordinarily sufficient drainage will be given by the trench under the barn wall. If there is any doubt, put a run of tile drains through center of the building. Line through for the trenches, dig a ditch 2½ feet wide and 6 inches deep, and lay the small field stone of about 5 inches in diameter to an upper line, then fill in with a mixture of Portland cement one part and sand five parts. This should be mixed dry and be made wet enough to enter every space between and under these round stones Tamp the whole to insure firmness. Lay up a wall on each side exactly 20 inches apart. Then put upon the bottom, before the foundation is dry, 2 inches of mortar made of Portland cement one part, sand two parts, dry mixed, and with enough water added to make it spread easily. As soon as this is set put a box upon it 16 inches wide, 8 inches high upon one side and 6 inches upon the other. Fill in this 2-inch space with a finishing coat of two parts Portland cement to one part of sand. After the cement has set take out the form and trowel this gutter smooth with cement and sand equal parts. The rest of the foundation can be laid in the same manner. The surface should not be left smooth. After it has set, but before it has hardened, finish with a small board trowel which will give a sandpaper finish to all parts where the animals walk. This does away with all danger of slipping. In any portion of the building which is subject to freezing temperatures, the floor should be laid in checks about 3 feet square. The finish coat should always be laid down before the grout has hardened and may vary in thickness from 1 inch to 2 inches, depending upon the strain to which it will be subjected. For example, a granary floor and feeding mangers may be finished light. The drive between the cows should be heavy, including gutters; the cow platform may be finished medium.

Whenever a partition is to be built, anchor short pieces of ¾-inch iron pipe projecting above the finished floor 1½ inches. Upon these can be placed a 3x4 scantling and the superstructure built thereon. There will be less danger of the horses slipping when hauling manure upon sleighs if at least one-half of the driveway nearest the outlet door is grooved or creased. This makes the driveway harder to clean, however. The whole passage may be grooved if it is thought desirable. Where one or two steps are needed to reach an elevation, make them of concrete. Cover the barn wall where it projects into the stable so that every part will be smooth, easily cleaned and also offer no shelter to mice and rats. The granary floor should be of this same material, and should be laid in checks if there is any danger of freezing under it. The stanchion bedpiece may be made of concrete instead of wood, thus avoiding a dirt catcher.

If small field stones are not at hand, gravel or crushed stone can be used in t. This should be put down 3 to 4 inches thick, firmly tamped, and the surface coat applied as suggested above.

The Advantages of Concrete.—It is impossible to give exact figures as to cost of cement construction, because the farmer will rarely hire the work done. About 12 cents a square foot will cover the entire expense of a cement floor built in a substantial manner. Much of the work can be done at odd times, thus reducing the money outlay by one-half. It is not advisable for any one not possessing a mechanical turn of mind to lay down the finishing coat He may make it hard and durable, but it may lack that true-to-line finish which makes cleaning easy. Remember that a properly built concrete floor should last a lifetime. If it is not built properly it will be a constant source of trouble to man and beast. The writer has this floor in use under cows, horses, hens and pigs and it is successful in each case. While concrete makes sanitation possible, which cannot be said of plank, it also makes possible the perfect saving of all animal excreta. The oft-heard objection to cement, that it is cold, is as true today as ever. Cement is cold not because it has a lower temperature itself, but because it is a rapid conductor of heat, unlike wood, a non-conductor. A thin covering of any non-conducting material, like dry shavings, sawdust or straw, will insulate it and keep it from chilling the animals. No kind of domestic livestock should lie upon bare cement. A serious objection to a plank platform is that the soaking of liquids and the wear under the hind feet make cleanliness impossible. All this is done away with when cement is used. There is no doubt but that cement stable construction is usually the cheapest, and always the most sanitary.

Is Butter Yield Correctly Indicated by the Fat Test?

How accurate an index of the actual butter-producing capacity of a cow is the Babcock fat test? This is an important and interesting question, which has been much discussed. Probably the fat test is a more accurate index of the amount of butter that can be got out of the milk of some cows than in the case of the milk of others, as the amount of fat lost in the processes of creaming and churning will vary in proportion to the percentage of fat in the milk and the churnability of the cream. As to the quality of the butter that the milk of any particular cow or breed will produce, the fat test offers, of course, no evidence.

However, it may be in regard to the milk of other breeds, as to the accuracy of the fat test as an indicator of the amount of butter obtainable from the milk of Jersey cattle we have valuable data in the confirmed butter tests made under the authority of the American Jersey Cattle Club The far-seeing wisdom of this club seems to have provided this class of tests for the express purpose of throwing light on this question.

In the case of confirmed tests made under the rules of the A. J. C. C., an appointee of the club, usually the representative of a State experiment station, sees the cow milked, weighs the milk and takes a sample of the milk of each milking for testing by the Babcock process. By the results of these tests he calculates the amount of fat contained in the milk, and also the amount of butter containing 85% fat that the fat should produce. He also takes a sample of the butter of each churning for analysis at the station laboratory. A sworn report of all the results is sent directly to the A. J. C. C.

This is the "confirmation" part only of the test. In addition, the owner of the cow weighs the milk, separates and churns the cream and makes a sworn report to the club of the amount of milk and butter produced.

Here we have two independent tests of the same animal for the same period, the one scientific, the other practical, furnishing the very best evidence on the question of the reliability of the fat test as an indicator of the amount of butter that can really be produced.

Under the above method, forty-three confirmed butter tests, so far, have been made and reported to the club, each for the period of seven days. These tests have been made by various State experiment stations in diverse sections of the country. According to the calculations made from the Babcock tests by the official testers, the forty-three cows should have averaged 15 pounds 14¼ ounces of 85% butter each, in seven days. The forty-three cows actually produced, on the average, 15 pounds 8⅝ ounces butter each, in seven days, the butter being calculated on the basis of 85% fat. This is to say that there was a difference of only 5⅝ ounces butter per cow per week between the butter shown by the fat test and that actually churned out. This difference would just about cover the fat lost in the skim milk and buttermilk.

The writer knows of no data of this conclusive character in the case of the milk of breeds other than the Jersey; but as far as Jersey milk is concerned, computation of butter by means of the Babcock test, applied to each milking, is proved to be an accurate measure of butter capacity. R. M. Gow.

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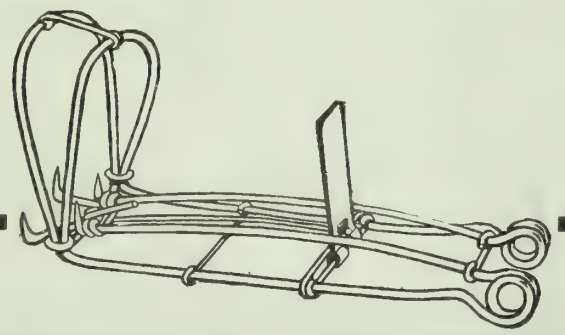
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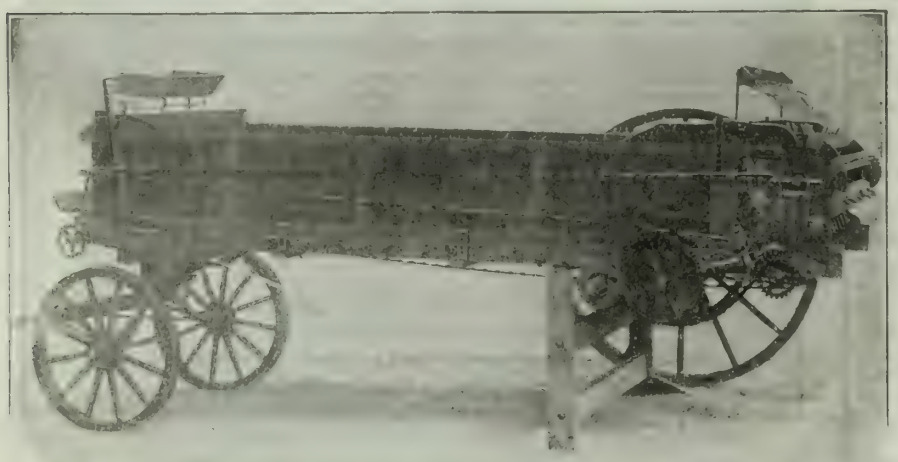
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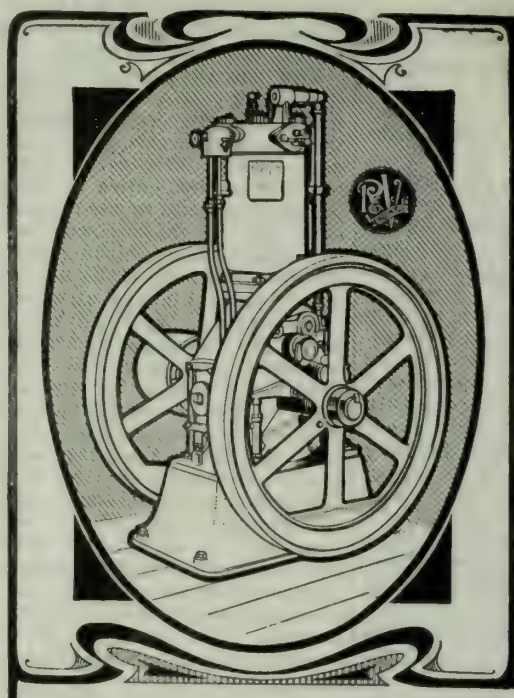


CUT OF SUCCESS SPREADER with left hand rear wheel removed, showing gear drive for running apron. Drum is driven by a steel pinned chain on right hand side. These are features peculiar to the Success alone and add greatly to its long life and light draft.

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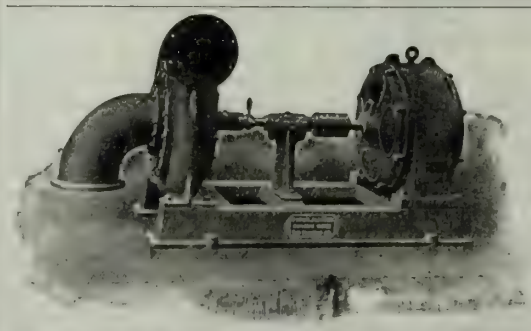
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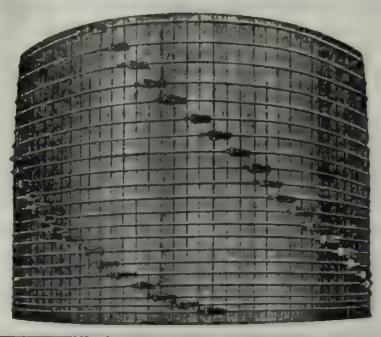
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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 8. SAN FRANCISCO, SATURDAY, AUGUST 19, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

California Fruit Scenes.

We choose this week two pleasing fruit pictures from the last annual report of the State Board of Trade, just published. This organization has honorable age and accomplishments in several lines, but one of its distinctive benefits is that it has systematically kept pace with the developments of the great fruit interests of California, and its reports constitute the only literature in book form in which all the details of annual growth and movement of the product can be found. This work has received the personal attention of General N. P. Chipman, the president of the Board from the beginning, and his analysis of the statistics of the general trade and transportation entitles him to the cordial public approval which he enjoys. The enterprise of the Board in such publications, in the excellent exhibit which it maintains, and in the care and intelligence which the general manager, Mr. A. R. Briggs, manifests in his correspondence and published papers, have all figured largely in the wider knowledge of California which outside parts of the world now possess.

The pictures which we select are largely self-explanatory. The trees in the upper picture are quite old and represent an orchard started before California had definitely fixed upon the low-headed trees which are seen at starting in the lower picture. The picture demonstrates, however, the fact that trees on good soil and well cultivated may be thrifty and profitable into considerable age. It is difficult to say how long a fruit tree will pay in California, for some planted in the first decade of our American history as a State are still thrifty and productive. The lower picture is illustrative of younger orchard interests. The young trees are models of youthful form, started and trained aright, and being well cared for, as the trees themselves show by the length of their new growth. They are evidently planted upon a piece of rather gravelly soil, and the secret of their success is in the water with which they are being carefully supplied. One would choose rather a finer loam for fruit trees, and yet if there be enough of the fine sediment, and depth enough for deep rooting, and a good gardener to care for the trees, they will succeed and amply reward the planter and justify him in living in such a neat suburban home as the picture also shows. There is a charm in these outdoor scenes.



An Old California Orchard in Blooming Time.



Irrigating Young Fruit Trees in a California Orchard.

THE California State Board of Forestry has decided to print an abstract of the State forestry laws and also an appeal to the public to assist in carrying out these laws and to volunteer information and assistance. It has been decided that officers of the Federal Forest Reservations will be clothed with the same power as State Fire Wardens.

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DEWEY PUBLISHING CO.....Publishers

E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, AUGUST 19, 1905.

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The Week.

Perhaps the most interesting topic of the week is found in connection with Eastern fruit shipments. We print upon another page an interesting sketch of the season's character thus far, which is certainly encouraging. During the last few days, since that sketch was prepared, Eastern sales have continued good and high prices very frequently reached. The Eastern States need fruit badly this year.

It is also very interesting that efforts for more expert handling of fruit, after placing in cars, indicate that better work will be very effective. We have just received from Mr. G. Harold Powell, of the pomological division of the United States Department of Agriculture, an outline of his work this year with California deciduous fruits as follows:

Eight cars were shipped East from Newcastle to determine the effect of pre-cooling peaches and plums on the shipping quality of hard, ripe fruit. A definite amount of hard, ripe fruit was picked for each car. The fruit was cooled in refrigerator cars by the use of ice and salt. One-half carload of warm fruit was placed in each of two refrigerator cars at Newcastle. After cooling about thirty-six hours, it was transferred to an iced car and sent East under full icing. It was intended to refrigerate the fruit to about 40° F. in twenty-four hours, but, owing to the wrapper around the fruit and the closeness with which it is packed in the box, it was found impossible with the facilities at hand to reduce the temperature much below 55° in thirty-six hours. Under similar conditions in Georgia, no trouble had been experienced in reducing the temperature of the unwrapped fruit in the open peach carrier to 40° F. in twenty-four hours. In most of the shipments the temperature in transit was carried down to about 40°, where it remained steadily.

Taken as a whole, the hard, ripe fruit picked especially for the tests arrived in the East in firm condition, most of it being still firm enough for reshipment. In all cases where the fruit was pre-cooled sufficiently fast at Newcastle, and it had not gone beyond hard ripeness when packed, it arrived East in prime condition

The fruit in three of the cars was picked and shipped in the extremely hot weather between July 6th and 12th, and varied from 95° to 100° F. when placed in the cooling cars. With the exception of the first car, which was cooled more slowly than the others, the fruit arrived in the East in firm condition. In the first car the fruit as a whole was sound, but there was some unripe fruit in the hard-ripe peaches picked especially for the shipment. The results of the experiment as a whole are not conclusive, but are very suggestive. They indicate strongly that hard-ripe fruit of higher color and better flavor than the average California peach or plum can be placed in Eastern markets in prime condition, provided the fruit can be refrigerated quickly to about 40° F. soon after picking.

To conclude the investigation, it will be necessary to erect a small cold storage plant of sufficient refrigerating capacity to cool the fruit in the desired length of time. For this purpose the Department has no funds available, but it is hoped that the matter may be of sufficient importance to the fruit interests of California to justify it in providing a small plant for this purpose.

It only should be sufficient for Mr. Powell to suggest this needed outfit to secure its provision by California growers and shippers. The chances of demonstrating very important facts are so great that California should provide the Government experimenters all they need in the way of reasonable outfit for their work. This subject should be made prominent at the next Fruit Growers' Convention.

It is also interesting that the Cyclone fruit car cooling arrangement to which we alluded a few weeks ago is demonstrating success. Lieutenant Governor Anderson is frank to say that he is favorably impressed with the operation of the cooler. He says: "As regard the efficiency and utility of the quick cooling of cars there can be no question. All the experiments carried on by the Federal Government in this matter are in this direction; all experts are unanimous on this point. The only question is how best and most quickly to do the work. The Cyclone cooler is a long step in the right direction." The Cyclone outfit is the device of Mr. A. R. Sprague, for several years at the head of the growers' co-operative work in shipping deciduous fruit, and it shows that he has had his thinker at work, even though largely occupied with exhortation.

Wheat is not very lively this week. Futures are dulled by the feeling in the Eastern markets and the local expectations of much wheat at the north. Spot trading is also slack. Barley has advanced and is firm, for little is offered, except discolored grain, which is dull. Futures in barley are held up well. Oats are scarce and in demand. Corn is in light supply and largely taken for grinding. Rye is firm. Beans are scarce and higher. Hay is unchanged; fancy selling easily and lower grades dull. Bran and middlings are still in short supply and firm. Meats are abundant and slightly lower. Butter is in brisk demand and large quantities, both fresh and for storage, disposed of. Cheese is firmer but unchanged. Eggs are coming out of storage and prices being talked down. Poultry sells readily in all grades. Potatoes look a little better, though not higher yet; considerable Eastern shipments have been made. Onions are weaker. Fresh vegetables are rather low all around, except fresh Lima beans. Oranges are in moderate supply and selling well. Lemons are firm, and grape fruit lower. Fresh fruits are abundant and prices lower this week, while dried fruits are all firm and advancing. Nuts are strong, but supplies scant. New almonds are about due. English walnuts promise to be considerably higher than last year. Honey is plentiful and weak. Hops are dull and little doing, but growers are confident. Wool is still unfixed, though some contracting is said to be done at private terms.

We recently gave the case of the stockmen against the new regulations about cattle in transit. Secretary of Agriculture Wilson held a conference this week with prominent cattlemen, who made it plain that they were opposed to the law which required shippers to feed and rest cattle every twenty-four hours on the journey. They want it extended to thirty-six hours. The ranchmen argued that it distressed the cattle more and does them more harm to take them from the cars every twenty-four hours than it does to allow them to remain in a car for a day and a half. Secretary Wilson told the stockmen that he could not change the law, but he agreed to modify the order, which now limits the number of cattle in cars when they are fed en route.

A writer for an interior exchange reports: "There is abundant testimony that the farmer who can raise good cattle on home-grown feeds and sell them at an average of $100 is certain to make money." That is surely true, but how is he going to sell them for $100 each? Probably as fine a bunch of stock as ever left the State, 380 head of prime three-year-olds, sold at Red Bluff last week at 3½c per lb. gross weight and the average weight was 1320 lbs. each.

QUERIES AND REPLIES.

Willow Sprouts—Tomato and Melon Blight.

To the Editor:—Last fall or early winter I grubbed out about one acre of willows and have plowed them during the spring and summer at an average of about eight days and still they persist in coming up, though I think not so many as came up some time ago. I have about one more acre to clear. Give me all the pointers you can in clearing land of willows and I shall receive them thankfully.

Please tell me if there is any preventive or remedy for tomato blight? When the watermelon vines turn brown in the center, is it sunburn or disease? Is there any way to prevent it; if so, what?—Farmer, Monterey county.

There is probably no way of keeping down the willows on the land which you have grubbed out, except pulling the shoots and grubbing the remaining roots whenever you see indication of their activity. There is no application which can be made to the soil to destroy them, without destroying its fertility for other plants. If you cut willows and other trees at the height of their activity in midsummer, you can often kill them outright, and in that way prevent their shooting afterwards, while cutting late in the fall or early winter does not produce the same effect upon the roots, but rather encourages them to activity afterwards.

There is no satisfactory treatment for the bacteriological blight of the tomato, which is the disease to which you probably refer. You can prevent the spread of it by burning of plants which seem to be affected, as soon as the disease appears upon them, and you can get healthy tomatoes generally by growing them on land which has not been recently used for tomatoes. Watermelon vines are also subject to a similar blight and should be treated in the same way, and the crop grown, as far as possible, each year on new ground. There is, however, a sunburning of watermelon vines, but you ought to be able to detect that, because it should have appeared immediately after the hot weather which prevailed in the coast region a few weeks ago.

Nitro-Bacteria for Alfalfa.

To the Editor:—Kindly inform me whether or not nitro-bacteria can be successfully used to increase the alfalfa product, and if so, how is it used and where can it be obtained, and at what cost per acre? If same has not yet been applied to alfalfa culture, please advise as to its success in other directions.—Farmer, Santa Ana.

Whether nitro-bacteria can be used to advantage in the growing of alfalfa depends largely upon whether these bacteria already exist in the soil or not. If they do exist, and the very free growth of alfalfa in nearly all parts of California would seem to indicate that they do, there is probably nothing to gain by addition. Wherever alfalfa fails to do well, and soil and moisture conditions seem to be right, the presumption is that the bacteria are absent, and in such cases their artificial introduction should certainly be undertaken to determine whether this addition is a satisfactory recourse. No one can certainly tell in advance of an experiment what can be accomplished by the use of this agency. The same is true not only in regard to alfalfa, but to all leguminous plants. The material can be had from leading seedsmen at prices which they will quote you on application.

Second-Crop Grapes.

To the Editor:—How shall I treat grape vines to get a second crop of fruit?—Grower, Riverside.

Treat them well and they will do it themselves if they are so inclined. Grape vines in California make a second crop because the growing season is long, and the second start of laterals is made from the canes which bear the first crop. No process is necessary for this, except to keep the vines well supplied with water to continue their growth. The growth of the second crop is not usually considered desirable; in fact, our raisin makers would prefer to concentrate the strength of the vine upon the first crop and do away with the production of the second, although under certain conditions, of course, the second crop of grapes may be desirable for table purposes. The Muscat of Alexandria, which is chiefly used for raisins, seems to be particularly disposed to make a second crop, providing conditions for continued growth are favorable.

Figs Need Caprification.

To the Editor:—I have two fig trees about ten years old. They are both in a flourishing condition—one being larger than the other because of a sink spout emptying near its roots. The fruit on either never comes to maturity, but drops off (a large crop) when about the size of sample I send you by this mail. I am anxious to know if I can take any step that will prevent the fruit from dropping off. The foliage on the trees is green and perfect. There is one old (thirty years or over) fig tree 200 yards away (to windward), that always sheds its fruit in same way. No other fig trees are in this locality.—Orchardist, Amador county.

Your fig samples indicate that you have, probably, to deal with fig trees grown from cuttings introduced from Smyrna in the latter '70's, when it was not known that it was necessary to have the wild, or Capri, figs growing near these trees in order to make them hold and ripen their figs. The thing for you to do now is to secure from the nurseryman a tree, or more, of this wild variety, and as soon as it begins to fruit introduce the Blastophaga, or fig insect, which can now be furnished by nurserymen dealing in fig trees. This insect breeds in the wild fig, and visits the cultivated figs in the neighborhood. Its presence in the cultivated fig accomplishes the fertilization of the blossom, which is inside the fig, and enables the fruit to proceed to perfection and maturity. When this is done the figs no longer drop off, nor partly develop, as in the case of the samples which you sent. You can get a full description of this process of fig pollenization in the pamphlet by Mr. George C. Roeding of Fresno, already mentioned in answer to another question this week.

The Beach Strawberry.

To the Editor:—Last year we got from the University a dozen strawberry plants (I think it was called a wild or Beach strawberry). After planting them in Fruitvale I let the runners take roots, and when we moved to Santa Clara valley I took the plants along and put them on a temporary place till in January, when I planted the old as well as the rooted young plants into their permanent place. Up to date they grew nicely, look healthy, and show always a great many runners, which I cut off, as I was advised to do. But so far I had not one single blossom on the five dozen plants. What may be the cause of that?—Amateur, Gilroy.

It is probable that your strawberry plants are not blooming because of their transplanting. These wild strawberries are not so early in bearing as the improved varieties, and take longer to establish themselves. We suppose you understand that these varieties were sent out, not because the fruit would compare with the cultivated varieties very well, but to enable originators of the new varieties to make crosses of this wild strain with the cultivated varieties. For this reason you should not depend upon these varieties for excellence of fruit, but simply look upon them as an interesting experiment.

Failing Cherry Trees.

To the Editor:—I have in my cherry orchard two rows of cherry trees—Chapman and Governor Woods and some other varieties—that look as though they are dying from some disease. Their appearance now is that the leaves are brown and dead and the small limbs seem to break easily, as though they, too, are dead, while some are only partially that way. If you can give me any advice as to what I can do to prevent the decay of these trees, would be pleased to have you do so.—Grower, Solano county.

While we cannot actually state what is the matter with your cherry trees, we apprehend that they are dying because of injuries at the root, and this may be either caused by the ground being too long saturated with water last winter, or by their having been allowed to become too dry during the last few weeks. The cherry tree strongly resents too much water and too little. The description which you give rather indicates that this latter condition may have prevailed. We have seen large trees after twenty years or more of successful bearing give out in this way, because of insufficient moisture in the soil.

Laws About Johnson Grass and Weeds.

To the Editor:—Is there any law in California to prevent the spreading of noxious grasses and weeds, particularly Johnson grass? What is the law and what is the remedy?—Reader, Redlands.

There was enacted by the Legislature of 1903 a special law against Johnson grass, making it unlawful for any person to "knowingly sow, disseminate, or cause or permit to be disseminated, any seed of Johnson grass over or along any roadway, highway, or right of way for ditch purposes, adjacent to premises owned or possessed by him." This law was specially aimed at ditch companies who have allowed noxious weeds to grow along the edges of canals, and the seeds to float along until they found lodgment, much to the detriment of the land so injured. The penalty is a fine not exceeding $100, or by imprisonment not exceeding three months.

There are other laws, which you can ascertain by consulting the published statutes, compelling the eradication of weeds along highways, etc. Quite recently the Horticultural Commissioner was charged by law with promoting this work, and a bulletin is about to be published by the State Horticultural Commissioner, at Sacramento, giving information on this subject.

Fig Growing.

To the Editor:—Would it be asking you too much to give me all available information relative to the recent development of fig culture in California. This information is for use of a number of persons who wish to locate in this State. I wish chiefly to know in which portion of the State figs give the best results—if in the valleys, foothills, or on the coast. Of course I mean the figs that are similar to the imported article.—Reader, Alameda county.

We cannot repeat the full record of fig growing, which has occupied many columns in the Pacific Rural Press during the last few years. The best special pamphlet on commercial fig growing for drying in California can be secured by sending to George C. Roeding, Fresno, for his pamphlet on "Fig Culture." Our book on California Fruits deals with the fig, and other fruits grown in this State. To grow figs for drying you should certainly locate in the interior valley, or in the lower foothills. The coast region is too cool to secure proper ripening of the fig, and is also not so well adapted to the drying process.

Pruning Currant Bushes.

To the Editor:—Please acquaint me with the proper method of pruning or trimming currant bushes—red currants, five and six years old. Should the bushes be cut back or just the tips taken off?—Grower, Hollister.

The best way to trim currant bushes is not to cut back the tops, but to thin out the old wood and retain that of newer growth, cutting back the branches which you wish to remove as low as you can without interfering with the new shoots. This keeps your bushes well supplied with bearing wood, prevents them from becoming too brushy, and gets rid of any borers which are apt to locate themselves in the older wood. Currant bushes can be grown with single stems and made to branch like miniature fruit trees, but the danger then is that the borers will get in the main stem, and your plant will be ruined, while if you keep growing many new shoots from below, this danger is averted.

Red Spider.

To the Editor:—I have a peach orchard some of whose leaves are falling off. The tree takes on a grayish appearance and the upper part of the crown loses its leaves. I notice lots of web (spider web) on the small limbs and leaves. I pronounce it red spider, though I have never seen any before. Am I right? What can I do? The trees are Heath Cling—the ground just irrigated. Will it kill the trees if nothing be done? It is worst on about a dozen trees. I notice spider web on the ground under the trees.—Beginner, Tulare county.

The probability is, from your description, that you have the red spider. Full account of treatment was given in the Pacific Rural Press of February 4, 1905, and September 5, 1903. You should hasten with the dry sulphur application, because if the spider has advanced so as to accomplish the falling of the leaves your fruit is doomed.

The California Wild Almond.

To the Editor:—I send a branch of some kind of fruit or berry which I found in the hills, near here, and kindly request you to tell me what kind of fruit it is.—Collector, Ballard.

The small fruits which you send are commonly called the California wild almonds. Some botanists have placed them in the almond family (amygdalus), but their connection seems to be with the plums, and the botanical name at present approved is Prunus fasciculatus. The little tree is particularly interesting because its root has been used as a stock for the almonds in the Mojave country, and trees grafted upon it seem to make very satisfactory growth. It has been hoped that by using this root, which is native to the district, more hardy almond trees could be secured, and this claim is now in process of demonstration.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 14, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather was clear during the week, with high temperature at the beginning and cooler at the close. Good progress was made in harvesting and drying fruits and conditions were favorable for all growing crops. Pears are of better quality than expected and the yield is fair. Peaches are yielding a fair crop, but are of inferior quality. Muscat grapes are ripening rapidly and are of good quality. Grapes in some sections were damaged by heat in July, but prospects continue good for a large crop. The almond crop will be light. White figs are being cured. Orange trees are in excellent condition. Grain harvesting and thrashing are nearly completed; the yield is below average. Hops are doing well and in some of the Yuba county yards the yield will be above average; picking will commence in the Wheatland district in about two weeks. The fourth crop of alfalfa is being harvested. Corn and beans are in good condition.

Coast and Bay Sections.

Clear, warm weather prevailed in the interior, and cooler weather, with frequent fogs, in the coast districts. Conditions were fairly favorable in all sections for fruit drying and maturing the later crops. Muscat grapes are ripe and picking is in progress. The outlook continues good for a large yield of grapes, which are reported excellent in quality. Apricots and prunes are yielding better crops than estimated and the quality is good. The peach crop is fair. Apples at Watsonville and Hollister are in excellent condition and a heavy crop is probable. Hops are making rapid growth at Pleasanton and Cloverdale and a fair crop will be harvested. Barley is yielding a very good crop and wheat in some sections is better than average. Hay baling is nearly completed. Corn, beans and potatoes are doing well.

San Joaquin Valley.

Clear and seasonably warm weather prevailed during the past week. Deciduous fruits are ripening rapidly, and shipments continue to Eastern markets. Cutting and drying fruit is making good progress; the crop of dried peaches will be larger than that of last year. Figs and watermelons are being shipped freely. The grape crop is very promising; large shipments of table varieties are being made and the raisin grapes have a large percentage of sugar. Olives will be a good crop. Oranges are making excellent progress. Large shipments of potatoes continue to the East and to southern California. Wheat is moving to the warehouses. The ditches are well supplied with water. Stock are healthy and in good condition.

Southern California.

Clear, warm weather continued in the interior, with high morning fogs in the coast districts, and conditions were quite favorable for all crops and farm work. Desert storms occurred along the eastern boundary of San Bernardino county, and a heavy rain caused washouts on the railroad near Needles. The season has been very favorable for beemen and the yield of honey will be large. Grapes are rapidly maturing and prospects are good for a heavy crop. Walnuts are improving, but are reported light in Ventura county. Apricots are nearly all gathered and disposed of; the yield was below average. Other deciduous fruits are ripening rather slowly. Citrus fruits are in good condition, but would be improved by warmer weather. Grain thrashing, hay baling and sugar beet harvesting are progressing. The barley crop is good and sugar beets are above average. Wheat is above average. Irrigation water is plentiful.

Eureka Summary.—Foggy along the coast throughout the week. Grass is green and vegetables are in good condition. Hay harvest is mostly finished; unusually heavy crop secured. The apple crop is about average, but in some localities almost a failure.

Los Angeles Summary.—Continued cloudy weather along the coast and fair in the interior. Water plenty. Favorable reports of next orange crop continue.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 16, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	02	75	.20	62	52
Red Bluff	.00	.00	.11	.03	98	58
Sacramento	.00	.00	.07	T	90	52
San Francisco	.00	T	.02	.02	64	50
Fresno	.00	.00	.00	.01	102	60
Independence	.00	00	T	.09	96	58
San Luis Obispo	.00	.03	T	02	78	50
Los Angeles	.00	.00	00	.03	86	58
San Diego	.00	.16	T	.06	76	62
Yuma	.00	T	.33	.34	106	72

HORTICULTURE.

The Subsoil Plow in the Orange Orchard.

Subsoiling in the orchard and opening the ground to the deep penetration of irrigation water has been both approved and condemned. The California Cultivator recently found Mr. B. B. Wuest of Alhambra, an earnest advocate of the free use of the subsoiler, and secured from him an outline of his experience. When Mr. Wuest bought the place the trees were three years old, and he maintained it under the original form of cultivation, running six furrows between rows at each irrigation, sometimes the water barely reaching the lower end of the row before having to be shut off and turned to the next row. After twelve years of such treatment the trees had become of little value as producers of first-class fruit, and the owner determined that something must be done to restore them, or else uproot them.

Began Subsoiling.—Getting some information regarding deep culture and believing it would be beneficial to the trees to tear off many of the surface feeding roots and loosen up the plow sole which had formed, he purchased one of the strongest and best made subsoiler plows and, putting four strong mules on, put it in 15 or 16 inches in depth, driving the mules as close as he could to the trees without injury to the limbs, and went from end to end of the orchard, snapping off large roots. This first subsoiling was done in the fall and was followed by a long rain, which was very fortunate. On being asked if the first effect of this subsoiling was not to set back the trees until they recovered from the shock of so many large roots being cut, Mr. Wuest remarked that, entirely contrary to that, from the very first the apparent effect on the trees was such as to indicate an immediate improvement. The following spring the trees set one of the largest crops in their history, and to-day a better looking orchard is hard to find.

Starting an Orchard.—One of the first questions that we asked was, "How would you handle a young orchard if you were to start in with trees from the nursery and carry it up to the same age as this one?" and he at once replied that he would first use the subsoiler, before planting, and continue its use before every irrigation. By that means he would keep the roots where he considered they would do the most good and keep the soil open to the admission of the air, so that the air would reach the lower levels, thus being valuable to the plant food there contained, and in a period of a very few years he would, he believed, have a magnificent property.

When to Subsoil.—As to the time of year for using the subsoiler, he answered, "At all times," but almost immediately qualified by saying, "Of course, in spring time, when setting fruit or growing the very young fruit, or after a rain, when the ground is very moist, common sense would dictate keeping out with such deep culture." But in the fall, when the ground is dry and the fruit is large enough not to be affected by the shock, and preceding each irrigation, he would use the subsoiler. Instead of running six furrows between the trees, he now runs two furrows, and he considers that those two furrows do vastly more good than the six formerly did. The work of preparing for the water is much greater than before, but the work of cultivation is much less than formerly, so that he considers that the question of economy does not enter into the discussion in considering the two methods of work.

How It Is Done.—In detail, his method now is to put on four good, stout mules or horses, put the subsoiler 15 or 18 inches deep, going two ways through the orchard on either side of each row. This makes a square around every tree in the orchard. The ordinary turning plow is now taken with two horses attached and one good, deep furrow laid as nearly as possible over the subsoiler furrow. As the water follows this furrow it naturally drops into the lowest depth of the line opened up by the subsoiler, and not only following down to the lower end of the row, but also breaks through sideways in the cross furrow made by the subsoiler. When the water reaches the bottom of the orchard, that the roots of the trees have received a thorough drenching goes without saying. Just as soon as it is possible to get on the ground afterwards, the smoother is passed over and the ditches filled so as to cover the moist soil with dry dirt. Later comes the deep cultivation which every orchard should have and more are getting now than formerly.

These irrigations are given every six weeks, though this year the trees have received but one up to the present time, and, though the day of our visit was quite warm, not a single leaf indicated any desire for water and the fruit was all of large size, indicating that it had never suffered for water.

After the irrigation season closes, when the ground has become somewhat dry and hard, then another subsoiling is given, more likely furrowing diagonally through the orchard, so as not to strike the same lines which have been followed during the summer irrigation.

Mr. Wuest's neighbors had little patience with his method of work, and one of them informed him that $1000 would not hire him to permit such tearing out of roots as he had given to his orchard. But surely it is the appearance of the orchard, which has never been fertilized excepting once with a light dressing of commercial fertilizer, and once with stable manure, that indicates that the trees are not now suffering from want of fertility in the soil.

Shavings Not Good.—Mr. Wuest said that if he were to fertilize, and had his choice, he would by all odds prefer the stable manure to the commercial fertilizer. But one warning he gave, and that was never to use manure from stables which bedded the animals with planer shavings, and to show the force of his remarks he asked us to walk across the orchard, where some especially heavy soil needed some "lightening" up. On that section he had placed a large quantity of planer shavings. He said that as a mulch it was magnificent, and as some worked into the soil it seemed to work up far better and hold moisture more perfectly; but, while it was four years since this was done, that plot of trees could be outlined perfectly by their yellow and unhealthy looking condition. He said that all other treatment since that manuring had been identically the same as with the rest of the orchard, and only those trees on which the shavings had been put showed the yellow cast and refused to bear large crops of fruit. Therefore, he concluded, the only solution of the problem was that the redwood shavings had that which an orange tree, at least, did not like.

Cover Crops in Southern California Orchards.

Mr. E. L. Koethen of Riverside condenses much experience and observation in the following paragraphs in the Fruit World:

The Seed.—The increase in the use of cover crops, not only in California, but throughout the country, has been so rapid that it will be a hard matter for the seed firms to keep the supply up to the demand, hence it is important that intending planters should place their orders as promptly as possible now, in order to avoid delays and disappointment at planting time. The question has frequently been asked if last year's seed is as good to plant as fresh seed, and our reply is, yes, providing it is free from weevils. An editorial in a contemporary of recent date gives the impression that only fresh seed should be planted. In the case of pea seed, needed for early September planting, this is an impossibility, as the new crop is not ready for shipment until much later than this date. In fact, it is doubtful if fresh-harvested seed will germinate as freely as well-cured and well-kept seed of the previous harvest.

The seed should be plump and uniform in color, if possible, and it is well to test their germinating quality before purchasing, if possible. To do this, a given number of seeds are counted out in a saucer and placed between woolen cloth and kept damp. Or they may be placed in moist sand and germinated in that way. The proportion of seed germinating will give the percentage of good seed.

What to Plant.—There is really but little choice as to variety to plant. The cowpea is practically out of the question, as it is a hot-weather plant, requiring warm nights, consequently must make its growth when water is scarce and expensive, and during the most active period of tree growth when the fertilizer and moisture available should be reserved for the trees.

The choice lies then between the Canadian field pea in its varieties and the hairy vetch. There are others that are under experimentation, such as fenugreek, lupines, etc., but thus far the above are the only plants in general use.

Of the Canadian peas there are two kinds on the market—the white and the green or blue. The white pea is excellent, but for some reason higher in price than the green, and yet not really superior for this purpose. We have had a large-seeded blue pea on the market here, which did not prove very satisfactory, but it was found that it was California grown, and hence lacking in germinating quality and not equal to northern-grown seed, in addition to the fact that it took more pounds to sow an acre than the smaller seed. We prefer the Canada pea to the vetch, as the roots are deeper seated than those of the vetch, and hence reach the subsoil better, and deposit the nitrogen and humus deeper, also leave the subsoil more porous.

The hairy vetch is an excellent plant, being easy to handle and yields about equal to the pea in point of green matter. It forms a heavy sod near the surface, covered with nodules of small size, but in great abundance. Where there is liable to be serious washing during winter rains, this is the best plant to sow, as it binds the soil better than the pea.

When to Plant.—This whole question of cover crops is yet so new that it is not safe to be too positive on all these points. Many of the present conclusions may yet be revised by later experience, and we have no doubt greatly improved methods may be evolved in the course of time. This applies to the choice of varieties to plant, as well as methods of application. Our past experience inclines us to the belief that the best period is about the last week in September. We sowed some near the first of September last year, and they had a hard time getting through the September hot spell. As we usually have a few days of extreme heat during the second and third weeks in September, it is perhaps just as well to avoid this time if possible, but we must gauge the sowing to the periods of irrigation. So we would say that it is best to sow immediately after the cultivation after the first of September. We would also suggest that this cultivation should be pushed ahead as quickly as possible after the ground is dry enough, so as to get the peas sown into a good moist soil bed

A National Horticultural Council.

To the Editor:—A committee which was appointed November 1st last at the World's Fair in St. Louis for the organization of a horticultural council consisted of the following persons: Professor Samuel B. Green, Professor L. H. Bailey, Professor L R. Taft, J. H. McFarland, H. C. Irish, J. H. Hale and J. C. Vaughan. They met, pursuant to call July 20, 1905, in Chicago.

There were present of the committee above named: Professor L. H. Bailey, Professor L. R. Taft, H. C. Irish and J. C. Vaughan. Also by invitation C. E. Bassett of the Michigan Horticultural Society, O. C. Simonds and M. Barker of Chicago.

Following a full discussion, the aim, scope and composition of the organization were adopted as follows:

Name.—National Council of Horticulture.

Objects.—To fraternize and concrete the horticultural interests of North America.

To consider the questions of public policy and administration which are so common to these organizations.

To act as a bureau of publicity in the interests of reliable information pertaining to horticulture in its broadest sense.

Composition.—The membership shall consist of two delegates elected or appointed by each National Horticultural Society, with nine delegates at large.

The Council shall elect an executive committee of nine persons, at least five of whom shall be delegates at large.

As a basis for the first permanent organization of the Council, the preliminary organization was retained and the following added to the committee, making the nine delegates at large as follows: Professor L. H. Bailey, Professor L. R. Taft, Professor E. J. Wickson, Professor W. T. Macoun, Professor Samuel B. Green, J. H. McFarland, H. C. Irish, J. H. Hale and W. W. Tracy.

Three of whom are to serve one year, three for two years and three for three years, or until their successors are elected by the Council.

J. C. Vaughan was retained as chairman pending the final organization, and H. C. Irish as secretary.

The first work outlined for the organization was to enlist the active co-operation of the leading national societies at their next annual meetings, or through the officers or executive committees. Messrs. Taft, Irish and Bassett were appointed a committee to attend the meeting of the American Pomological Society at Kansas City.

The meeting then adjourned subject to call of the chairman in October next, when it is hoped to meet with the American Civic Association at Cleveland, Ohio. H. C. Irish, Secretary.

Missouri Botanic Garden, St. Louis.

Preparing Fruits for Exhibition.

Mr. Oliver D. Schock of Pennsylvania gives the Orange Judd Farmer some suggestions which may be helpful to judges and exhibitors at the coming State and local fairs:

The exhibitor should study carefully the premium lists and note every class in which he can make entries and then get his entries ready. Every fruit and vegetable which is to go on the exhibition table should have the best possible opportunity for development. This will usually require thinning and sometimes a little pruning in order to give the fruits a chance to color. Every exhibitor must consider his exhibit from the judge's standpoint. While there are at present no authoritative standards, most expert judges have an outline they follow more or less closely. A general plan for all fruits established by the Massachusetts State Board of Agriculture is used in its present or slightly modified form by many judges. It is as follows: Quality, 20 points; form, 15 points; color, 10 points; size, 10 points; uniformity in size, 20 points; freedom from imperfections, 20 points; total for perfection, 100 points.

Nearly all points are considered from a commercial standpoint. The oversized fruit is not wanted by the markets and overgrown specimens are likely to be cut by the expert judge. Quality is a hard point to handle, especially with fruit not yet ripe, and in such cases is often disregarded or estimated by the form and general appearance of the specimens. In competitions of storage fruits, however, it is of special importance. Uniformity of specimens is a most important matter. Fair-sized fruits of even form and color of the proper type make good plates. They show to much better advantage than uneven speci-

mens. Freedom from blemishes should be insisted on. A fruit injured by an insect, disease or accident is not marketable and deserves a hard cut. Some judges disqualify such fruit from competition.

Automobiles Spread Fruit Pests.

Fruit growers, says the New York Fruit Trade Journal, now have a real grievance against the automobile. Aside from the fact that an occasional driver is run over, or upset by his horse taking fright at the machine, the charge is that gypsy and browntail moths and other fruit pests are carried about in clouds by the machines. In no other way, it is alleged, can the rapid spread of these pests, which until recently confined their depredations to small areas, be explained. It is said that a strong parallelism is found between the spread of these pests and the area covered by the automobiles ordinarily in use.

FRUIT MARKETING.

The Active Year in Fruit Shipping.

As we have noted from week to week, shipment of California fruits to Eastern markets has been this year notably active and profitable. Mr. George B. Katzenstein, manager of the Earl Fruit Co., gives the Sacramento Union some very interesting details of the season's progress.

The Situation.—I can say in a general way that it has been many a day since the market for California fruit has been so satisfactory. The sudden winking out of a promised bumper crop of fruit from Georgia, Maryland, Delaware and other peach producing States, which never materialized, had the effect of booming our own California products to very nearly, if not quite, the top notch on all tree fruits. We have practically had the Eastern markets to ourselves during the past fortnight.

Review of the Season.—As to the relative and comparative shipments, Mr. Katzenstein further remarked: "There was a lamentable shortage in the volume of cherries going out in the earlier part of the season, and now there is almost a relative shortage in that premier of all fruits for which California is noted—the Bartlett pear. But let nobody run away with the idea that because of these shortages there is a diminution of shipments, as some seem to assume, in comparison with last year, for instance. Can I give you some comparative figures? Yes, here for instance from our daily report sheet appears the following, showing the different varieties of fruit and the quantity shipped up to and including August 9 of each year named."

The figures collected by Mr. Katzenstein were as follows:

	1902.	1903.	1904	1905.
Cherries	244¾	211	208¾	78¼
Apricots	222	231¼	96½	272¼
Peaches	814	1,002¼	398¾	981
Plums	1,170	972	866	1,189¼
Pears	848¼	1,003¾	1,169½	453¼
Grapes	9¾	19½	71¾	11¾
Apples	29	13	8¼	12
Assorted	7¼	¼	1½	¼
Totals	3,345	3,453	2,821	2,998

Mr. Katzenstein continued: "The shortage in the shipments of grapes to date, as compared with last season, is more apparent than real and is attributable to the prevailing cool weather preceding the present warmer spell, which will largely accelerate shipments, with a promise of easily passing the total shipments of last year, which aggregated 1396 carloads.

Concerning Grapes.—"If early rains do not come to prevent, there should be shipped around 1800 carloads of grapes during the present season. The local grape crops of the East are none too promising, while our chief competitor from across the water, the Spanish or Almerias, will be shy nearly 500,000 barrels. Those grapes are shipped in cork dust in barrels about the size of an ordinary salt pork barrel. Last year Almeria supplied the United States with 1,900,000 barrels of grapes, which resemble our Malagas, being of the lighter colored varieties. Our best estimates for the present season reach only about 1,400,000 barrels. These are landed, for the larger part, in New York and Boston."

Eastern Auctions. — Referring again to the present condition of the Eastern auctions, he said he could simply add they are superb, and speaking for the Earl Fruit Co. exhibited these realizations in the leading markets on the 9th instant:

Boston, one car from Visalia	$1,980
Boston, one car from Suisun	1,525
New York, one car from Visalia	1,702
New York, one car from Suisun	1,615
Pittsburg, one car from Sacramento	1,529
Pittsburg, one car from Sacramento	1,457
Chicago, one car from Suisun	1,285
Chicago, one car from Lorenzo	1,219
Philadelphia, one car from Folsom	1,665
Baltimore, one car from Winters	1,389
Minneapolis, one car from Sacramento	1,080

Continuing, Mr. Katzenstein said: "These are our own sales, reported by wire, and show an average of nearly $1500 per car for eleven straight carloads of California fruits sold as above.

"The prices are keeping up. The very highest sale of the season, eclipsing all except our cherry sales of last spring, occurred August 5, in the sale of a car from Visalia which sold for $2197, for a twelve-ton load of mixed fruit—peaches, plums and grapes only—from the county seat of Tulare county.

Continuing Exports.—"We are also continuing our exports, being the only shippers in this section who are supplying with regularity the markets of Great Britain, a special export train leaving Sacramento every Tuesday under expedited orders. These shipments are confined to pears, plums and peaches, no grapes being shipped across the water because they are not a remunerative proposition over there, where the hot house article is obtainable every day in the year practically. We also ship these fruits by every outgoing Australian steamer every month, so that you see we are doing our share in the way of advertising California and its productivity.

Apples Around the World.—"Of apples I can say there is the promise of one of the best crops produced in the favored section of Watsonville and the Pajaro valley. This fruit we shall literally ship around the world in season, during the fall months, to Hawaii, Manila, China, Japan, the Australian Colonies and Europe, including Great Britain, Germany and other places."

Notable Sales of California Oranges in New York.

Sales of California oranges were very light in New York week before last, only fourteen cars having been disposed of, and there were no lemons. Prices there are advancing gradually. The New York Fruit Trade Journal says the record sale of the season took place on Thursday, when only two cars were sold, both by Brown & Seccomb. One car consisted of Valencias, the other Mediterranean Sweets, and both of these made record prices. The Valencias were of the celebrated "Old Mission" brand from Fullerton, shipped by C. C. Chapman and handled by P. Ruhlman & Co. in New York City. This car grossed $1900.13. There were only 75 boxes of fancy grade and they averaged $5.79 per box; choice (209 boxes) averaged $4.85 per box; standard (100 boxes) averaged $4.70 per box.

But this sale was nothing like so remarkable as that of the carload of Sweets ("Rialto Girl" brand) from San Bernardino county, sold by the same firm. This car of 396 boxes—all "Orchard Run" stock—averaged $3.85 per box, the gross price being $1522.70. Not only is this the record price for this variety of fruit, but it is about the latest date on which a carload of Sweets was ever sold there. The sale is all the more remarkable that the fruit was only "Orchard Run," and a great deal of it was puffy and distinctly below prime quality.

THE VETERINARIAN.

How to Treat Bloat.

Mr. O. J. Vine of Selma makes an interesting statement for Dairy and Produce Review on this important subject:

Bloat is a very common and dangerous disease among cattle, and, unless prompt relief is given, is apt to prove fatal very quickly. It is most liable to occur in spring when the cattle are first put on young alfalfa, when it is growing rapidly, and consequently very succulent. The most dangerous time is in the morning when the grass is wet with dew. Bloat is the effect of gas forming in the stomach, and attacks milch cows and stock cattle of all ages. Even calves when fed milk only have been known to have it. The most hearty feeders in the herd are most subject to it, as they gorge themselves quickly and fermentation takes place. Many stockmen aim to lessen the danger from bloat by feeding hay in the corral in the morning. After having eaten hay for an hour, the cattle are not so hungry and do not feed so ravenously. The grass is then dry before they get it, and the dry hay has a tendency to counteract the deleterious effects of the succulent pasture. When bloat occurs prompt remedial measures are necessary, or the animal will be lost. A bridle bit, or a stick, put in the mouth, with cords at each end to fasten it on, will often relieve mild cases, and be all that is needed. If the animal belches freely the gas readily escapes. If no relief is noticed within a few minutes, drench with a quart of water in which a handful of salt and two tablespoonfuls of common baking soda have been dissolved. This will usually relieve and prevent the further accumulation of gas. To move the animal about slowly is beneficial. A probang—which can be a piece of ¾-inch rubber hose 5 or 6 feet long—can be carefully put down the gullet into the stomach affording a passageway for the gas to escape and relief follows at once. Or the probang can be first put into the stomach and the salt and soda drench given also—in fact poured right down through the hose.

A very good and safe remedy, if properly done, is to tap or puncture the animal about 3 inches from the hip and the same distance from the loin. In the absence of anything better, a pocket knife can be used in making the incision. A sharp pointed blade ½ inch wide can be used. Every stockman, even though he keeps only a few head of cattle, should have a trocar and cannula for use in such cases. The trocar is simply a sharp pointed instrument enclosed in a tube or cannula. These are both thrust through the skin into the paunch, the trocar removed leaving the tube in the insertion to keep it from closing. With nothing left in the opening, it is liable to be closed by the contents of the stomach escaping with the gas. Even after the trocar has been used, I have found it necessary to give the salt and soda drench, and in some cases the dose had to be repeated before all danger was past. The trocar and probang should be constantly on hand, and where they can be found at a moment's notice.

The cost of both need not exceed $3 or $4, and will often save more than ten times their cost in a single case. Sometimes a bloated animal is not found until nearly dead, and something must be done very quickly. One does not have time to get to the neighbors or to town for the necessary instruments. The probang is equally useful in cases where an animal is choked. The obstruction can be pushed down into the stomach with it, promptly relieving the animal without danger.

Answers to Queries.

By E. J. Creely, D. V. S., Dean of San Francisco Veterinary College.

TO IMPROVE HIS APPETITE.

To the Editor:—I have a horse 13 years old that seems to be in perfect health, but does not eat enough so he can stand work. I have tried all kinds of feed, and have had his teeth examined by a veterinarian who says they are all right. What is your advice?—Reader, Santa Paula.

Give one ounce daily of Fowler's solution of arsenic in the feed and report in two weeks.

THE DAIRY.

Siloed Corn and Fresh Sorghum.

From an address by Mrs. M. E. Sherman of Fresno at the University Farmers' Institute in Southern California.

Good corn ensilage should be amber colored, and the greener feeds a little darker. It should smell like malt extract, and be sweet and slightly sticky. The corn on the rings of cobs tastes like corn fresh from the can, and with a little salt is quite palatable to the taste. In the tonnage produced by the different varieties of corn the difference is marked, and makes it difficult to estimate the actual cost of the ensilage. There are four varieties of corn grown from seed purchased in Chicago, which give us much better results than the corn seed purchased in California. These are "Reed Yellow" and "Legal Tender" for July sowing, with either "Early Yellow Rose," or "Mortgage Lifter" for April sowing. With these corns we gain nearly a quarter more leafage and more tender, succulent stalks than with the common varieties.

Growing Corn.—We usually sow corn on the land that has furnished a hay crop and then been irrigated and plowed for corn which is planted in June, or as late as the Fourth of July. The corn is irrigated twice and cultivated enough to keep the weeds down. By the last of September it is ready for the silo. Three months from sowing, it is in the dough stage, so by sowing in succession, leaving ten days between, the entire crop can be put into the silos in exactly perfect condition.

Difference in Varieties.—The government, recognizing the great value of the corn plant, and that it was often sown from inferior seed at a loss to the producer, has taken up the study and pedigree of the corn family, and has already found how great is the difference in the productiveness between seeds of the same variety from a careful grower and that of the ordinary commercial article. The experiments have also shown the food values to differ somewhat. Some grains with more than the usual amount of hard outsides or cuticle were richer in protein; that having large grains gave a greater amount of corn oil, while the starchy center which carries the carbo-hydrates varied even more than the size of the grains would indicate. The size and shape of the grains, their weight in proportion to the size of the cob, and the way the grains filled out the seeds, sometimes made one corn crop double the value of another—grown with the same amount of labor and expense. While there have been pioneers in this field, as yet the varieties or types have not been fixed long enough to be called families or races.

The Crop.—With good seed, we count on twenty to twenty-five acres planted to corn, filling the 318-ton silo. This is allowing also for careless irrigation and scalding. This acreage often furnishes more than the silo will hold, and we cure the surplus for fodder for the colts and stock cattle. The colts like it, and it seems to give them something they need of a woody nature, for they do not eat the fences so badly while the corn fodder lasts.

Sugar-beet pulp is often compared with corn ensilage and is nearly as good for milk making. How-

ever, as it is not practical to move the dairy cows to the sugar factory, use of the pulp for feed must be left to the raisers of beef cattle.

The flint varieties of corn have nothing to recommend them for the silo, as they produce less leaves and stalks than the dent varieties, and are harder and tougher.

In ten years the number of silos in the United States has doubled and the average production of the cows has kept pace. The annual production of milk per cow has increased from 1400 to 2600 pounds. This is nearly doubling the production or equal to adding that many more cows.

The gain in making the corn into ensilage is in the fact that the cows receive it when at its best, neither too old and tough, nor when immature and green, but when it is best for succulency, palatability and food value.

Other Silo Plants.—Lately, the peas and oats we used to grow for silage have been dropped from the ranch crops and the lands put into alfalfa, the first and last cuttings each season going into the silos, and the three or four summer cuttings made into hay. The first crop of alfalfa is full of fox-tail and bronco grass. To it are also added the grass clipped from the borders of driveways. When young and fresh, there is hardly a richer milk-making grass in California than the hated fox-tail. In the silo the fox-tail and bronco grasses are made tender and the vitality of their seed destroyed. It is a cheaper way to clean hay than discing the alfalfa fields, particularly for the vineyardist, for at the time of the year the alfalfa needs discing every man and horse is wanted in the vineyards and orchards. As a matter of expense, it was therefore cheaper for us to silo the first crop than to disc the land, and grow alfalfa than to grow peas and oats.

To Clean Land.—On land foul with weeds, peas and oats for a winter cover and corn as a cultivated crop during the summer will in a few seasons discourage the undesirable growths—even Johnson grass and morning glory suffer under this double cropping. If the few spots that survive are marked with a stake and later cut off with a sharp hoe they seldom appear again, and the land is ready to be made into vineyard.

While corn ensilage in dry weather has a food value one-third as great as hay, yet to gain a greater milk flow we do not have to feed double the amount, for while 28 pounds of alfalfa hay with 8 pounds of straw is a ration, 35 pounds of corn ensilage with 8 pounds of alfalfa hay is a much better one for milk making.

Feeding Value of Silage.—Ensilage has as great succulency as green grass and produces a relatively greater flow of milk. It also agrees well with the cows. While the cows are eating the hay and straw ration, they are needing doses of salt and ginger almost daily. Every dose of these depleting medicines is wasting the food of several days' rations, so that at the end of the month, the loss of milk, the price of the salts and the time taken to give the dose, will use the product of one or more cows to compensate.

Ensilage is as near to preserving the natural food for the cows as we can make it; therefore they are healthier and thrive better than on the drier products of hay and grain. To their physical economy it is about the same as canned vegetables and fruits have proven to be to the human family. The matter of ensilage feeding has been discussed fully in the various dairy associations, and the conclusion has been reached that a well fed herd of cows will increase their productiveness from one-third to one-half, when ensilage is made part of the winter rations.

The entire waste of food in a well filled silo should be only the 4 or 5 inches of mould that seals the top. It keeps well—so well that we have had 10 feet of new ensilage on top, a few feet of two year old, a layer of three year old and in the bottom of the silo the ensilage was four years old. The cows ate it all with as good relish as the fresh, and it seemed sweet and good to us. With us, ensilage has solved the problem of keeping cows on a limited amount of land.

Fresh Sorghum.—Another soiling crop not half appreciated in California is sorghum. It can be planted at any time there is a lull in the spring or summer work. As soon as it makes a second joint, it can be cut for green food, and will at once sprout out again; so a limited patch will supply a large amount of green food. It seems to lengthen out the summer feed and fills the time when the pastures have lost their freshness and the winter rains have not yet started the natural grasses. It serves, before we begin with the silage, to give a variety to the sows' food and stimulates appetite

Sorghum grows readily over a wide range of soils and stands heat and drought. Its adaptability to California is indicated by its natural habitat, coming from the arid countries of Africa and Asia, where the grain is used for the human family, while the dried leaves and stalks are fed to cattle. There are nearly as many varieties of sorghum as there are of Indian corn, but as they have been introduced from different countries under foreign names, they are usually not called sorghum. The two families are the saccharine and the non-saccharine. The improved saccharine varieties are apt to have smaller leaf growth, and are therefore not so valuable for soiling as the older Chinese variety introduced into this country in 1855. This is the parent variety of the Early Amber and has proven to be the best with us.

The Kaffir corn, a non-saccharine sorghum, has much to recommend it, though it sprouts less readily after cutting, and on sub-irrigated ground grows so rank that it falls over and has to be cut by hand; though on very dry, sandy land, it will produce more grain than from the Early Amber or Egyptian corn.

Growing Sorghum.—The land intended for the sorghum should receive a plentiful irrigation and be well plowed and harrowed. The seed is drilled in rows, using about 35 pounds of seed to the acre. The harrow is run over the field when the sprouts begin to show. Usually two harrowings suffice, though the Early Amber sorghum roots deeply before it makes much top growth. The harrow should be used until the ground is shaded for there is little danger of sunburn even if the land is hard and runs together, though the best crops are raised on the more sandy soils. Sorghum will grow and mature on land having too much alkali for common corn, though of course the light loamy and white ash soils give the greatest tonnage.

Sorghum Hay.—When the plant comes into blossom, it is at its best for feeding and can be cut for green feeding or cured into hay. If it is used for hay, we find it has to be hauled off the land on which it is grown for lack of room to cure it. After lying on the ground twenty-four hours it is raked into piles about 6 feet square. In two or three days it will have sweated and heated and is then spread out again, and when cured—but not dried until brittle—it can be stacked without fear of spoiling.

Sorghum also makes a good sandwich by putting a foot of the green new-cut sorghum between 6-inch layers of straw.

Stack Curing.—The third way of preserving it for winter feeding has been our practice. We cut when the seed is in the dough stage of ripening, hauling it to the place from which we intend to feed it. It is stacked, using the derrick fork and keeping the stack tall rather than broad and low, so that when completed it will be two or three times as high as it is broad. It is tramped on the outer edges and gradually brought to a pointed or ridged top. The regular 16-foot panels of shake roofing used on the hay stacks are placed on it, and old iron—parts of headers from the junk pile—put on the boards to keep them firmly pressed into place. The top of the stack may have a few loads of alfalfa hay put on top if it is not level enough to hold the roofing close to the sorghum. It cures well in this manner, remaining moist and succulent inside the stack and drying into hay on the outside. In using it for hay it is cut from one end, using a hay knife. It is valuable for winter feeding of the yearling heifers and colts on pasture as well as for the cows.

The sorghum field having been cut now has the furrows plowed out between every row, and if well irrigated and harrowed, sprouts up again. If it was sown early enough, a second cutting may be had for hay, though usually after making one cutting, we cut it out every day and feed it out as a soiling crop.

Following Sorghum.—The sorghum has small roots and the frost cuts it down promptly, and the land is ready to grow barley or wheat as soon as it rains; while Egyptian and Kaffir corn land requires labor to clean—the roots having to be thrown out with a plow and raked up as they never seem to rot, and will seriously interfere with the mowing of the next year's crop of hay if not taken out of the way. We have had them three years piled up before they were dried out enough to burn.

When we plant sorghum in April we can harvest three crops. The first cutting usually yields about five tons to the acre, the second about seven and the third cutting a little lighter; so fifteen tons of sorghum to the acre is a fair crop.

Care in Feeding.—Sorghum must be fed in limited quantities until the cattle grow accustomed to it; otherwise it may cause bloating. It is never safe to use as pasture, for when the stock help themselves they can fill up too quickly. The necessity of beginning with small feeds applies to all the forms of sorghum, whether it is hay, sandwich, or from ensilage stock. Even after they have been eating freely for some time it is well to spread it from the wagon over considerable ground, so the animals have to pick it up in limited mouthfuls. As the amber cane contains a high per cent of carbo-hydrates, it feeds well with alfalfa hay. If that from the ensilage stack is used, fifteen pounds of alfalfa hay with all the sorghum the cows will eat up clean will give a good yield of milk. If the cows leave the hay, reduce the sorghum until they eat their hay up clean, or they may scour badly and go off their feed.

In our experience with sorghum so far, we have not had any cattle poisoned by it; yet at times it, as well as Kaffir corn, is very deadly to cattle. Dr. Haddon, of the Colorado station, found 1% of prussic acid in the leaves of Kaffir corn from a field where cattle had died; while Mr. Slade, of the Nebraska station, found in a sample sent him from a field of sorghum that had proven to be poisonous, .014% of the entire weight of the sample to be prussic acid. As the leaves contain most of the poison, the cattle in a field, by rejecting the stems, would receive a greater proportion than the analysis of the plant shows to be present. In case of poisoning not immediately fatal, the remedy is a quart of molasses or a couple of gallons of milk or butter-milk.

The Mystery.—Why sorghum should be wholesome most of the time, yet occasionally should form one of the quickest and most deadly of poisons, has not been discovered. Dryness, second crop, excessive moisture, shade, too hot sun, over cultivation, lack of cultivation—have been suggested, but careful investigation and experiments have shown fields of sorghum perfectly wholesome under these conditions, and that the fields that were fatal to cattle had the same cultural and physical conditions as the healthful ones. So while we know what the poison is, the cause for the present must be assigned to the total perversity of inanimate things.

While sorghum is not as valuable as corn, it has a place that would be hard to fill as cheaply with any other feed. The grain alone is worth in feeding value 10% less than corn, though the whole plant has a little greater digestibility than the entire corn plant. Sorghum and corn both need balancing with protein. That, alfalfa furnishes us very cheaply. We can also find it in bran—at a higher price, however. Corn has had its poet, when Longfellow sang of its beauty, while alfalfa has only had the cattle men to prosaically say "It's good." Yet nature's bees and birds hum and sing of the alfalfa fields and the cows draw in deeply of its cool, soft air, full of the sweetness of the alfalfa bloom. So alfalfa receives the homage due to the king of all dairy foods produced on the farm.

Individual Cow Records and How to Make Them.

Prof. H. H. Dean of Guelph, Ontario, gives a new exhortation on an old subject. He says:

I hold that the dairyman who wishes to make a success of dairying needs to know what his individual cows can do, and especially the man who breeds pure dairy stock ought to be able to give a person who comes to buy young stock from him something as to the capacity of the dam and granddam. It is not sufficient that those animals should be perfect in form and color, and have all the fancy points, which, although they may be valuable enough in their way, are insignificant when you come to compare them with the actual producing capacity of the animal. Hence, I think the time has come when our dairymen, and especially our breeders, should give more attention to the individual records of their cows.

I purpose to deal more particularly with how the records may be made. There is a marked difference in the individual production of different cows. I hold that especially the breeder of pure bred dairy stock does not sufficiently realize the importance of this, and that our dairymen should move along that line. It is not something that is impossible. I speak from practical experience, having kept an actual record of each cow in our herd for nearly thirteen years. The man who is going to undertake this work should try to make it as simple as possible. First, I should say that each cow must have a name or number; in our case we use a number, which we place in the animal's ear. In a large herd it is difficult to find names, so we adopted the number plan, which I think is much better. Next you must have pails of uniform weight. That can be done by putting a little solder on the bottom where they require it. Third, you must have scales. Our scales give the net weight of the milk directly the pail is hung upon them.

In keeping the record of the milk, we use a ruled sheet with a split column in which to record the morning and evening milking. We place the cow's number at the head of the column devoted to that animal. These sheets we keep in a frame, with a movable glass to protect the sheet from dirt.

It is not sufficient to weigh the milk; you must know what the cow is testing in fat; therefore, we keep a bottle in which to place samples taken from the milk. Each bottle is labelled with the number of the cow, and the label covered with shellac varnish for protection. Each milker has his own row of bottles corresponding with the cows he milks. After the milk has been weighed, he pours a tiny dipper full into the bottle belonging to that cow. In each bottle we place a preservative consisting of potassium bicarbonate and corrosive sublimate, which will keep the milk perfectly fresh for a month. The test for the fat is made once a month.

I do not know that any part of our work has enabled us to improve the record of our cows, by culling out the poor ones, so effectually as this system.

As the slips become torn or are lost it is necessary to have a permanent record. Once a month, therefore, the record of each cow is transferred into a book, one page of which holds the record of a cow for a year. There is a special column on this page for remarks, in which any important facts regarding the animal are noted down; so that if you ask me about any cow in our herd, I simply have to turn to the index and look her up. I do not think the dairymen realize what value there is in keeping a record of the performance of individual cows or more of them would do it, and I think perhaps our dairymen's associations ought to do something to assist men who are willing to take up this work. I would suggest that these associations should furnish suitable scales and the necessary apparatus to men who wish to keep records.

Agricultural Review.

Butte.

LATE BLOOMING APPLE TREES.—Record, Aug. 11: A strange phenomenon appears at the orchard of George House on Rock creek, 10 miles north of Chico. This piece is in peaches and apples, and this year promised to bear a very heavy crop, but the grasshoppers came from the adjacent gravel hills and wreaked destruction, cutting their way across one portion of the farm and completely stripping off every leaf and peach, leaving nothing but the pits and the bare trees entirely devoid of leaves. In another portion of the orchard they attacked the apple trees, cutting off the upper leaves and destroying the fruit. These apple trees, which are very old, however, instead of lying dormant for the season, have evidently taken on new life and several of them are once more in full bloom, with new leaves also making their appearance. This blooming is not of desultory character, but with the limbs covered by the snowy blossoms nearly as thick as in the early spring, and making a strong contrast against the blackened and verdureless peach trees.

POOR WHEAT CROP.—Chico special to Sacramento Bee, Aug. 9: The wheat crop over Butte is very scant and the grain small and shriveled. As a result the farmers are casting about for suitable seed wheat from some section better favored. With a view to assisting the grain growers in this respect, W. H. Miller, manager of the Sperry mill at this place, has secured samples from Oregon and Washington which has proved so satisfactory that a large order has been placed to be delivered next month, from which farmers can secure sufficient to seed their ranches.

Humboldt.

PRUNES AND APPLES.—Arcata Union, Aug. 12: The Vance orchard on Lindsay creek is probably the second largest orchard in Humboldt county, and Foreman Fred Crawford is certainly a busy man at this season of the year. Just now the prune crop is being cared for. At the dry house a large furnace is being used to preserve prunes, which were being bottled in half gallon jars. Sam Touley and wife are handling the fruit, Mr. Touley doing the harvesting with several assistants, while his wife attends to the canning process. Seven hundred gallons had been bottled up to Thursday and about 500 gallons were still to be put up. This fruit is all for the use of the cookhouses of the Vance Redwood Lumber Co. during the winter months. The various camps are now using 1500 pounds of fresh prunes each week, and there are still a good many tons on the trees. The apple crop at this locality has been almost a failure this season, owing to the frosts early in May, which were accompanied by killing cold northwest winds. By comparison it might be stated that Mr. Crawford estimates the apple yield this season to be about 1000 boxes, while last season he handled from the same trees 8000 boxes.

DAMAGE BEET CROP BY CUTWORMS.—San Francisco Call, Aug. 15: A dangerous and what is likely to prove a costly crop pest has made its appearance in the rich farming lands throughout the Arcata bottom section, 12 miles north of Eureka. Thousands of cutworms are devouring the beet crop. The County Horticultural Commissioners held a meeting to discuss ways and means to stamp out the pest. The board was unable to give financial aid, but recommended several methods of extermination, which will be applied without delay. It was reported to the board that hardly a ranch in the Arcata section is free from the pest.

Los Angeles.

BEET FACTORY OPENING. — Pomona Progress, Aug. 10: Manager Schroeder at the sugar factory has announced that the sugar making campaign will open August 21st. Harvest will commence the 14th and hauling on the 15th. Most of the first beets will come from Wintersburg and Newlands. Some will come from Compton and Chino. The continued cool and foggy weather has not been favorable to ripening, and for that reason the opening of the campaign has been delayed a week longer than was expected. The tests being made daily now, however, show a very satisfactory sugar content in the beets, running from 15% to 17%. The factory is considered to be entirely ready now for the reception of beets. The installation of new machinery in the Steffens building is completed, and the steam is up in the big boilers, and this week all the machinery throughout the factory is being given its final test to see that each piece works to a nicety.

Monterey.

PAJARO FRUIT.—Pajaronian, Aug. 10: Blackberries are coming in in Pajaro valley in large quantities, but prices are very low. The Simpson & Hack Fruit Co. will send out a carload of Gravenstein apples to-night. The apple crop of Pajaro valley was never more promising than it is at the present time. Indications point to a crop of excellent quality fruit. M. N. Lettunich says that there is going to be an immense crop of apples on the Del Monte Fruit Farm this fall and that the fruit is free from worms. Apricots ripened in Pajaro valley so rapidly this summer that there was considerable loss in over-ripe fruit, but in the aggregate the crop harvested was the largest in the history of the valley. The strawberry output in Pajaro valley at present is light. In fact, the crop this year has been much smaller than for years past, but prices throughout the season have averaged better than usual.

HORSE BEANS.—Pajaronian, Aug. 10: For the three weeks last past horse bean harvesting has been in progress in Pajaro valley, and the crop, while not up to expectations in point of yield, is fairly good and commands good prices. There are about 750 acres of this variety of bean in this valley this season and the bulk of the crop has already been contracted at prices ranging from $1.40 to $1.75 per 100 pounds. The principal buyers of horse beans in this valley are James Sheehy, Peckham & Peckham, L. P. Lauritzen and Geo. W. Sill. The foggy weather recently has materially interfered with the threshing of the beans, thus making the harvest late. The yield per acre varies according to locality and soil, the range being from one-half to three tons per acre. The raising of horse beans promises to develop into an important industry in Pajaro valley, where they grow to perfection in both size and quality. The soil and climate seem to be peculiarly adapted to their successful cultivation. There is a demand for these beans as a flavoring extract for fine coffee.

Nevada.

FIRST PEARS.—Grass Valley Union, Aug. 12: The orchard of A. D. Sutton, near Glenbrook Park, has the distinction of furnishing the first shipment of the year. A picking and packing crew was put at work yesterday, and will be kept busy for the remainder of the season at various orchards. The Sutton orchard is unusually heavily laden, due in a great measure to the care given it, and the fruit is of the finest quality. It is estimated that the first shipment from the Sutton place will total up about 600 boxes. Several pickings will be made as the fruit ripens sufficiently for shipping, and before the season ends it is estimated that fully 1800 boxes will have been sent out from that orchard alone.

Orange.

SAN JOAQUIN BEANS.—Santa Ana Blade, Aug. 11: George W. Angle has begun the harvest of the first beans on the San Joaquin ranch for this season. He has 240 acres and the crop will be unusually large and of excellent quality. The yield is estimated at from fifteen to twenty sacks per acre. Other ranchers will commence work harvesting in the course of ten days. The total acreage of beans on the San Joaquin is greater this year than ever before, between 5500 and 6000 acres having been planted. The early sown beans will give a good yield, but it is somewhat problematical as to the crop from the later ones. The hot weather which is now setting in may have a bad effect on those that are not already almost matured.

Placer.

TO ERADICATE WEEDS.—Placer Herald, Aug. 12: Horticultural Commissioner W. J. McCann was before the Supervisors Monday with reference to Russian and Scotch thistles, which have been allowed to spread over many of the lands of this county. The local board of horticultural commissioners will make an inspection of all the Placer county ranches, and insist on the destruction of these weeds, which are very detrimental to agricultural interests. Johnson grass is another pest which has gained considerable headway and this is said to be a menace to the orchards where it grows more abundantly.

Sacramento.

GRAPE CROP NOT BADLY INJURED BY HEAT.—Dispatch to Sacramento Union, Aug. 11: The grape crop around Bruceville was not damaged by the heat early in July to such an alarming extent as was first thought. Some prominent grape growers claim that while some varieties were more or less injured, the Tokay suffered less than any other variety, claiming that the occasional burned grapes fell off, and this gives the remainder ample room to grow. The packing will doubtless be more difficult, owing to the amount of culling necessary for a good pack. The best packed grapes always command the best prices in the East. It will be several days before the grapes will be ready for shipment.

HOP PICKING.—Sacramento Bee, Aug. 9: Hop picking will be commenced in the fields of Harry Fraser, on the Menke ranch, in the Perkins or American River district, next week. Charles and John Merkley, who have their large hop fields up the river in Yolo county, expect to begin picking hops about the 20th inst. It is expected that it will be nearly one month before picking begins in the fields along the Cosumnes river. A local grower of hops said to-day there was plenty of help to be had this year. Some growers, he said, had made contracts with Japanese and Chinese to gather their crops at the rate of 80 cents per 100 pounds. Some growers have made the announcement that they will not employ either Japanese or Chinese. White pickers this year will be paid from 85 to 90 cents per 100 pounds. Indians will be employed as pickers in the fields of B. W. Cavanaugh, down the Riverside road, and in the fields of William Leeman, up the river, in Yolo county.

San Bernardino.

BIG ORANGE CROP.—Sun, Aug. 11: The present outlook for the orange crop at Highland this year indicates that the fruit will be either three or four weeks earlier in ripening or exceptionally large in size, for oranges on the trees now are larger than they usually are by September. Cause for this is accredited by orange growers to a plentiful supply of rain this season. The 25 inches and over gave the ground a good soaking, reaching the tap roots, as they have not been for many years. This, with the fact that there was exceptionally fine weather all through the spring, has made the fruit grow more rapidly. The highest price paid this season for water was 25 cents per inch per run. Since that time the average price has been 20 cents per inch. The irrigating season is about over now, so that there is no likelihood of water going higher. The different sources of supply are holding out well, City creek having some 75 inches now, while the Highland Well Co. has done but little pumping, and the 45 and some odd feet at the Bear Valley dam was not drawn on until three weeks ago, and then lightly. Last year the water went up to 75 cents per inch. The year before $1 was a popular price, and it was but a few years ago when irrigators were glad to get water at $5 per inch, and when a man has to use 50 inches every fifteen days for twenty-four hours, it is a great burden, and a reduction to 25 cents per inch means many dollars in the pockets of the growers.

San Joaquin.

FLAX.—Lodi Sentinel, Aug. 10: There was a large attendance at the meeting of men interested in the culture of flax in San Joaquin county Thursday evening in the offices of Budd & Thompson in Stockton. It was decided to incorporate and to take steps to induce the farmers to raise flax. A large factory will soon be built for drawing and milling flax. Dr. Justin K. Toles, the expert who has conducted the experiments in flax culture which have been carried on in this county within the past two years, submitted a very interesting report. He stated that experiments had been made in adobe, sand, peat and sediment, but that the flax turned out well in all classes of soil. The island fogs, he stated, assisted in producing a very fine flax. For fiber flax the company will pay the grower $15 to $25 per ton. For paper stock, or for all straw cut with reaper and binder, $10 per ton. Fifteen dollars per ton should bring a gross profit of $60 per acre. Deducting the cost, $21, there is left $39 net profit. For paper stock, say three tons per acre, at $10 per ton, or $30, less $10 per acre cost leaves $20 profit.

Sonoma.

PRUNE DRYING.—Santa Rosa Press-Democrat, Aug. 12: The M. L. McDonald, Jr. Fruit Co. of Santa Rosa is handling prunes and the great drying yards are rapidly filling up with trays of fruit. The establishment has a working capacity of seventy-five tons a day, but the supply is not sufficiently large yet to keep it working to more than two-thirds capacity. The prune crop this year is not as heavy as last year, according to reports, but the fruit generally is larger, although some of it is split. The buyers here are paying from $20 to $25 per ton for green fruit. Some fruit has been purchased at a lower figure, but not in any quantity. The Merritt Fruit Co. is busy and in the drying yards an immense quantity of fruit is being handled. The drying yards generally throughout the county are busy.

Stanislaus.

ELECTRIC TREATMENT FOR GRASSHOPPERS.—West Side Index: The result of the meeting of farmers and dairymen from the New Era section to consider the proposition of the Newman Light & Power Co. to run wires to that section for light and power, and incidentally solve the hopper question, together with interviews since between Mr. McDonald of the company and the farmers interested, have been so successful that it has been decided to hold another meeting at the Canal school house to endeavor to complete the arrangements. The current can be applied to various uses, not only electric lights, and power for any purposes, such as running separators, pumps and other farm machinery, or irrigating small tracts, either entirely by pumping or as an auxiliary to the canal supply, and will also be sure death to the hoppers. The efficacy of this plan of disposing of the pests is proved beyond doubt. It is claimed that the insects are attracted by the lights for a great distance, and that a single arc light will gather them from a large field. In a test in town, where the hoppers were not noticeable before, a pan 4x8 feet and several inches deep was filled in an hour and a half, besides thousands dropping outside the pan.

WATERMELONS. — Modesto Herald, Aug. 10: Professor Martin of Modesto up to and including Wednesday had shipped from leased land near Turlock twenty-three cars of melons, each carrying from 1400 to 1500. The average weight of the melons ranges as high as twenty to twenty-two pounds. Ten carloads are being shipped daily and the demand is very strong. The melons are grown on sub-irrigated land near Turlock. Mr. Martin expects to ship a total of sixty carloads. From a little over three acres he picked one day this week, in one picking—and that the second—4500 melons.

HARVESTER BURNED.—Modesto Herald, Aug. 10: Eugene McCabe's combined harvester was destroyed by fire shortly before midnight Saturday, the machine being at the William Broyles ranch, 9 miles west of Modesto at the time. The harvester crew had been cutting grain on the Broyles ranch all day, and had but a few acres to cut. Shortly after 11 o'clock the big machine was discovered to be on fire, but there was no way to extinguish the flames and the entire outfit was consumed. A hot box probably started dust and grease in the machine to smouldering in the evening, the flames breaking out after the crew had left the machine. The loss is about $800, with insurance for $400.

Sutter

WHEAT AT EXPERIMENT FARM.—Sutter Independent, Aug. 10: Prof. L. A. Fitz, who conducted the Government experiment farm on the Walton tract, has finished his work of harvesting and threshing and left here Sunday for Modesto en route to Kansas. Before leaving, he saw that all the samples of grain he had raised had been properly sacked and stored ready for next season's planting. A small tract on Mrs. W. J. Gray's farm has been secured for next season's experiments. While this has been an off season for grain and considerable trouble was experienced with the mustard and other weeds at the experimental farm, still good results have been obtained and some extra fine samples of wheat, barley and corn harvested successfully. The objects of the farm were to experiment with new varieties of grain to see whether they would be adapted to the soil and climate of this valley and the seed planted was mostly of a high gluten test for milling purposes. While several hundred varieties were planted, all did not develop well, but a large number did and good samples have been secured. The varieties of red winter wheat show excellent points as to gluten and other choice qualities as well as hardness to withstand drought, winds, etc., and these will be further tested next season. When they come up to the required tests the best varieties will be distributed to the farmers for seed, and by this method some new and extra choice milling wheat will replace the old varieties which have about run out in this section.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from **Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING.** *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price **$1.50** per bottle. Sold by druggists, or sent by express, **charges paid,** with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

Gaffer Time.

Oh, who has seen gray Gaffer Time
Along this broad highway pass by?
Will no one speak, will no one say,
Of all this noble company?

Youth, have you seen gray Gaffer Time?
"Nay," answered gay-heart Youth,
"not I!
Though I be fleet, he tops the hill,
And speeds afar ere I draw nigh."

Age, hast thou seen gray Gaffer Time?
"Nay," halting Age replied; "not I!
Though I have laid him many a snare,
He slips through every mesh I try."

Joy, hast thou seen gray Gaffer Time?
"Nay," answered smiling Joy; "not I!
Why should I care to look for one
Who makes a mockery of my cry?"

Sorrow, hast thou seen Gaffer Time?
"Nay," glooming Sorrow quoth; "not I!
Still he evades my questing step,
Albeit our paths together lie."

Love, hast thou seen gray Gaffer Time?
"Nay," white-browed Love replied;
"not I!
Though I have begged him show his face,
Yet he vouchsafes me no reply."

Death, hast thou seen gray Gaffer Time?
"Nay," answered quiet Death; "not I!
Why should I tryst with such as he,
Who is of those that do not die?"

Then none has seen gray Gaffer Time
Of all so wise a company;
And I who seek him up and down,
Alas! alas! what chance have I?

—Clinton Scollard.

On the State Line.

This happened long ago, as time is reckoned in the Far West, at a point where stands the busy little city of Newport.

"Reckless" Burk and Sheriff Simeon Wells met one day under somewhat extraordinary circumstances—their first meeting since the days of their boyhood. They sat at opposite ends of a hugh pine log and glared at each other. The agitation of their lungs, due to violent exercise, prevented immediate conversation. Their mouths were gasping dry. For possibly five minutes the silence was unbroken save by their labored breathing, the sobbing of the wind through the trees and the roaring of the Pend d' Oreille falling over the great rocks half a mile away. Then Burk, a triumphant grin upon his sweat-stained face, huskily said:

"I reckon this race is temporarily finished, ain't it?"

"I reckon it is—temporarily," growled the sheriff He growled other things also, but they are unprintable.

Burk rose to his feet, inflating his chest. He knew something that the sheriff did not know, which was that the chambers of his six-shooter were empty, and he deemed it expedient to increase the distance between the officer and himself, lest certain complications ensue.

"That water yonder," jerking his hand toward the river, "sounds pretty drinkable," he said, tentatively.

The officer nodded, involuntarily moistening his lips with his tongue.

"No objections, I suppose, to my going down there?" continued Burk, half turning.

"No, but I reckon I will go with you."

Burk was disappointed. He had cherished momentarily a hope that the officer would go elsewhere to drink. There was a spring on the Washington side of the line, not further away than the river on the Idaho side. He felt itchingly that the officer displayed bad judgment in not going to the spring; but he said only, "Come on then," and never so far in advance that he could not see the officer, led the way to the river.

Presently they were scrambling down the bank to the waters' edge. Side by side they dropped to their knees and hands and lowered their faces to the surface of the crystal stream. They drank, looking at each other from the corners of their eyes. Each had in mind a plan, bred of suspicion; but the plan was not put into effect. It was not a suitable place for a struggle; the bank was studded with stones, and the current, eddying into the shore with the mighty force of the falls, presented a spectacle suggestive of unpleasant possibilities.

Both men stopped drinking at the same instant, and stood up, face to face. They were, from a physical standpoint, men good to look upon; their every feature betokened muscular strength; their every motion skillful agility; their every attitude the possession of perfect nerves. Otherwise they were not handsome. Burk's face bore a disfiguring scar, and his complexion was the red of the brick. The sheriff was less handsome than was Burk; his skin had not tanned uniformly, and his nose was crooked, ostensibly the result of an accident.

"Well?" said the sheriff, impatiently, after an interval. He made a slight movement with his right hand, which movement was almost simultaneously repeated by Burk. Nothing came of it.

"Well?" echoed Burk.

"I want you to come with me."

Burk grinned again. "I don't have to, Simmie. Haven't been called Simmie before since you left the old farm back in Illinois, have you? I remember your old dad used to use that name when he wanted you to help him with the chores. He was an ingratiating old skunk, your dad."

The sheriff's eyes flashed angrily, but before he could speak Burk went on.

"Your mother — God bless her — called you always by your full name, because it had been her father's, and she prayed that you might become just such another man. If she had lived, Sim, I reckon I'd have turned out better than I have. Those years spent on your father's farm were mighty happy, peaceful ones to me. Your mother was the only—almost the only gentle influence my life has known. I hope, Sim, you are trying to be the sort of a man she wanted you to be."

"I reckon I am coming nearer to it than you are," returned the sheriff, testily. "She was a good woman, Burk.

"She was," agreed Burk, softly, and removed his hat with his left hand. "Peace to her ashes."

"Amen!" said the sheriff, and also removed his hat with his left hand.

They stood thus for a time, the sunlight dancing upon the disheveled heads as it filtered through the tree tops, neither losing sight for the fraction of a second of the other's right hand.

"How long has it been since she died?" asked Burk.

"Eighteen years."

"Then, I must be thirty-four and you thirty-six, Sim."

"You're right."

"What have you been doing all these years?"

"Not much; made an honest living—as honesty goes out here. And you?"

"Nothing good, Sim. I've made mistakes mostly. I didn't think about you being the sheriff when I first saw you this morning; I almost threw my arms around your neck — I was so darned glad to see an old-time face—before I remembered your initial identity; then I hiked for the State line. Great way for a chap to greet an old chum, wasn't it?"

"You didn't wait to hear my business with you?" The semblance of a smile appeared for the first time upon the officer's face. "You should have waited, Burk, it would have saved a heap of wind."

"I never wait under such circumstances, Sim," said Burk, frankly; "ain't the custom around here. I haven't been here long, but I've learned that much. When an officer appears at the front door, some one or more of us depart by the back door for Idaho. I was a bit later in starting this morning than usual, owing to my joy at seeing you, but I got here."

"Yes," with conviction, "you got here."

"And now?"

The sheriff returned the hat to his head, pulling it down with a jerk, "and now," he said, "we'd better talk business. I've no warrant for you, Burk."

"You haven't?" Burk was astounded. "I reckoned, Sim, that the fight up in the White Creek district was beginning to bear fruit when I saw you. I was helping herd cattle up there, you know, when the cattlemen got into a squabble with the sheepmen over range rights. It was a nasty mess; we slaughtered considerable many sheep while it lasted. I was in it as deep as anybody; and I had a feeling that I was wanted for mutton murder. Well! well! so that ain't it, eh?"

"No," said the sheriff, slowly, "that ain't it."

"What is it, then?"

"If you will come along with me, I'll show you. I didn't come down here alone this morning; I had with me two women. They're back there at the hotel now, wondering, I suppose, what's happened to me. I left 'em there while I went out to look you up. They—that is, one of 'em, Burk, wants to see you."

Burk's eyelids dropped suspiciously. "Why didn't you say so before?" he inquired.

"I didn't get a chance, and I was so mad and breathless I couldn't have done it, anyway. When you bolted out of the back door of that grocery store, I was flustered for a minute; couldn't understand it. Then I asked one of the other fellows if you'd be back soon, and he said he didn't think so. Then I tumbled. I saw that if our forty-mile drive wasn't going to utterly fail of its purpose, I'd have to run you down."

"H-m," mused Burk, not entirely convinced, but weakening. "I thought 'twas queer you didn't use your gun."

"And I," confessed the officer, "expected every second you'd draw on me. Fact is," he continued, after a careful scrutiny of the other's face, "I left my gun at the hotel."

"And mine," admitted Burk, grinning. "ain't loaded. Who's the lady, Sim?"

"Margaret."

Burk's mouth dropped open. He stepped back, speechless.

"Margaret, Burk. She wants to see you. She says there has been—was—is some sort of a misunderstanding between you. She—" He paused, staring at Burk, who was fighting for utterance.

"Has been—was—is—why, confound it, man, I haven't seen or heard of her for twelve years," stammered Burk.

"So she says." The sheriff was calm now, sure of his man. "I never knew how it was until recently. Margaret is my sister, but we never exchanged many confidences, maybe because I skipped out from home before we'd got old enough to have confidences worth telling, and our correspondence never amounted to much. How long did you stay in the old place after I left, Burk?"

"Close to six years."

"What started you into this country?"

"I reckon 'twas she. She and I went around together a good deal. I got to feeling after awhile that I couldn't be happy unless she was with me all the time. It was what's called love, I suppose."

"I suppose so," echoed the sheriff.

"I didn't say anything to her about it. I was only a hired man that had grown up from a sort of charity orphan, while she was the belle of the county. I was not sure of my license. When I went anywhere with her it was more as a brother than anything else—sort of a convenience. I never asked her to marry me. But, Sim, I suffered."

The sheriff grunted sympathetically.

"And then, one night when I was in the kitchen, reading that little book and she was in the sitting room with one of her girl friends, who was staying all night, I heard something that turned me wicked. I reckon they didn't know I was there, or else miscalculated the carrying power of their voices. Anyway, I heard it. They were talking about Ed Tuttle. Ed had been paying some attentions to Margaret, like all the other boys. He was good looking, but he wasn't fit for a girl like her to tie to. I heard them speak his name; then they laughed; and then she said good and plain, 'I'm going to make him have me; he's good enough for me. I—I love him!' Yes, sir; she caught her breath between the I's just that way. It made me sick, and, I reckon, just the least bit crazy. That night I packed my duds into the little old valise that your mother had given me and then struck out to take the night train, which happened to go West, saying nothing to anybody. 'T was a thing I couldn't explain, I thought; and I simply couldn't stand it to stay. I stopped in at the saloon when I went through town to the depot. I reckoned I'd find Ed there, and I did. I called him away from the poker game he was in, and I told him to treat the girl right, or I'd come back and kill him. He was a bit boozy, and told me to mind my own thumpety-thump business. I told him the girl was my business, and then he laughed loud and said the girl was a — well, no matter what he said she was. I hauled off and biffed him in the face. It was a fight then. He used a knife."

Burk lifted a hand caressingly to his scarred face.

"You fool!" said the sheriff, gently.

Burk bowed his head. "I've been a bigger fool many times since," he said, sadly, "but never where women were concerned; I've cut the women business out entirely since that time. I've been some lawless, not because I enjoyed it particularly, but because I felt ugly. Still, I haven't been so bad; a chap whose woman record is clear, and who never stole money or shed human blood, ain't so bad, Sim"

There was an appeal in the tone, and the sheriff, recognizing it, took one impulsive step forward, then stopped. "No," he said, "not so bad."

"Who is the other woman, Sim?"

"My wife."

Burk continued to caress the scar, meditating.

"I reckon, Sim, if it's all the same to you, I won't go back," he said at last. "Margaret's nothing to me now, nor I to her. If I were to see her, it might make me feel worse, and it couldn't make her feel any better. Just as much obliged."

"She came all the way on purpose to see you, Burk."

"How did she know I was here?"

"I told her. I've been looking for you for ten years, because she wanted me to, and now that I've got you I'm not going to let you get away. When I heard you were working in the store down here a week or two ago, I sent word to the marshal to keep an eye on you and, if you left, to let me know. I couldn't get away to come down here just then. I said to myself: 'I'll just get the girl out here while he's resting easy.' And I reckon we did."

The laugh with which the sheriff followed this somewhat awkward statement ended in a snort of annoyance, for Burk, shaking his head, had turned and was walking toward the river.

"Burk, you fool! see here!" In three prodigious strides he caught up with him and placed his hand heavily upon his shoulder. "She—Margaret—wants you in the same way you want her. Can't you understand? I wanted to get you back there and let her tell you herself; but"—reproachfully—"you've spoiled the whole arrangement, hang you!"

Burk paused. "Wouldn't Tuttle marry her?" he asked, bitterly.

"To blazes with Tuttle!" cried the exasperated sheriff. "It was you she was talking of that night. Burk, you, man, you! Can you grasp that?"

Burk passed his hand dazily across his forehead. "Me!" he whispered, with a sound not unlike a sob. "Me! Then—then I did butt into a girl case of Tuttle's that was none of my business. May the Lord have mercy on my poor soul! I have heard only—part of—what Margaret said that night, but I thought—"

"No matter what you thought, Burk," said the sheriff. "It's all right now. Come."

And he set off at a swinging pace, Burk close at his side, toward the State line.

—D. H. Talmadge, in Opportunity.

White Horse: "I hate to eat dry hay." Brown Horse: "Cheer up! Think of the poor people that have to eat health food."—Chicago Daily News.

Back to Gran'pa's.

I'm goin' back down to gran'pa's.
I won't come back no more
To hear remarks about my feet,
A-muddyin' up the floor.
There's too much said about my clothes,
The scoldin's never done.
I'm goin' back down to gran'pa's,
Where a boy kin have some fun.

I dug up half his garden
A-gittin' worms for bait;
He said he used to like it
When I laid abed so late;
He said that pie was good for boys
An' candy made 'em grow.
Ef I can't go back to gran'pa's,
I'll turn pirate fust you know.

He didn't make me comb my hair
But once or twice a week;
He wasn't watchin' out fer words
I hadn't orter speak;
He told me stories 'bout the war,
An' Injuns shot out West.
Oh, I'm goin' down to gran'pa's,
For he knows what boys like best.

—Sheldon, Iowa, Sun.

Kerosene for the Hair.

A woman recently asserted that the fine appearance of her hair was entirely due to a persistent and thorough treatment with the familiar kerosene of the corner grocery commerce. It was applied regularly once a fortnight in the following way: A little was poured into a saucer and rubbed with the fingers into the roots of the hair. The application was slow and thorough, the gentle massage of the roots with the finger tips being needed to open the pores for the absorption of the oil. The treatment was usually made at night, and the hair afterward tied up in a silk handkerchief.

The silk handkerchief is recommended by hair dressers as useful in retaining the natural electricity of the hair. By noon of the following day the odor of the kerosene had disappeared, and in another twelve hours the oiliness that followed its use had also gone. The effect of this treatment on the hair was promptly noticeable, the falling out stopped, and some new short hairs were found all over the head. As the kerosene application was continued the hair became thick and smooth. When, after several months, it was finally discontinued, abundant glossy locks replaced the dry and lustreless hair—the former condition still existing, though no kerosene had been used for several years.—New York Post.

The Happy Man's Shirt.

The late John Hay was fond of telling a story of a king who once upon a time fell into a state of deep melancholy. Court physicians could do nothing for him and were in despair, when a certain very wise man bethought himself of the well-known cure of sleeping in the shirt of a perfectly happy man over night. So courtiers were dispatched everywhere in search of the shirt of a perfectly happy man. One by one they returned from their fruitless search throughout the vast kingdom. At last only one courtier remained out, and he, too, began to despair of finding the shirt of a perfectly happy man. It was just about twilight and he was riding over a village green, when he was attracted by the careless laughter of a disreputable beggar who was stretched full length upon the sward.

"Are you a perfectly happy man?" demanded the courtier, reining his horse.

"You bet," said the beggar.

"A thousand crowns for the loan of your shirt!"

"But I ain't got none," replied the beggar.

He (dilating on his new motor): "Oh, yes, the other day we ran over 35 miles an hour easily." She: "Really? How nice! Do you know we heard it was over two poor little dogs and a pig!" —Punch.

Belle: "Do you think Chappie loves me?" Grace: "I know it. He told me to-day that he was going to shave off his mustache so that he could devote more thought to you."—Credit Lost.

Domestic Hints.

Honey Cake.—To make honey cake, melt a cupful of butter and mix it with two cupfuls of strained honey, a tablespoonful of ginger, a grated nutmeg, a bit of lemon rind and a little flour. Dissolve a heaping teaspoonful of soda in a cupful of water and strain into the mixture. Then add flour till the mixture is stiff enough to roll out. Bake like gingerbread. This cake may be eaten warm or cold.

Rice Griddle Cakes.—For rice griddle cakes and honey boil a cupful of rice. When it is cold, mix thoroughly with one pint of sweet, milk the yolks of four eggs and enough flour to make a stiff batter. Add one tablespoonful of melted butter, one teaspoonful of soda, two of cream of tartar and a little salt. Fold in the beaten whites of the eggs and bake on a hot griddle. As fast as baked, butter, spread with honey, roll up and serve hot.

Hot Potato Salad.—Put into a fryingpan one-fourth of a pound of bacon cut into dice; when light brown, take out and saute in the fat a small onion cut fine. Add one-half as much vinegar as fat, a few grains of salt and cayenne, and one-half as much hot stock as vinegar. Have ready the potatoes boiled in skins. Remove the skins and slice hot into the fryingpan, enough to take up the liquid. Add the diced bacon, toss together and serve.

Peppermints.—Boil hard for five minutes four cupfuls of white sugar, one cupful of hot water, twelve drops of oil of peppermint, fifteen drops of wintergreen. Pour into a bowl and stir briskly until the mixture begins to thicken. Then drop on a cold tin dish as fast as possible. A small teaspoonful of the candy dropped on the dish will make a lozenge as large as a half dollar. Do not place the lozenges so close together that they will run into each other, or they will not be a good shape.

Green Tomatoes and Onions.—A delicious pickle may be made of green tomatoes and onions. Slice one peck of green tomatoes and half a peck of white onions. Put them in a press in layers of salt. In two days place them in a porcelain-lined kettle and just cover them with cider vinegar. Add an ounce of whole cloves, one ounce of allspice, two ounces of mustard seed and five large red peppers, shredded in small pieces. When all the pickles are scalding hot pour them into stone jars and when cold cover them closely.

Hints to Housekeepers.

A few spoonfuls of sherry added to the bread stuffing of a squab is an improvement to the flavor.

If lemons show signs of spoiling or growing hard and horny, place them in more than enough water to cover them. Change every day or two.

Pure olive oil, mixed with a little glycerine, is recommended as a cream for massaging the face at bedtime. It feeds the tissues without yellowing the skin.

Onion sandwiches are said to clarify the complexion. The onions must be sliced very fine and salted, then placed between thin slices of bread and butter. Parsley is said to be an antidote to the hateful odor left on the breath by raw onions.

A French way of cooking egg plant is to cut small ones in halves, score the cut sides, brush with salt, pepper and olive oil, and boil until soft. Serve with a tomato sauce in which a small onion and a clove of garlic have been cooked. A little lemon juice, minced parsley and shredded anchovies are added.

Salt is said to be a preventive of festering in scratches, open wounds, etc. An American teacher in Porto Rico was surprised to see a native who was clearing a tract of brush apply fine powdered salt to his feet and legs. The scratches could not be avoided, but a pinch of salt could be depended on to keep them from festering, the man said. Contrary to common opinion, salt does not aggravate the painfulness of open wounds. The value of salt as an antiseptic is demonstrated by its general use as a preservative.



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The Markets.

San Francisco Produce Report.

SAN FRANCISCO, August 16, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.		Dec.	
Wednesday	$ 83⅜@	82½	84⅜@	83⅜
Thursday	83⅛@	81⅞	84⅛@	83⅛
Friday	83⅛@	81⅞	84⅛@	83⅛
Saturday	83⅛@	81¼	84⅛@	82¾
Monday	81⅞@	80½	83½@	82⅛
Tu sday	81⅝@	80⅞	83 @	82¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53⅞@53¾	45⅞@45½
Thursday	53⅞@53½	46½@45¾
Friday	54⅛@53¾	46⅛@45⅞
Saturday	54⅜@53⅝	46¼@45⅝
Monday	53¼@52⅝	45¼@44½
Tuesday	52⅞@52¼	45½@44⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 39⅜@1 38⅜	$ —@—
Thursday	1 39 @1 38¼	—@—
Friday	1 38⅛@1 37½	—@—
Saturday	1 37½@1 37	—@—
Monday	1 36 @1 34⅞	—@—
Tuesday	1 35½@1 35⅛	—@—

Wheat.

The market for December option is very dull, showing a decline of about four points. A corresponding decline has also taken place in the Eastern market. There has been very little trading as people are afraid to buy owing to the fact that the reputed large crop in the North, as well as throughout wheat sections of the Middle West, is so near at hand. Spot prices remain the same, though trading has been light. There is very little strictly choice now in the market and such lots as are offering are quickly taken up by the mills at the maximum quotation given. Wheat for September delivery can be bought for $1 to $1.50 per ton less than at last quotations, as large arrivals from the North are expected next month. Reports from Washington state that as threshing progresses it becomes more apparent that the yield is above the average. From the East reports of a similar condition are received. Prices are close to an export basis, and there is every probability that the first marketings of new wheat, now already begun, will carry the price level into the export basis.

California Milling	$1 55 @1 65
Cal. No. 1 shipping, alongside	—@—
Cal. No. 1 shipping	1 50 @1 55
Oregon Club	1 50 @1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.36⅛@1.36⅝.

Flour.

The flour market is not especially active, but the demand remains steady. Prices are being well maintained at quotations given, no decline being looked for in the near future, as millers complain of a scarcity of good old wheat for milling purposes. There is scarcely any export demand from the Orient, though a fair Central American demand continues to make its influence felt to some extent on the local market. Reports from the winter wheat States show that most of the farmers are stacking or storing their wheat, except in Michigan and Nebraska. In the latter States, where the yield is large and quality fine, the selling has been free, although the inclination to hold it has developed since the recent decline. In Kentucky, Tennessee and Texas the quality of grain is so poor that farmers are selling, fearing the condition of the wheat is so that it will not keep. It is said that little of the crop is fit for milling.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

The market is slightly firmer on choice lots of spot feed barley, and very little is offering at the advance noted. Good, bright lots found ready takers at $1.01½ to $1.03¾. Plenty of off grade is to be had at a decline of 1c in price. There has been quite a little trading during the current week in December option and prices in futures are well maintained. Reports from Washington state that the yield is above the average, reports of a 70-bushel yield, machine measure, not being uncommon. An extremely light crop is also reported here and there. The reports state that, while the yield will be heavier than last year, the grade will not be quite so good, owing to a shrinkage of the berry, due to the intense heat in the latter part of July.

Feed, No. 1 good to choice spot	$1 01½@1 03¾
Feed, fair to good	96¼@ 98¾
Feed No. 1, December	99¾@—
Brewing, No. 1 to choice old	—@—
Chevalier, No. 1 to choice	1 10 @1 15
Chevalier, common to fair	1 00 @1 07½

Oats.

There has been a good request for oats of all kinds now in the market. Choice oats are very scarce, but large quantities of poor quality are offering. Receipts have been rather light and of inferior quality. Prices are ruling firm as quoted.

White oats, fancy feed	$—@—
White, good to choice	—@—
White, poor to fair	—@—
Milling	—@—
Black oats	1 45 @—
Red, choice new	1 30 @1 35
Red, fair	1 22½@1 27½

Corn

Arrivals have been mostly from the East and these have been light. No movement of a jobbing character was done, most of the corn having been picked up by the millers. Reports from the corn belt state that rains throughout that section caused a good many selling orders to be brought into the Chicago market which caused a sharp falling off of prices for futures, but that on the decline there seemed to be a fair commission house demand for May and December option.

Large White, good to choice	$1 40 @1 42½
Large Yellow	1 40 @1 42½
Small Yellow	1 50 @1 60
Egyptian White	—@—
Egyptian Brown	—@—
Eastern, sacked	—@—

Rye.

There has been a little trading in rye and the market is a shade firmer, though quotably unchanged prices. Receipts have been light and of good quality.

Good to choice	$1 45 @1 50

Buckwheat.

There is no movement in buckwheat as there is not sufficient stock on hand to warrant extensive trading. The only holdings are in the hands of the millers and there are said to be barely sufficient to supply immediate wants. Prices are nominal.

Good to choice	$1 75 @2 25

Beans.

No particular change is noticeable in the bean situation with the exception of blackeyes which are now almost entirely out of the market. There are one or two light holdings and these are being held at an advance of 25c. Stocks have been further reduced, choice small white stock being now out of the market entirely. Very few pinks of any grade are now offering and Red Kidneys and red beans are out of the market entirely.

Pea, good to choice, 100 lbs	$— @—
Small White, good to choice	— @—
Small White, damaged	1 50 @2 75
Large White	2 50 @2 85
Large White, damaged	1 50 @2 40
Pinks	3 25 @3 75
Pinks, damaged	1 25 @2 75
Bayos, good to choice	3 75 @4 25
Bayos, damaged	2 50 @3 50
Red Kidneys	3 50 @4 00
Reds	5 50 @6 00
Limas, good to choice	5 50 @5 65
Black-eye Beans	3 25 @3 40

Dried Peas.

There has been little trading in dried peas during the current week. Stocks are very light in all varieties. Prices remain quotably unchanged and no change is expected before the new crop peas begin to come into this market. No Eastern business has as yet developed.

Green Peas, California	1 85 @2 10
Garbanzos, Large	—@—
Garbanzos, Small	—@—
Niles	1 75 @2 00

Hops.

Market dull and but little trading on the Pacific coast, said to be due to the unwillingness of growers to accept reduced prices, which would seem to be warranted by the heavy stock of past crop still on the coast, which is estimated at 23,000 bales, and mainly to the very favorable condition of European crops. Indications are not very encouraging to a betterment of the situation, unless climatic conditions should change for the worse and do some damage, but this is not expected, as the season in foreign countries has been very regular and a continuance is looked forward to. A few deals have been made in the north on spot goods at 15c to 16½c and an occasional contract for coming crop at 14c. But there does not appear to be much life to the trading. Wheatland and Sacramento harvesting will commence on the 21st inst., Russian river about the 1st prox. and Sonoma county about the 4th. Prospects everywhere are favorable and quite an improvement is noticed in California crops, on account of the very favorable weather prevailing. It is estimated that the crop of California will be in the neighborhood of 65,000 to 70,000 bales, Oregon 110,000 bales, Washington 45,000 bales and New York State 60,000 to 65,000 bales.

Good to choice 1904 crop, nominal	15 @ 18

Wool.

All shearing is in progress and some contracting for the same has already been done. There is very little spring wool arriving in this market at present, with the exception of a few small lots of scoured wool which are generally picked up at prices ranging about 2½c below the maximum quotation given for early July prices, the wools being short and specky. The Eastern market is quiet at present, but it is expected that a general demand will soon commence in that section and continue the balance of the year. A large business has been done in the Boston market on wool suitable for worsteds, shorter wools suitable for woolens, while the market is fairly steady, are not moving free, but will no doubt be wanted before the close of the year. The first season's sheep shearing by machinery has just been completed in Lake county, and it has been found that machine shearing is a trifle more expensive than hand shearing, so it is not expected that the introduction of the new method will result in a revolution of prices.

SPRING.

Humboldt and Mendocino	25 @28½
Northern, free	24 @27
Northern, defective	20 @22
Middle County, free	20 @25
Middle County, defective	17 @21
San Joaquin and Southern, free	17 @20
San Joaquin and Southern, defective fall	9 @14
Oregon, valley	26 @27½
Eastern Oregon	16 @22
Nevada	18 @22

Hay and Straw.

The situation remains unchanged here, with strictly fancy grades selling easily at good prices and the medium and poorer grades dragging badly. As the season progresses there is a growing uneasiness on the part of many farmers who lack storage facilities and who, being dissatisfied with market prices, have been holding for a higher figure. Several cases are reported where crops have been held over in first hands and have been roofed over in the field. Considering the large amount of hay that will be stored throughout the country there is small prospect for an improved market, although a heavy winter, necessitating the feeding of extra quantities of hay or the development of a foreign trade in some unexpected quarter, would go a long way toward improving the condition of affairs. Receipts of hay for the current week have been the heaviest of the season, the total showing 5700 tons.

Wheat, good to choice	$ 9 50 @ 14 00
Wheat and Oat	8 00 @ 12 00
Tame Oat, fair to choice	7 50 @ 11 00
Wild Oat	5 00 @ 8 00
Barley	6 50 @ 9 00
Clover	6 00 @ 9 00
Alfalfa	6 00 @ 10 00
Stock hay	5 00 @ 6 50
Compressed	10 00 @ 13 00
Straw, ₱ bale	30 @ 50

Millstuffs.

Market remains firm on all kinds of millstuffs. A scarcity of bran and middlings continues to prevail. Prices are being well maintained at quotations given. Stock of shorts are very light and a good demand threatens to clear up the market entirely.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	21 00 @ 22 50
Middlings	28 00 @ 30 00
Shorts, Oregon	22 00 @ 24 00
Barley, Rolled, choice	22 00 @ 22 50
Cornmeal	30 00 @ 30 50
Cracked Corn	32 00 @ —
Oilcake Meal	33 50 @ 35 00
Cocoanut cake or meal	21 00 @ 22 00

Seeds.

A little mustard is now coming into the market, though no extensive trading has developed. Prices are quotably unchanged, though choice lots would bring an advance on quotations given. Some small lots of canary are arriving, but they have proven uniformly of light weight.

Flax	$2 25 @ 2 50
Mustard, Yellow	3 25 @ 3 75
Mustard, Trieste	4 50 @ 5 00
	Per lb.
Alfalfa	—@—
Canary	6½@ 7
Rape	2½@ 3
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Stocks of honey are large and the market weak. Receipts are of fair size and excellent quality. Prices are being maintained at figures quoted despite the fact that there is very little demand at those figures.

Extracted, Water White	5 @ 5¼
Extracted, White	4¾@ 5
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax.

A little trading has been done at quotations given but the market is still easy. Receipts are of fair size and of good quality.

Good to choice, light ₱ lb	27 @29
Dark	25 @26

Live Stock and Meats.

The market is weaker, owing to unusually heavy receipts. Stock now on hand is large and the demand weak. Prices show a decline of ½c on beef and ¼c on hogs. The hog merket is in fair shape, however, while mutton is steady at prices quotably unchanged.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@ 5
Beef, 2nd quality	3½@ 4½
Beef, 3rd quality	3 @ 3½
Mutton—ewes, 5@6½c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5¾@ 6
Hogs, large, hard, over 200 pounds	5½@ 5¾
Hogs, small, fat	5⅝@ 5¾
Veal, large, ₱ lb	5 @ 7
Veal, small, ₱ lb	8 @ 9
Lamb, yearlings, ₱ lb	8 @—
Lamb, spring, ₱ lb	8 @ 9

Hides, Skins and Tallow.

Hides are still very firm at the recent increase in prices. Hide and leather men now accept the present price as fixed for the next few monthi at least. Tanners are not buying as freely as before the advance, but there is far from being any accumulations, and good sound hides should bring full figures.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		3½@3¾

Bags and Bagging.

There are very few grain bags left in the local market, and a brisk buying demand has materially reduced stocks in other varieties. Fruit sacks are now in good request and the lower grades show an advance of ⅛c in price, owing to the fact that high grade stock is becoming limited. Prices are ruling firm at quotations given.

Bean Bags	$ 5½@—
Fruit Sacks, cotton	7 @7¾
Fruit Sacks, jute, as to quality	6 @7½
Grain Bags, Calcutta, 22x36, spot	7¼@7¾
Grain Bags, Calcutta, buyer June-July	—@—
Wool Sacks, 4-lb	33 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

The market shows considerable improvement in all good grades of stock. Even poor stock moves off readily at the lower range of prices. Turkeys young and old, young roosters and large hens are in good request.

Turkeys, choice Young, ₱ lb	$ 25 @ 27
Turkeys, live gobblers, ₱ lb	19 @ 21
Turkeys, live hens ₱ lb	20 @ 22
Hens, California, ₱ dozen	4 00 @ 4 50
Hens, large	5 50 @ 6 50
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	6 00 @ 7 00
Fryers	4 00 @ 4 50
Broilers, large	3 00 @ 3 50
Broilers, small to medium	2 50 @ 3 00
Ducks, old, ₱ dozen	4 00 @ 4 50
Ducks, young, ₱ dozen	4 00 @ 5 00
Geese, ₱ pair	1 75 @ 2 00
Goslings, ₱ pair	— @ 2 00
Pigeons, old, ₱ dozen	1 25 @ —
Pigeons, young	1 25 @ 1 50

Butter.

The market is firmer on choice creamery stocks. Prices on other stocks are being well maintained by a brisk demand. Receipts are large and of good quality. Considerable stocks have been drawn from storage, but have not had the effect of reducing the price of choice.

Creamery, extras, ₱ lb	23 @25
Creamery, firsts	22 @23
Creamery, seconds	20 @21
Dairy, select	20 @21
Dairy, firsts	19 @—
Dairy, seconds	18 @—
California storage	21 @22¼
Mixed Store	17 @18

Cheese.

The market is a shade firmer, but at no special advance in prices. Only fancy mild California cheese will bring the outside figure of 11½c quoted. Receipts are fairly large and of good quality.

California, fancy flat, new	10½@11½
California, good to choice	9¼@10
California, fair to good	9 @ 9½
California, "Young Americas"	11 @13
Eastern, new	15 @18

Eggs.

The best ranch eggs are holding steady at the minimum quotations, but not many

are coming into the market which will command those prices. A slight drop is now predicted, as prices have been boosted to a figure which has caused large stocks to be taken out of storage, and have also caused an accumulation of select stock. Prices given are of actual sales in this market.

California, select, large, white and fresh.	29	@	30
California, select, irregular color & size.	24	@	26
California, good to choice store	18	@	22
Eastern firsts	20	@	22
Eastern seconds	17	@	19

Potatoes.

The market is just a shade stronger this week, though prices are without quotable change. A slight strengthening tendency has been brought about by the development of a fair-sized Eastern demand. Shipments to Eastern points are expected to fall off, however, as soon as Colorado opens up. The export demand is steady, but remains small. Prices on this market are being maintained at figures quoted.

Cal. Early Rose, ₱ cental	50	@	60
River Burbanks, ₱ cental	60	@	75
Salinas Burbanks	80	@	1 10
Chile Garnet, ₱ cental	50	@	60
White Rose, ₱ cental	65	@	75

Vegetables.

The market is weaker, prices on nearly all varieties showing a sharp decline. Lima beans continue firm at quotations given, stocks in the article being scarce and receipts light, but of good quality. Onions are weaker and summer squash is scarcely marketable. All vegetables coming into this market now are of good quality the favorable condition of the weather being of material assistance in this respect.

Beans, Lima, ₱ lb	7	@	—
Beans, String, ₱ lb	2	@	4
Beans, Wax, ₱ lb	3	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	—	@	1 25
Egg Plant, ₱ box	1 25	@	—
Garlic, ₱ lb	4	@	5
Onions, New Yellow Danvers, ₱ ctl.	65	@	85
Onions, New Red, ₱ ctl.	35	@	50
Peas, Green, ₱ sack	75	@	1 25
Peppers, Bell, ₱ box	25	@	75
Peppers, Green, ₱ box	25	@	50
Rhubarb, ₱ box	25	@	50
Summer Squash, per large box	15	@	35
Tomatoes, ₱ box or crate	25	@	50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Fresh fruits are now fairly abundant in this market. The market is rather weak, however, owing to unusually large arrivals. Prices on many varieties show sharp decline. Apples are quoted at an advance of 25c per 50-pound box for select stock and a small decline on inferior stock. Apricots are not offering either in bulk or by the box. They are out of the market somewhat earlier this season than usual on account of the fact that dryers and canners bought quite heavily during the past few weeks fearing that there would be a shortage for their purpose. Advices from the Pajaro valley state that the apple crop was never more promising in that section than at the present time and that the indications point to an excellent quality of fruit. Berries of all kinds show an advance of 50c to 70c in price. Peaches are also firmer in price and Dearborn seedling pears are now out of the market. There are no prunes left in the market and some varieties of plums are becoming very scarce.

Apples, choice to select, ₱ 50-lb bx	75	@	1 25
Apples, good to choice, ₱ 50-lb. box	60	@	85
Apples, fair to good, ₱ 40-lb box	35	@	60
Blackberries, ₱ chest	2 00	@	3 00
Cantaloupes, pony crate	—	@	—
Cantaloupes, ₱ box	25	@	50
Crabapples, ₱ small box	40	@	50
Figs, ₱ one layer	35	@	50
Figs, ₱ two layer	75	@	1 00
Grapes, Seedless, ₱ crate	75	@	90
Huckleberries, ₱ lb	10	@	12½
Loganberries, ₱ chest	3 50	@	5 00
Peaches, ₱ large box	75	@	1 25
Peaches, ₱ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	85	@	1 25
Plums, large, ₱ crate	40	@	75
Plums, ordinary, ₱ box	30	@	50
Raspberries, ₱ chest	5 00	@	6 00
Strawberries, Longworth, ₱ chest	4 00	@	5 00
Strawberries, large var., ₱ chest.	4 50	@	5 00
Watermelons, ₱ doz	75	@	2 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The market is very firm in nearly all lines of dried fruits. A brisk buying demand has advanced prices quite materially and reduced stocks still further. No more old nectarines are in the market and the new crop is expected to open at about 7c per pound. Prunes show an advance of ¼c on all grades and sizes. Reports from Ventura county state that the apricot crop is all harvested and that it will run to about 1200 tons. Last year's crop was 1500 tons. The fruit is not of as good quality as last year, though some lots show a superior quality.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6½	@	7
Apples, extra choice to fancy, 50-lb boxes.	7¼	@	7½
Apricots, Moorpark	—	@	—
Apricots, Royal, good to choice, ₱ lb	7	@	7½
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	5	@	6½
Nectarines, White and Stanwick, ₱ lb	5	@	5½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	7½	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	11
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

The market is in good shape and prices remain the same as at last quotations. Stocks now on hand include little of strictly choice quality. There has been little trading in futures, as the size of the growing crop is still very problematical. The latest reports from the raisin sections would indicate a crop considerably under the average. If this is the case a further advance may be expected, as the Growers' & Packers' Association has the price situation practically in its own hands.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2 crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	3¾	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4⅛		c

Citrus Fruits.

The market is in good shape. Stocks are limited and arrivals light and of good quality. Navel oranges are now out of the market and Valencias are not plentiful at prices quoted. Lemons remain firm at quotations given. Limes are ruling a shade firmer but at prices quotably unchanged. Grape fruit is weaker, showing a decline of 50c per box.

Oranges, Valencias, ₱ box	2 25	@	3 50
Lemons, California, select, ₱ box	3 00	@	3 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 50	@	2 00
Limes, ₱ box	5 00	@	8 00

Nuts.

The market for nuts continues good, but stocks are very light and little trading is being done. Almonds are out of the market entirely, but some of the earlier varieties are now being harvested and are expected to show up in a few days. There have been as yet no arrivals of Nonpareils, the quotations being those at which the new crop is expected to open. Reports from Ventura state that the English walnut crop will not at the outside exceed two-thirds of that of last year. Growers can not account for the falling off. Even now there are said to be small walnuts just forming in some orchards, while in others they are already half grown. The nuts all promise to be of good size and quality. It is said that the Association will make an effort this year to fix the price at 15c, as against a price of 11c for last year.

Chestnuts, Italian, ₱ lb	—	@	—
Nonpareil Almonds	13	@	16
Ne Plus Ultra Almonds	—	@	—
Languedoc Almonds	—	@	—
Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½

FEW PEACHES TO BE DRIED.—Delta, Aug. 10: From the amount of peaches being hauled to the two canneries in Visalia, and from what can be learned from the producers, it is likely that dried peaches this fall will bring good prices. For illustration, the two largest ranches in the county—the Visalia Fruit & Land Co. and the old Fleming ranch—will not dry a peach. Every peach on each ranch is contracted to the new cannery, as well as many smaller ranchers have contracted to sell their peaches to this cannery. As the old cannery is canning as much fruit as the new one, and as the supply is necessarily as great from the ranches, it is evident that few peaches in the county are being dried. Walter Rouse, foreman of the Fleming ranch, states that from ten to fourteen four-horse wagonloads of peaches are hauled from the ranch daily. Mr. Rouse states that the pitting sheds out on the ranch will not be used at all this year, though the drying grounds and trays will be used when the prune crop is ready to harvest. Mr. Rath was seen Thursday afternoon and he said that his cannery is receiving all the fruit that can possibly be handled there. This shows that about all the peaches, practically speaking, or a great part of the tonnage, will be canned instead of dried.

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Knots, Hitches and Bends.

Miners are daily required to make use of ropes in various ways, both on the surface and underground, and it is very desirable that the miner know how to quickly make a safe knot, hitch or bend in a rope. It is not only the necessity of making a secure knot, but forming one which may readily be untied. For instance, all miners are or should be thoroughly familiar with the combination known as the "timber and half hitch." This is illustrated in the accompanying sketches at V. Its utility is well known and the sketch is both familiar and well made. As this well-known form of hitch appeals to those who frequently are required to make use of it, so each of the other knots, hitches and bends have their particular usefulness, and should be carefully studied and practiced, until each of them can be readily made. The accompanying cuts and descriptive matter are from the handsome pamphlet, "Manila Rope," issued by the C. W. Hunt Co., of 45 Broadway, New York, on transmission and hoisting rope:

KNOTS, HITCHES, BENDS.—The principle of a knot is that no two parts which would move in the same direction, if the rope were to slip, should lie alongside of and touching each other.

A great number of knots have been devised, of which a few of the most useful are illustrated. In the engravings they are shown open, or before being drawn taut, in order to show the position of the parts. The names usually given to them are:

A—Bight of rope.
B—Simple or overhand knot.
C—Figure 8 knot.
D—Double knot.
E—Boat knot.
F—Bowline, first step.
G—Bowline, second step.
H—Bowline, completed.
I—Square or reef knot.
J—Sheet bend or weaver's knot.
K—Sheet bend with a toggle.
L—Carrick bend.
M—"Stevedore" knot completed.
N—"Stevedore" knot commenced.
O—Slip knot.
P—Flemish loop.
Q—Chain knot with toggle.
R—Half hitch.
S—Timber hitch.
T—Clove hitch.
U—Rolling hitch.
V—Timber hitch and half hitch.
W—Blackwall hitch.
X—Fisherman's bend.
Y—Round turn and half hitch.
Z—Wall knot commenced.
AA—Wall knot completed.
BB—Wall knot crown commenced.
CC—Wall knot crown completed.

The figures DD to HH represent the eye splice commenced and completed.

The bowline G is one of the most useful knots; it will not slip, and, after being strained, is easily untied. It should be tied with facility by every one who handles rope. Commence by making a bight in the rope, then put the end through the bight and under the standing part as shown in the engraving, then pass the end again through the bight, and haul tight.

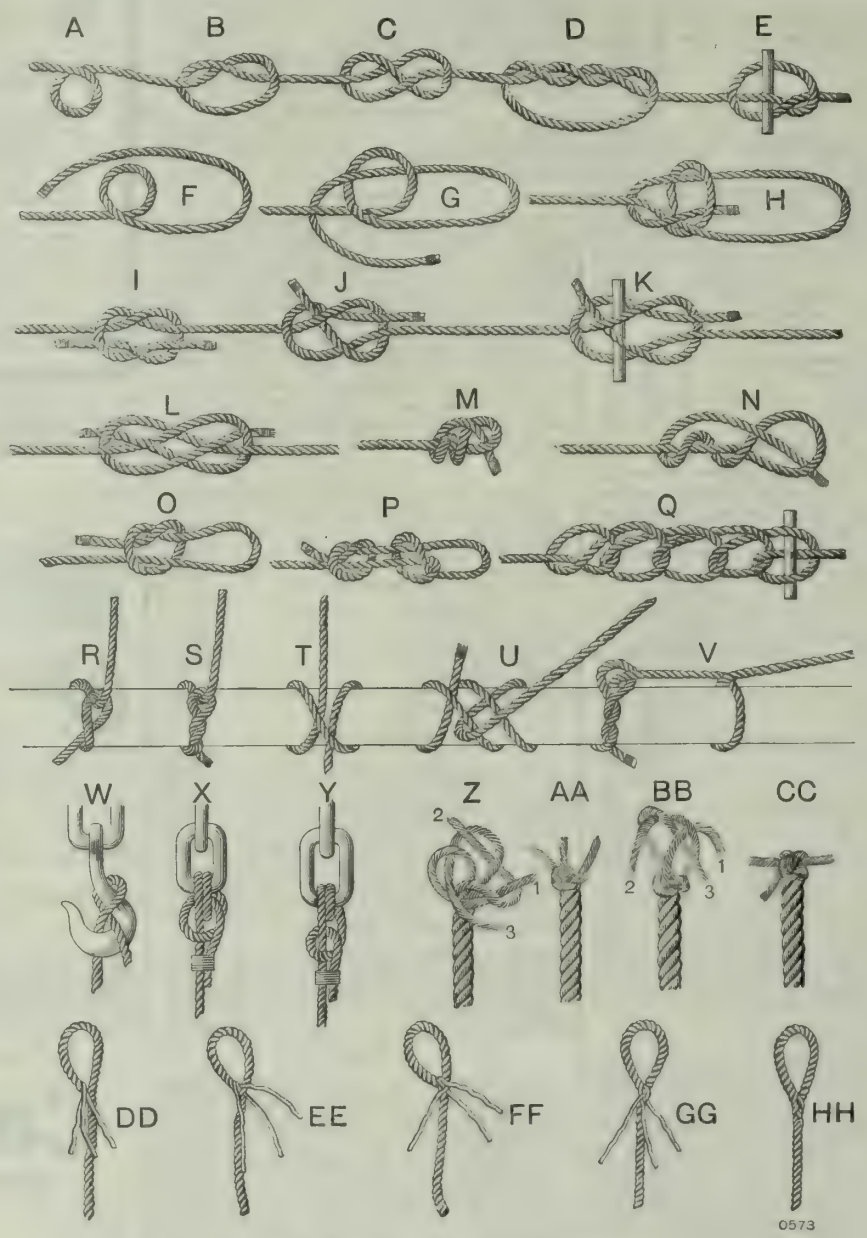
The square or reef knot I must not be mistaken for the "granny" knot that slips under a strain. Knots H, K and M are easily untied after being under strain. The knot M is useful when the rope passes through an eye and is held by the knot, as it will not slip, and is easily untied after being strained.

The timber hitch, S, looks as though it would give way, but it will not; the greater the strain the tighter it will hold.

The wall knot looks complicated, but is easily made by proceeding as follows: Form a bight with strand 1 and pass the strand 2 around the end of it, and the strand 3 around the end of 2, and then through the bight of 1, as shown in the engraving Z. Haul the ends taught, when the appearance is as shown in the engraving AA. The end of the strand 1 is now laid over the center of the knot, strand 2 laid over 1, and 3 over 2, when the end of 3 is passed through the bight of 1, as shown in the engraving BB. Haul all the strands taut, as shown in the engraving CC.

The "Stevedore" knot M, N is used to hold the end of a rope from passing through a hole. When the rope is strained the knot draws up tight, but it can be easily untied when the strain is removed.

KNOTS ARE WEAK.—If a knot or hitch of any kind is tied in a rope its failure under stress is sure to occur at that place. Each fibre in the straight part of the rope takes proper share of the load, but in all knots the rope is cramped or has a short bend, which throws an overload on those fibers that are on the outside of the bend and one fiber after another breaks until the rope is torn apart. The shorter the bend in the standing rope the weaker is the knot. (See the experiments of Prof. Edward F. Miller, Massachusetts Institute of Technology, in "Machinery," page 198, March, 1900.) The results given in the following table are approximate, but are sufficient to cause engineers to be cautious in all rope fastenings employed in important work.



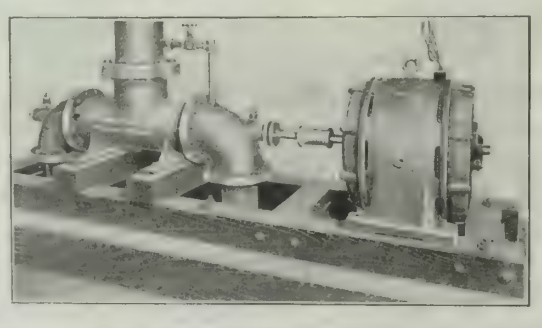
Useful Knots and How to Tie Them.

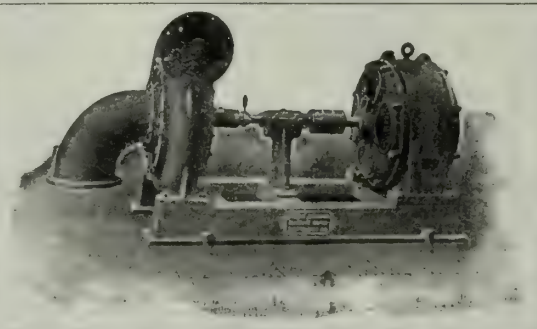
Table of the approximate strength of knots compared with the full strength of the rope based on Prof. Miller's experiments:

APPROXIMATE EFFICIENCY OF KNOTS IN A PERCENTAGE OF THE FULL STRENGTH OF THE ROPE.

	The Efficiency of the Knot.
Rope dry—average of four tests from the same coil as the knots	100
Eyesplice over an iron thimble	90
Short splice in the rope	80
Timber hitch, round turn, and half hitch	65
Bowline slip knot, clove hitch	60
Square knot, weavers' knot, sheet bend	50
Flemish loop, overhand knot	45

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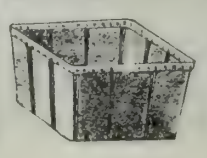


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FORESTRY.

Statistics of Forest Products.

The annual value of the forest products of the United States, as enumerated in the Twelfth Census, is nearly $575,000,000. If to this were added the value of the firewood, farm material, and other forest products for which no returns are available, a very much larger figure would be shown. Thus, as a direct source of wealth the forests of the country rank nearly with the mineral products as second to the farms. In addition to monetary value, the forests of the country have an immense, though not exactly calculable, value as a source of future supply and as a protective covering for watersheds.

Forest products are indispensable to mankind, and their steadily increasing price surely indicates that the demand is encroaching upon the supply. It is urgently important to the nation that the yearly consumption of forest products and the amount of available timber yet standing should be known.

In accordance with its policy of encouraging the preservation and proper use of the forest, the Forest Service is aiming to secure statistics for publication in a report in the hope that cooperation with the industries concerned will make possible an annual report entitled "Forest Products of the United States." This proposed report would give, by States, regions, and species, the cut and shipments of lumber, shingles, lath, cooperage stock, ties, posts, and poles during the year; the stock on hand at the close of the year; and also the amount of wood used in the various industries for which wood furnishes the raw material, and the value of the products. It would also give information concerning the amount of stumpage in the hands of lumbermen in various regions, how long it will last at the present rate of cutting, the extent of damage by forest fires, and other important matters relating to the forests of the country.

In order that the expense of collecting the statistics for this report shall not be excessive, nearly all the data will be obtained through correspondence. The names of proprietors of logging camps, sawmills, pulp mills, woodworking plants, and other manufacturing establishments for which wood is the raw material, will be secured from the Bureau of the Census. At the close of the present calendar year, a question card will be sent to each proprietor to be filled out with answers relating to his particular line of business. The replies will be held strictly confidential and only State totals will be published.

This work is of such vital importance to the lumbermen that the National Lumber Manufacturers' Association whose members produce approximately one-third of the entire lumber output of the United States, will co-operate with the Forest Service in the collection and compilation of the statistics in so far as they deal with lumber and shingles, as to cut, shipments, and stock on hand, and for this purpose the association will open an assistant secretary's office in Washington this autumn.

In announcing the plan to the members of the affiliated associations, Secretary Geo. K. Smith said:

"The announcement is made at this time in order that all members of affiliated associations may prepare themselves to answer these questions when asked, and that they will take personal interest in seeing that their friends and neighbors, who are manufacturing lumber and shingles but do not affiliate with any manufacturer's association, support this movement and make it a pronounced success. I feel sure that every member will realize the importance of this co-operation and give it his enthusiastic support."

Suggestions and communications concerning the proposed work will be gladly received by the Office of Forest Products, Forest Service, Washington, D. C.

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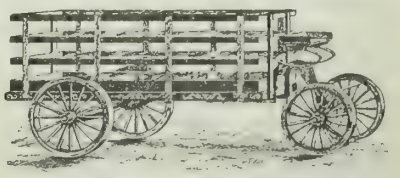


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THE VINEYARD.

Experiment in Incubating Grafts.

To the Editor:—One of the important questions before the vineyardists of northern and central California is to successfully meet the encroachment of the phylloxera. The experiments carried out in France and Spain have proven valuable. At the present time no one seems to have solved the problem fully. We know that several of the resistant stocks have been tried and proven satisfactory in various soils, and with vinifera grafts. A recent letter from Prof. Bioletti told how successful some of the vineyardists of France had been with Rupestris and the several hybrids of Rupestris and Riparia. An important matter relates to the suitable resistant stock for the several varieties of table grapes, so successfully grown in California, and also of the raisin grape. In Fresno county, for several years past, the larger vineyardists have been experimenting with resistant stocks, most of them in a small way, but some of them boldly planting out large vineyards.

The important experiments made in France with the wine grape on resistant stocks, and their brilliant success, as observed and recorded by Prof. Bioletti, would seem to settle the matter. This, however, is not the case with the other varieties, and the ones that interest some of us most. There seems to be no settled opinion, or proven experience, as to what resistant stock is best suited to the several varieties of table and raisin grapes. The success attained with the several favorite stocks for the wine grape has influenced others in using them for the table grape, where the soil and climatic conditions seemed favorable, but as yet no definite results have been announced.

Many of the farmers of this part of the State are indifferent about this question and continue to plant vineyards as heretofore. Many do not exercise ordinary care by disinfecting their cuttings from vines that are likely to be infected. Their argument is, that the phylloxera works so slowly in our hot, sandy, dry soils that it may be years before their vines are appreciably injured, and that they can secure profit from their plantings for a sufficient period before any damage may be done. There is some reason in this argument, for we know of vineyards that have been infected for ten years, and are still profitable, yet far from their original vigor and productiveness. About four years ago I began planting vineyards on resistant stock, in anticipation that a time might come when the old vineyards would suffer, and on the theory that it is not wise policy to plant new vineyards in infected districts unless they are on resistant roots.

The old method of bench grafting rooted cuttings and grafting in the field were both used with fair success. The injury resulting from carelessness in cultivating and plowing, and the continued working over of the vines that missed, proved expensive and slow and we abandoned these methods for the newer ones, namely, grafting the resistant cuttings and callousing them in, in dry sand beds or an incubator. We now have Emperors and Thompson Seedless grafted on Rupestris St. George that are three years old and in bearing this year. They are not unlike, in vigor and size, the same varieties on their own roots in the same soil. We have great hopes for their success, for we see no good reason why these varieties should not take as kindly to the resistant Rupestris as the several varieties of the wine grape have done. We admit that the time has not yet come when we can speak positively about this matter, but so far as our experience and observation go, we believe we are warranted in our hopes. The Rupestris St. George has been used quite extensively by ourselves and others in this neighborhood, and the hybrids 3306 and 3309 to some extent.

The method of grafting the resistant cuttings, callousing them in sand beds or an incubator, and planting in nursery rows, is preferable to the older methods of beach or field grafting the resistant rooted stock. Last winter, while grafting cuttings in the usual way, for callousing in sand beds, I had the foreman put some of these grafts in the olive oil cellar, where we had a large box stove constantly heated, and try the incubating method. At the time I was unable to find the reprint of Prof. Twight, giving full details of the French methods, so I substituted my own plans, as follows: The grafted cuttings were carefully arranged in moist moss and placed in layers, each layer covered with moss an inch thick. Fruit picking boxes holding fifty pounds were used for the purpose, and the root end of the cuttings was laid to the outside so that the grafted ends were in the middle of the box. These boxes when full held about 150 cuttings. No charcoal was used and the boxes were placed one on top of the other, three high, in this cellar where we were making olive oil. At night the fire was renewed so as to maintain the temperature. The temperature ranged from 70° to 84°. After ten days, the top layer of moss began to dry and was moistened by a light sprinkling of water. The under layers were not disturbed, and the moistening was made but once while they remained in the cellar. Callousing began within two weeks and continued rapidly. Cuttings were removed directly from the cellar to the nursery and planted without subjecting to subdued light.

The grafting was done from the 12th to the 28th of February, and the cuttings were planted in the nursery during the first week in April. At this time the cuttings were all well calloused, and many of them were both sprouted and rooted; that is, the scion was sprouted two or three inches long, and some of the cuttings had started to root. Most of them grew rapidly, and at this writing we estimate 90% of strong, healthy, vigorous vines, with canes from two to two and one-half feet long. Very few of the scions rooted, as in the case with other methods, and the results we obtained was a great surprise. The cuttings used were made about ten days after the first heavy frost, likewise the scions, which were originally meant for planting as cuttings, and not intended for scions. All buds were removed from the resistant cuttings before they were grafted.

About 2000 cuttings were grafted and treated this way. No special care was used to graft these better than the others, and the same stocks were used as with the ones we made and calloused in the sand beds.

Unfortunately the grafts treated in the sand beds were badly damaged by the March frost, and we estimate 60% of these are growing and a large proportion of the scions have rooted.

Of the vines treated by the incubation method, we have made photographs so as to show the rows lengthways and sideways. In the side view laths are placed at the misses so as to give the reader an idea of the proportion of misses in the rows and verify our 90% estimate on the growing vines. The cuttings were set about 6 inches apart in the nursery rows, and at the time the pictures were made the vines were so vigorous in canes and foliage that the pictures do not give an adequate idea of them.

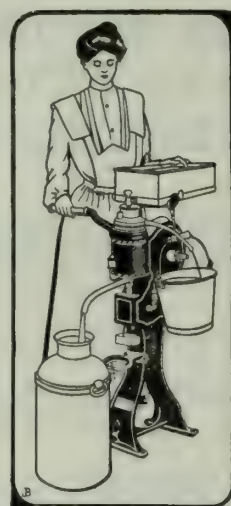
All the cuttings treated by this method were grafted to Malagas, and while we would not draw a conclusion from one experiment, the results were so remarkable that we shall follow up the method and hope to report as good or better results. We hoped to make an earlier report of this experiment, but all the knowing ones advised us to wait till the vines attained a greater age when my results might be different. As all these cuttings are now large, vigorous, healthy vines, showing the Malaga foliage and appearance, and as several people have viewed them critically, the writer has no fear of these recorded results being doubted.

Fresno. Dr. W. N. Sherman.

Such experience is valuable, and we shall always be glad to receive such straightforward accounts of local experiments.

The Interstate Commerce Commission promises to uncover some more things that the California fruit growers wish to know. They have begun this week investigation of the relations of railroad and refrigerator lines, both of which, it is charged, are violating the act regulating the interstate commerce in several specified particulars. The railroads and refrigerator lines are required to answer by September 5. It is charged that by way of rebate or other devices the refrigerator lines are collecting and receiving for the refrigeration of fruit and vegetables lower rates for some shippers than they are contemporaneously receiving for similar service rendered to other shippers. This is held to be in violation of Sections 2 and 3 of the Act to regulate interstate commerce. The arraignment is placed against all companies using refrigerator cars.

The J. B. Williams Co., Glastonbury, Conn., have been making shaving soap for nearly three-quarters of a century. Send for a free sample, as per their offer in another column.



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The Push Cart Alarm Unfounded.

Some of the California papers lately have printed New York dispatches to the effect that the fruit push carts are to be prohibited there. The Fruit Trade Journal has made inquiry at the city license bureau about it and reports as follows:

The officials say that since a year ago last June no new licenses have been issued, but all old ones have been renewed as they expired. Police Commissioner McAdoo is chairman of a committee appointed by the mayor to investigate the entire question, and this committee is expected to report soon. Since the establishment of the fish market it has been the idea that some disposition, other than that now obtaining, might be made of the fruit peddlers, and it is for this reason that no new licenses are being issued until the committee reports.

The fears of the Californians that the suppression of the street peddlers will curtail a large outlet for the fruit seems unfounded. It is understood to be the object of the city authorities to regulate this traffic, not kill it; to devise some way by which the people in the business may continue to ply their trade, but under restrictions which will remove most of, if not all, the existing objections. It will be remembered that when the fish market was established there was a great kick from the peddlers, but they soon saw their traffic grow to much larger proportions. The city authorities want to accomplish the same result with reference to the fruit peddlers.

There are now between 8000 and 10,000 licensed fruit peddlers in New York. It goes without saying that these are not going to be put ruthlessly out of business, and undoubtedly, if the mayor's committee decides that localizing the trade will seriously reduce its volume, the peddler business will continue as it now is. So we believe that our California friends need feel no alarm.

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DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

CEREAL CROPS.

Royal Australian Wheat.

Mrs. Isabella T. Bangs recently brought to the Modesto Herald office some sample heads of "volunteer" wheat grown on her ranch 4 miles north of Modesto. It grew on stubble land which was pastured by stock and then burnt off until the ground was black. The heavy rains of October started a strong growth of vegetation, which looked so well in December that thirty-five acres of it was left for hay, while the rest was winter sown.

When the "volunteer" headed it showed no bad effects of blight or rust like the summer-fallowed and winter-grown wheat surrounding it, and, although a thin stand and weedy, yielded 140 sacks of fine milling wheat, weighing 134½ pounds to the sack. It had no cultivation whatever. An attempt was made to harrow it, but it was abandoned on account of its rank growth and the heavy rains.

This wheat is of the variety known as the Royal Australian, and has a history. In 1884 the San Francisco Bulletin introduced this wheat into California by offering a prize in money to the one who could raise the greatest amount of wheat from 1 pound of seed. R. E. Bangs won the eighth prize of $40, raising 128 pounds of wheat from 1 pound of seed sent him by the Bulletin. In 1888 he raised a large crop of the wheat and sold it to the Grange Co. as seed. Since that time it has been grown on the land and always sold for the best milling wheat. Its purity and weight have been retained by the selection of only the largest white grains for seed. It took time and care with the best hand separator to accomplish this every year. It may lack gluten—as all white wheats are said to be deficient in that quality—but it certainly has not deteriorated, as is shown by the way it has asserted itself in this year of rust and blight, while other varieties have failed to come up to the standard required for milling wheat.

The method of raising "volunteer" wheat was practiced to a great extent here in the sixties, and many of the wheat barons of the State can attribute the beginning of their fortunes to that easy way of farming. An amusing story is told in this connection of a farmer in Stanislaus county who was left by the drought of 1870 with a few pitiful sacks of grain on his quarter section of land. He had neither seed nor feed, only a few scattering heads, and they were too low to cut. He thought it might seed the ground, if he had only a brush. To make one, he used a long scantling which would cost 75 cents, and he had not money enough left to buy that. In his dilemma he consulted his wife. She told him that if he would wait a few days she get him the money, as she had a few hens laying. He had to wait a week for the hens to perform their part. Then the timber was bought and a load of oak brush brought from the river and "keyed" into the scantling. The team was attached to the brush, which was then drawn over the stubble, crushing the heads and mixing the grains with the soil.

The rains were bounteous that year, and a fine "volunteer" crop covered his land. He baled and sold 75 tons of hay, while the rest made a good crop of wheat.

The wheat contributed by Mrs. Bangs is on display in the Herald office. The straw is over 3 feet in length and does not appear to have been cut close to the ground. The heads are long, heavy, and well filled with bright, plump grains, and the whole stalk is bright in color, strong and sturdy in appearance, showing no signs of the rust which is so apparent on the straw of this year's crop of grain all over the county.

Philippino Wheat in Imperial Valley.

J. N Woodward, who lives in the Silsbee neighborhood, about 8 miles southwest from Imperial, is one of the farmers who raised Philippino wheat the past season, and he is not regretting the fact, either, says the Imperial Press. Philippino is the new variety of wheat that resists the destroying influences of rust and makes a crop in any season, no matter whether wet or dry. This wheat has quite a history. The first of it that ever reached the United States was sent to San Bernardino, Cal., in 1898, from the Philippine islands by one of Uncle Sam's boys in blue, who sent a few grains of it home in a letter. D. G. Whiting came into possession of the seed and planted it. Just a few grains were saved and planted the next year. This time it was forgotten and harvested in with the rest of the crop and mixed, making it necessary to go back and glean the patch it had grown on to be sure of getting pure seed. This time the quantity available was hardly a teaspoonful of grain. Rather a striking evidence of the hard luck that attends haphazard seed introduction.

Then Mr. Whiting brought it to Imperial valley and, by careful attention, increased the stock of seed until last year he had seven acres. From him Mr. Woodward got seed and planted ten acres last winter. He had it threshed a few days ago and it turned out 182 sacks of splendid, plump wheat, weighing 132 pounds per sack of 2¼ bushels. This wheat Mr. Woodward disposed of to his neighbors for seed, and, after keeping what he needed for his own fields, sold the remaining forty-seven sacks to Peck & Toomey for $161.76, or about $60 per acre for the crop.

The other farmers lucky enough to have crops of this grain are D. G. Whiting, who has forty acres of it, and and S. M. Bixby, who has thirty acres. Neither of these gentlemen have threshed, so it is not known what their output will be; but now that it is known that this is a first-class milling wheat and that it will grow and produce ex cellent crops in this country, will survive the rust and thrive where other varieties fail, there is no doubt but that every grain Imperial valley can produce for years to come will be eagerly bought for seed by wheat growers in other parts where the rust is a bane that can not be avoided. The price set by Mr. Woodward of 3 cents a pound is a very reasonable one, considering the character of the grain and its immunity from rust. Imperial valley should become famous as a seed-producing locality for a great variety of seeds as well as Philippino wheat.

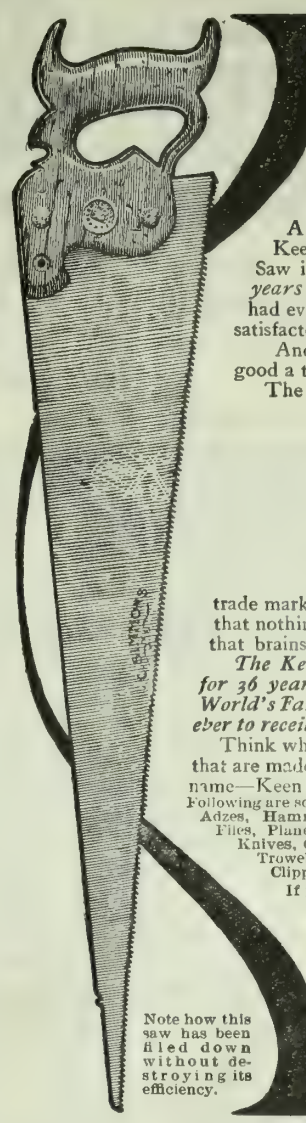
Oregon Blue Stem Wheat in the San Joaquin.

The seed wheat question, says the Stockton Mail, is probably the most absorbing matter farmers, millers and grain dealers have had to deal with. Various theories have been offered as to the cause of the deterioration of the cereal, but so far no plan has been suggested that has been followed to any extent. There is one fact that buyers say is certain, and that is that California wheat is far inferior to that of other States. Oregon and Washington are producing grain that is of much better quality than that grown in this State. It is not because the local soil is worn out, as the richness of California soil is proverbial. The real cause as given by those who have made a close study is that the seed used is not up to the standard.

A mistake that has recently been called to the farmers' attention is that of sowing the same seed repeatedly in the same locality. To sow seed from places where the climatic conditions and the soil are different has proved most beneficial. It is now becoming the custom to plant West Side wheat on the islands or in other parts of the county, while island seed is given the same treatment on the West Side. The change of soil and the slight difference in the climate has produced a very desirable effect. The wheat is stronger and the yield is much better.

Suggestions are being made every month by scientists who are working on the question. The farmers of the present time are following these suggestions and are securing better results. The day of regular routine farming is no more. The up-to-date farmer is progressive and is much more of a student than his father was. Much good has been acquired from the State farm at Modesto, and many things of interest have been brought to the farmers' attention.

Many farmers favor the introduction of the Oregon wheat and are going to plant it next season. The Oregon blue stem wheat contains a large percentage of gluten and is a hardy cereal. It yields abundantly and is exceedingly clean. A sample sack of the wheat which Melone & Perry recently received speaks well for the cereal. Taken from the harvest field it looks as clean as California wheat does after it has been put through a cleaning process. In fact, the farmers of Oregon experience no trouble with rust and rank growth. Their wheat is very clean. The blue stem ranks with the Australian variety for milling purposes and is similar to it. Those who have tried the Kansas wheat prefer the Oregon variety. Of course, the Kansas seed contains a large quantity of gluten, but the color is not as acceptable as the Australian or Oregon. The cereal is red and is slightly smaller than the blue stem.



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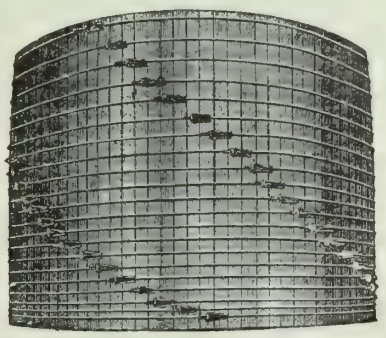
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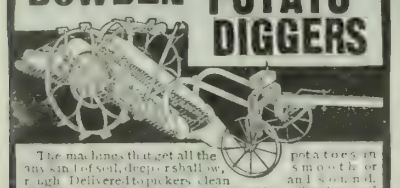


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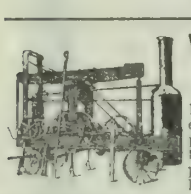
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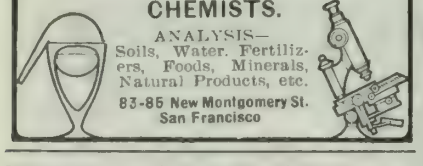
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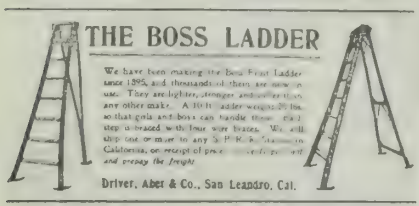
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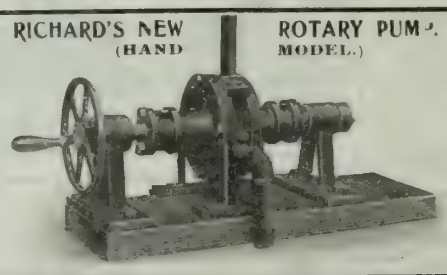
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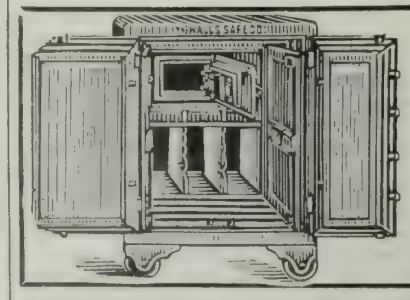
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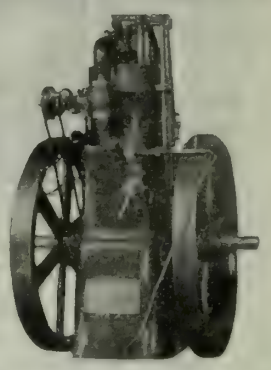
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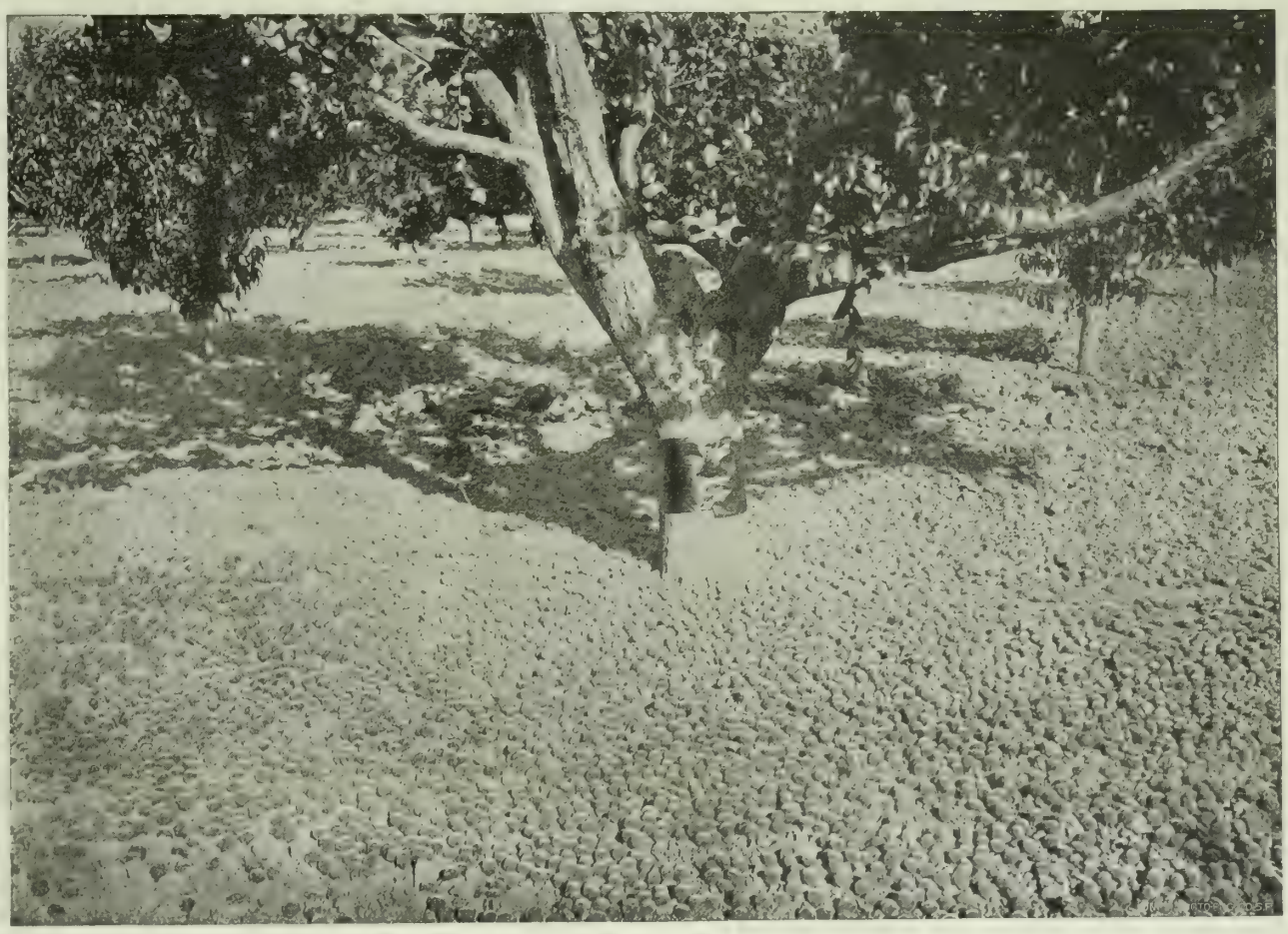
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 9. SAN FRANCISCO, SATURDAY, AUGUST 26, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Thinning Fruit.

It is not the season for thinning fruit, but it is just the time to think hard about what the grower has gained by thinning, or what he has lost in the selling value of his fruit by not thinning. Two weeks ago we gave illustrations from the J. H. Flickinger Co.'s operations, showing how the fruit is spaced naturally and how it is aimed to get wider spacing by thinning. This week we have another aspect of the case, also from the Flickinger orchards at San Jose, showing what a burden the tree is relieved from by thinning by the appearance of the ground when the work is finished. A view is also given of the process of picking good-sized apricots secured by the thinning process.

If we are correct, the process of removing surplus fruits and spacing properly those which are relied on to make the crop, finds its origin in the systematic work of European fruit gardeners who operated under glass or on the side of protecting walls, and their example was followed by American gardeners. We believe that the first country to resort to thinning systematically on large acreages of fruit was California. Now large orchardists in all parts of the world are emulating the California example, and thinning is in good standing everywhere in commercial fruit growing, though there is a great difference in the practice of individual growers, and many have not yet realized the advantage of undertaking such a tedious and expensive operation.



How Apricots are Thinned in the Flickinger Orchards at San Jose.

It will interest our California growers to have some points on fruit thinning from an Eastern point of view. We find them in an article written by Prof. E. J. Kyle of the Texas Experiment Station in the American Truck Farmer. Some of Prof. Kyle's propositions do not hold here because of differences in climate. We select, therefore, those which seem to be of universal application.



Picking Thinned Apricots: Note the Shape of the Trees and Size of Fruit.

In deciding upon the best time to thin, it should be remembered that the greatest desire in thinning is to secure the largest size fruit possible. To procure this extra size it is very essential that the young fruit be abundantly supplied with food as soon as possible after the fruit has set. Every day the surplus fruit remains upon the tree, food and energy are wasted. Since the June drop does not occur until nearly six weeks after the fruit sets, it would be advisable to thin earlier, and thus save the food and energy that is being expended on this surplus fruit.

Distance to thin is another question for which no definite rule can be given. Nearly every fruit grower has his own methods, which vary from time to time. Some men thin for a certain distance, while others are guided only by the amount of fruit on the tree. When the fruit is desired for drying purposes, 4 or 5 inches are generally sufficient; when general market fruit is wanted, 6 to 8 inches will probably do; while fruit for special market or show purposes would not be left much closer than 10 inches. In deciding upon the proper distance to leave fruit, careful attention should be given to the individuality of the tree. Although trees are of the same variety, and in a few feet of one another, they will often vary considerably in their ability to produce fruit. The mere position of a tree will often give it a decided advantage over its neighbors. Some varieties of trees respond more readily to thinning than others of the same species.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, AUGUST 26, 1905.

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The Week.

Thunder and lightning are not generally included in the Eastern shipments from California, but, according to the Weather Bureau, there was such a movement of aerial merchandise early this week from the extreme northerly districts of California, and that the goods manifested increasing activity as they reached the Rocky mountain region. Eastern readers are assured that California has not much of this article for export; in fact, atmospheric electric displays are so scant in California that there is not enough to use for educational purposes. We cannot teach our children to overcome fear of them, as we ourselves learned to be fearless, because of this frequency. As showers have touched the distant parts of the State, speculation about early rains is naturally beginning. One delight of the long dry season is the ending of it, and all who do not have late products still afield are ready enough for a good September rain. Still, it should be remembered that early rains, aside from the momentary refreshment of them, are not desirable and should not be yearned for. It is better to have the grapes and late tree fruits gathered dry than wet, and the same is true of the standing hay which the dry grasses furnish. Still, it is always well to prepare by getting finished things under cover and thus minimize the injury which early rains can accomplish.

Remember the State Fair, which will open on the new grounds at Sacramento on September 2 and close with a grand Admission Day celebration on September 9. Preparations are well advanced and everything will be ready for a brisk opening. Cattle displays from all over the State will be numerous and our breeders have secured much fine stock by recent liberal purchases to add to the prize-takers which they have in longer ownership. There will also be fine exhibits from outside of the State. It will be an unusual chance to see fine animals. There will also be grand displays of field and fruit products, for the county displays by the Native Sons are being generously provided for by this organization and by the county governments in many cases. A long list of competing counties has been made up. There will also be special cereal displays, drawn out by the wide interest in cereal improvement. In short, though the Fair is condensed into a single week, there will be a great deal of it and one can see more and enjoy more in less time. This will be one of the compensations for condensation.

Spot wheat is unchanged and the export wheat trade of the coast this year is rather expected to go to the northern ports where the main product is. Local futures are rather lower because of the imminence of these northern supplies. Barley is unchanged except that bright feed is stronger, but little offering, and the immediate prospect is good. Corn, rye and oats are also firm and in moderate supply. Beans have been bought freely and not many are left. Bran and middlings are scarce and high. Hay receipts are falling off rapidly and more of it is good; prices are maintained, though the visible supply here is larger. Meats are weak and prices lower. Butter is firm and values hold well. Cheese takes an advance, and eggs are firmer, if strictly choice fresh, but prices are the same. Poultry also sells well, although supplies have increased. Potatoes have picked up, owing to out-shipments to the North and to Australia, which is a new movement for this season, and the demand unmeasured. It is good while it lasts, though. Onions are also going to Australia and are firmer. Citrus fruits are active, but prices about the same Deciduous fruits have also sold well in large quantity. Dried fruits are also strong at recently noted advances. Nuts continue in good shape. Honey is still depressed but holders are confident, believing the anticipations of a large product unwarranted. Hops are unchanged and the crop still in dispute. Wool is quiet, and nothing doing here to fix prices.

We hope the county boards of supervisors will co-operate with Mr. Albert Lindley, the secretary of the State Board of Agriculture, in his efforts to carry out the law concerning agricultural statistics passed by the last Legislature. We believe that such statistics should be gathered by experts under the direct initiative of the State, and not by the imperfect machinery likely to be set in motion by this law; and yet, this method should be faithfully tried and the supervisors do the very best they can with it.

The pear blight undertaking has been energetically pushed all summer by Professor Smith and his corps of assistants and some very promising results have been attained. Professor Waite is in California again to take a look at the situation and to push his warfare against the hold-over blight. The price of pears this year justifies much effort and to plant clean trees in places not yet reached by the blight is a good venture.

We are glad that San Jose has at last secured the Weather Bureau for which she has so long contended. We shall now see what advantage the southern end of the bay district really has in cloud affairs. The announcement is made that the station office in the Dougherty building will be connected by telephone, so that growers can communicate directly with the station, and weather signals will be hoisted on the flagstaff of the building every day. The station will be of incalculable value to fruit growers in the matter of predicting sudden changes in the weather, frosts, rains, etc., and producing interests in the district certainly justify such attention from the Government.

It really looks as though the trees in the infested districts would soon either be saved or killed, and the material to spread the disease will be notably lessened. California cannot afford to give up the Bartlett pear and does not propose to do so.

Speaking about the large supply of wheat in the northern States of the coast, as we have done above, makes very interesting the announcement that the Great Northern Railroad has announced a sweeping reduction in grain rates throughout its eastern territory extending to the boundary of Montana. Three years ago the road made important reductions in the western section. The new rates, it is claimed, will add millions to the potential resources of the farmers of the Northwest. If the reduction is extended to the western division there will be a war between rail and ship which will be interesting to watch.

Mr. John Isaac, secretary of the Horticultural Commission, has issued a very interesting report upon his Mexican journey to examine the orange worm (Trypeta ludens) and the information should be in the hands of all orange growers. Mr. Isaac found that the pest was very widely distributed throughout tropical Mexico. Extensive operations are being carried on by the Government and a force of men are continually at work trying various experiments to destroy the pest. California can not take any chances on its introduction to this State.

QUERIES AND REPLIES.

Land for Alfalfa.

To the Editor:—Location, soil and price being attractive, is it ever advisable to purchase land for alfalfa growing infested with Bermuda grass or morning glory? Is it ever advisable to purchase land for alfalfa growing, with irrigation, with hardpan within 10 feet of the surface? If so, how near is safe in sandy soil? How near in adobe soil? What character of soil do you advise for alfalfa growing? Can alfalfa be successfully started in the fall with irrigation? When is the best time?—Intending Buyer, San Francisco.

As for Bermuda grass and alfalfa, the combination has some good points as shown by Mr. Dore on page 101 of the Pacific Rural Press of August 12. As for morning glory and alfalfa, we believe a good stand of alfalfa, well irrigated, will take care of its own morning glory. Who doubts it? Hardpan 10 feet deep may be counted out unless you expect the alfalfa to do its own pumping from below it; with proper irrigation you can get good profitable alfalfa with hardpan half as deep. Alfalfa on true adobe is not likely to be long lived; the best soil for it is a deep, free loam, rather light than heavy. Yes; alfalfa can be started in the fall except in the frostiest places. Irrigate well, plow deeply and harrow thoroughly. The seed ought to start and make a good stand without being "irrigated up."

Walnut Growing.

To the Editor:—Will you inform me if walnuts grafted on California black walnuts will bear sooner than seedlings and how much sooner? Can the grafted trees be planted closer together than the seedlings? What time is best to plant?—Subscriber, Hollister.

Yes; any tree grafted with a scion from a bearing tree will, as a rule, bear sooner than a seedling, although some seedling walnuts are very precocious and bear early—even in the nursery rows. The answer depends upon the variety of walnut and whether its ancestry has been selected for early fruiting. The French varieties have been developed that way and bear in about half the time, on the average, that the common California seedling does. The earlier a tree bears, the less will be its size, because a part of its energy goes to fruit and not to wood growth. Plant walnuts just as you do other deciduous fruit trees—any time after the leaves fall and the soil is deeply moistened by rains or irrigation. New rooting begins at once and before the top is active.

Place for Poultry.

To the Editor:—I am thinking of trying the poultry business. Would like to make two specialties: Fat broilers or capons for swell restaurants and fresh eggs for private trade. Have thought of the Mission or Oakland, but have been told that Oakland is too harsh, damp and foggy to do well. Would like your opinion as to that in comparison with other poultry situations. Does the trash and filth, if I may use the words, affect the eggs or meat? Would there be any perceptible difference if all such stuff were rigidly excluded?—Beginner, San Joaquin county.

The Mission has the reputation of being the most salubrious part of San Francisco; but the Oakland side of the bay claims to be more salubrious than any part of San Francisco during July and August, when the ocean winds and fogs are on. At other times of the year both places are as delightful as men or hens could ask. But why do you wish to carry your hen industry right up into a town? We can see no advantage and many ills in it. You can get more land and fresh air and opportunity for cleanliness in the rural districts, and it is easy enough to get your product to your customers from any part of the bay district. As for cleanliness in poultry product, it undoubtedly improves flavor, and, not only that, it makes it possible for you to have any product at all. Filth will very soon drive one out of the poultry business.

Forage for the Mojave District.

To the Editor:—Will you kindly advise me as to the soiling crop best adapted for this climate and this time of year, to feed to cows and hogs? Do you recommend Soja beans, and would they do well in the canyons where we can irrigate at liberty? The elevation is 2500 and the soil sandy?—Farmer, Acton.

Soy beans will do well during the summer with a small amount of irrigation. Cow peas will also succeed without irrigation, although they are more

liable to injury from dry, hot winds. So long as you have a sandy soil, with irrigation water in abundance, there is nothing that can compare with alfalfa, as an irrigated crop, and nothing better than sorghum with a minimum amount of water.

Fine Peaches From Shasta County.

TO THE EDITOR:—For purposes of inspection, comparison and consumption, I send by express prepaid one box of peaches, containing several specimens of each of ten varieties that we are now picking and which ripen about in the order named: Elberta, Worth, Captain Ede, Late Crawford, Gold Drop, Marshall, Muir, Susquehanna, Chair's Choice, Cobler—named according to nurserymen's labels. If any are not true to name, please say which. When tree and fruit are seen together it is easy to see that they are all different, except Elberta and Worth, which appear to be identical. August 2 we picked the last of a large crop of Early Crawfords—in fact, all varieties are a good crop.—S. HILTON, Olinda, Shasta county.

We are very thankful to see all these varieties from a single locality and to know the order of their ripening. They certainly constitute a very fine collection of midseason yellow freestone varieties, and must enable Mr. Hilton to do a good local trade in his county, which has so many consumers interested mining enterprises. We agree with him as to the striking similarity of the Elberta and Worth, and the specimens seem to be the former variety all right. We do not know the Worth and, therefore, are not qualified to suggest that he was furnished two names and one variety. If anyone can compare the Worth with the Elberta, we shall be edified. Mr. Hilton is a very intelligent grower and knows how to secure good fruit.

Subcutaneous Injury to Pears.

TO THE EDITOR:—I have sent you a box of large Bartlett pears. On the top tier there are a number of pears with the word "affected" written on the papers in which they are wrapped. These pears are affected with a trouble new to me. Except in the worst cases it is not very noticeable from the outside, but they have a pithy or woody growth extending in some instances quite deep into the flesh of the pear. What is the trouble, and is there a remedy?—GROWER, Yuba county.

The pears have been thoroughly looked into for plant disease and insect injury and no disease is now present. The injury has apparently come from some mechanical trouble early in the life of the fruit. This may have been caused by insect attack at that time; for instance, the presence of aphis on the small fruit would have caused the tissue under the skin to develop in this unusual way for the purpose of healing injury. There seems to be nothing to suggest except to watch the tree and fruit earlier in the season next year and to immediately destroy any insect life then seen to be present. The same effect is produced by the San Jose scale, but we find none of them.

Turkey Growing.

TO THE EDITOR:—Will some of your many readers write an instructive article on turkey raising. I have begun the business on a small scale with little turkeys bought from my neighbor, and am struggling hard to "keep 'em" alive, but I have no knowledge of the subject whatever.—BEGINNER, Santa Cruz.

We should like to have turkey growing discussed. The accepted doctrine is that turkeys can take only a measure of cultivation and must be kept somewhat near to nature. Life in the open seems to suit them from the egg up, and work without proper range is usually unprofitable. The largest supplies of turkeys comes from the plains of the interior valleys and the open hill country of Lake county. Who will write about them?

Woolly Aphis and Tobacco.

TO THE EDITOR:—The apple trees at the Good Templars' Home for Orphans at Vallejo were badly damaged by the woolly aphis. Many trees died and others were in a fair way to do so. That was three years ago, and I read everything I could find on the subject in order to find a remedy. Tobacco was suggested, and two years ago I purchased about half a ton of stems and put from twelve to fifteen pounds around the roots near the body of each tree. First I dug down to the finer roots for about a foot and a half from the tree and all around it. Then I placed the tobacco stems in the excavation and covered them up with dirt. The trees thus treated are now almost entirely free from woolly aphis and are making a good growth and bearing well. The woolly aphis have disappeared from the tops of the trees so treated and the trees appear to be unaffected by the woolly aphis this year. Tobacco seems to be an adequate remedy.—R. THOMPSON, Vallejo.

This is good testimony. We have often prescribed this treatment and are glad to hear of its distinctive success. We have accomplished the same result by applying about five gallons of fresh wood ashes around the base of the tree, at the beginning of the rainy season—the rain carrying the lye down to the insects clustered at the root crown. If they can be killed at this point their existence on the outer roots does less injury.

Taffy, Lippia, Salt and Logans.

TO THE EDITOR:—Many are the things I am learning from your column, "Queries and Replies," and I sometimes wish they were occupying more space in your paper, for many—very many—are the things a beginner has to know that he does not know. Perhaps it will please you to know that twenty-eight months ago I started a little ranch entirely according to your book, "California Fruits, and How to Grow Them," and to-day my six acres of vineyard, cherries, etc., are the admiration of my neighbors. Now, kindly inform me of a grass that would grow low, without irrigation, and in rather shallow, sandy ground. I have several slopes around the house that are badly overgrown with weeds, and these are the places I wish to cover with some perennial—low growth—and if you know of something that would flower, so much the better. Also, what proportion of salt to water shall I use to keep down, or entirely out, weeds on my road. The leaves of my loganberries are not falling yet, maybe because they got much water, but wouldn't this month be proper to cut down the old canes and trim to proper size the new ones? Is it the cutting of the old or new wood that you pot for propagation?—NEW RANCHER, Los Gatos.

You are a treasure to say such sweet things. We would by all means put lippia on the banks you speak of. Get the roots of the nurserymen and put them in a foot or two apart, and they will close up in about a year and give you a green bank, with millions of pretty little flowers. It is the greatest thing for dry banks we ever saw, and ought to be used all over the State. A brine which will float an egg ought to kill your weeds at once. Loganberry plants can be put into shape this month all right. The old wood can be used for cuttings, but plants are generally made from the tips, which will root of themselves if you let them get to the ground.

Large Dutch Windmill Wanted.

TO THE EDITOR:—I should like very much to obtain plans and specifications for large Dutch windmill. Can you refer me to any one likely to have such information?—READER, Nordhoff.

We can at the moment think of nothing beyond the pictures given in books and magazine articles about Holland, and as we remember they did not descend to specifications. Probably you could get references by applying to Mr. F. H. Newell, chief of Reclamation Service of the Geological Survey at Washington, D. C. Several pamphlets on windmills have been published under his supervision, but though they naturally describe the more effective and less expensive American models, he must be informed upon the more picturesque Dutch affairs. There is a fine specimen of a Dutch mill in the Golden Gate Park in this city, and possibly a letter to Mr. John McLaren, superintendent, might secure the information you want.

Vines for Northern Exposure.

TO THE EDITOR:—What kind of vines shall I plant on the north side of the house? We have a porch 50 or 60 feet long and locust trees shade the lawn. Violets and ferns are growing nicely in the beds, but I want vines to take off the barren look of the bare posts. The ground is frozen through the winter. Will Virginia creeper or Boston ivy or wistaria do well? I want something hardy.—A CONSTANT READER, Siskiyou county.

The vines you mention are hardy enough for your conditions. The Boston ivy is better on a flat wall than on a post. You can also use clematis, honeysuckle, Eastern grape vines and many others.

Barnyard Grass.

TO THE EDITOR:—I send a grass which is growing in ditches. Some call it Johnson grass, but I say no. What is its proper name?—GROWER, Rosedale.

It is Panicum crusgalli, commonly called "barnyard grass." It is not "Johnson grass," and is not objectionable, as that grass is, although its feeding value is not rated very high.

Roots for Apricots.

TO THE EDITOR:—Do apricots do well on myrobolan roots? Or do they do better on their own roots?—ENQUIRER, Stanislaus county.

Apricots will do fairly well on myrobolan roots, but they are not grown upon them to any extent in California because they do better on their own roots or on the peach root, which is chiefly used for them.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 21, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director

Sacramento Valley.

Clear and warm weather prevailed most of the week. A thunderstorm with light rain occurred in Sacramento and vicinity Sunday evening. Deciduous fruit harvest is progressing rapidly and the crop is being marketed, canned and dried. Shipments of new dried fruit have commenced. Peaches are mostly of poor quality and the yield is fair. Prunes are ripening and picking is in progress. Pears are nearly all gathered; the fruit is of good quality and the yield fair. Grape picking and shipping are progressing; there will be a good crop, though some reports state that considerable damage has been done by heat. Almonds are ripening and there will be a fair crop. Citrus fruits are well advanced and in good condition. Hops, corn and beans are making satisfactory growth. The grain and hay crops are nearly all disposed of. Dry feed is still plentiful.

Coast and Bay Sections.

With the exception of morning fogs in the coast districts, the weather was clear during the week and the temperature nearly normal. The fogs were beneficial to beans, but retarded fruit drying. Good progress was made in securing the fruit and grape crops and large shipments were made to markets. Prunes are of good size, but in some sections the yield will be lighter than expected. Fair crops of peaches, pears and plums are being gathered. Grapes in some places were considerably injured by heat in July, but the outlook at present is good for nearly an average crop and in places the yield will be heavy. Almonds and walnuts give promise of large crops. Apples and pears have been seriously damaged by codlin moth. Cut worms are injuring beets and peas in Humboldt county. Hops are making good growth. The grain crop is nearly all harvested and hay baling is completed.

San Joaquin Valley.

The weather during the past week was clear and warm and favorable for ripening and drying fruit. Deciduous fruits are ripening fast and good progress is being made in canning and drying the crop. Peaches and table grapes are being shipped freely to Eastern markets, watermelons to local markets and potatoes to Texas and Southern points. Almond harvest has commenced; the crop is larger than for several years and the quality is good. Raisin grapes are maturing rapidly and show a large percentage of sugar; picking has commenced in some localities and will be general in about two weeks. Wine grapes are coloring and the wineries will soon begin operations. A good fourth crop of alfalfa is being cut in some places. Irrigating water is plentiful and stock are healthy and in good condition.

Southern California.

Cool and foggy weather continued in the coast districts and clear, warm weather in the interior. Grapes are ripening and give indications of a large yield. Walnuts are filling well, but the crop will be lighter than last season's. Nectarines are yielding well. Apricots are below average. Other deciduous fruits are in fair condition and maturing slowly. Citrus fruits continue in excellent condition and prospects are good for a very large yield. Grain thrashing is not yet completed; the crop is above average in many places, but the quality is not as good as expected. The hay crop is large and the quality excellent. Sugar beet harvest is progressing. Beans are in good condition.

EUREKA SUMMARY.—Foggy mornings, but past week generally favorable. Worms doing much damage to vegetables in the Arcata bottom. Peaches are poor. Apples about an average yield; quality of early varieties fair. Harvesting oats rapidly.

LOS ANGELES SUMMARY.—Beans doing well under favorable weather conditions. Thrashing continues; yield good. Some shipments made. Mountain pasture excellent. Meadow hay being cut. Some thunderstorms in the mountains.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 23, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.02	.75	.23	64	50
Red Bluff	.00	.00	.11	.04	106	56
Sacramento	T	T	.01	T	98	52
San Francisco	.00	T	.03	.02	66	52
Fresno	.00	.00	.00	.02	104	60
Independence	T	T	.07	.11	96	62
San Luis Obispo	.00	.03	.06	.03	74	54
Los Angeles	.00	.00	17	.05	80	56
San Diego	.00	.16	T	.07	70	62
Yuma	.00	T	.73	.43	102	76

THE VINEYARD.

Growing Resistant Vines in the Interior Valley.

By Mr. George C. Roeding of Fresno, at the Annual Meeting of the California Viticultural Club at St. Helena.

Formerly establishing a vineyard in districts where vines had been planted for a number of years was never regarded as a difficult problem. A grower, of course, had to decide what sorts his land was best adapted to, and then purchased the roots from a nurseryman. In many instances where vines could not be obtained, cuttings were planted direct in the vineyards, and if the soil was in good tilth and the season favorable, a good stand of vines was secured. As a rule, it has been found to be far cheaper, and vines of a more uniform growth are obtained, by planting roots at the outset.

New problems have risen in recent years in the vine growing sections of California, and also in nearly all countries where grapes have been grown to any extent. One of the most dreaded pests is phylloxera. Wherever this insect has made its advent, it has only been a question of time when the viniferas haved died and new vineyards have been re-established by grafting on American resistant roots. A vineyard on resistant roots requires a much heavier outlay. The grafted vines, to begin with, cost four to five times as much, and the suckering and cutting off the roots, which start from the vinifera scion for a number of years, are matters which must be religiously attended to, all of which adds to the expense.

Resistant Stocks.—When it is borne in mind that a vinifera vineyard, in an infested district, will probably die just as it comes into bearing, it certainly seems that the only intelligent plan to follow is to plant grafted vines. The first question to be considered is, what variety of resistant should be used in starting a young vineyard. There is much to be learned on this subject, and growers will watch with interest the experimental work in the test vineyards which are being started in many districts of the State by the University of California and the United States Department of Agriculture. The three most popular varieties of resistants in California, thus far, have been Rupestris St. George, Riparia Gloire de Montpellier and Lenoir.

Large Experiments.—In connection with my nursery business I have planted a vineyard of 250 acres, all of which is on resistant roots. The first vineyard of 15 acres planted in 1901 is evenly divided between Thompson Seedless and Emperor on Lenoir. In 1903 the next vineyard of 75 acres was planted to Thompson Seedless, mostly on St. George, while a few acres were on Lenoir, Solonis and Riparia Gloire de Montpellier. The Riparia were planted where the conditions for their development were of the most favorable nature, the land being quite moist throughout the season and the hardpan from 4 to 6 feet from the surface. Still, they have never done well, while the Rupestris, immediately adjoining, present a thrifty and luxuriant appearance. Fifty acres more were planted in 1904, two-thirds to Thompson Seedless, and one-sixth of the acreage was divided up between Emperor and Muscat, part of each of the latter being on Riparia. The final planting was made this season, the largest acreage being again devoted to Thompson Seedless and Emperor, on St. George, Riparia Gloire de Montpellier and Riparia x Rupestris 3309. Among the other varieties planted were Malaga on 3306 and 3309, Flame Tokay on St. George, Feher Zagos, Aramon, Mission and Dattier de Beyreuth on St. George. The great variety of soils, the varying water table, due to certain portions being far above the water level in the irrigating ditches, while others are far below and under a drainage system, will cause this vineyard to be used as a criterion in giving a practical demonstration of the varieties best suited to the San Joaquin valley in similar soils.

Grafting.—When we first engaged in this special line of work considerable difficulty was experienced in securing wood true to name and cuttings large enough for bench grafting were scarce. All the small cuttings were planted in nursery rows and grafted the following season on the rooted vines direct, without digging them up. This method is termed stock grafting. The first year this grafting was done the scions were wrapped with raffia, the same being soaked in a bluestone solution. The results were by no means satisfactory. In many instances the raffia failed to rot in time, and it became imbedded in the wood, and we were compelled to pick it out with the pointed end of a knife. This was not only expensive work, but also caused lacerations, and in many cases the scions became disturbed and died.

Great care was taken to have the scion and cutting of the same size, a matter which is no longer considered vital to success. It is, no doubt, better to have them the same size, for it insures a stronger union to begin with. In stock grafting it is not practicable to have both of the same size, for the rooted vine will vary in caliper from $\frac{3}{8}$ to $\frac{3}{4}$ inch. Our unions are far better and stronger than any grafted stocks received from France, so we feel warranted in making this conclusive statement. The next season raffia was discarded entirely, and nothing was used for tying either stock or bench grafts. The top growth was exceptionally good by this method. Still, many of the vines when dug were found with imperfect unions, the lip of the scion being forced away from the stock when callousing, which failed afterwards, in many cases, to reunite.

Cuttings and Scions.—This season we made several hundred thousand bench and stock grafts, and our percentage of loss has been comparatively light. Cuttings of vinifera are made during the months of January and February, and trenches are dug for their reception 14 inches deep and 3 feet wide. The cuttings are tied in bundles of 200 and they are heeled in a sandy loam, with the butt end up. They are completely covered over with soil, which is tramped around them as closely as possible to exclude the air. The resistant cuttings are made at the same time, but in 14-inch lengths, and are heeled in, in the same manner as the vinifera. All the large cuttings for bench grafting are tied by themselves and are kept separate from the small ones to be used for lining out in nursery rows. Should the buds of the vinifera start to swell too much, they are taken out, aired for a few days in a shady place and are then packed in dry sawdust.

The Operation of Grafting.—Before grafting, the scions and cuttings are allowed to stand for twenty-four hours, butts down in a ditch or trough, the water extending half way up the cuttings. All of the buds are cut out of the resistant cuttings before the grafter takes them in hand, a strong knife or shear being used for this purpose. Scions for both stock and bench grafting are cut with two eyes. The ordinary whip graft is employed for grafting bench as well as stock grafts, except when the stock or cutting is unusually large, when a wedge or cleft graft is used. The angular cut on the scion and cutting are both made rather long, as is also the incision to make the tongue. The cut making the tongue should start about one-eighth of an inch from the sharp end of the cutting. If cutting and scion are not of the same size, care should be taken to have at least one side fit smoothly.

From the grafter the cuttings are passed to the man who does the tying. For raffia, Dexter twine No. 30 was substituted. This is the same twine which is used for tying apple grafts. This twine has been previously prepared by soaking the balls for five minutes in melted grafting wax, composed as follows: Eight pounds of rosin, three pounds of beeswax and two pints of raw linseed oil. One ball of this twine will wrap 5000 cuttings. The work of wrapping is done much more quickly than with raffia. The balls are placed on a small reel and the twine is wound off as it is required. It is so weak that it is easily broken by a slight twitch between the fingers. Its waxy condition makes it quite adhesive and it sticks to the wood without tying. It does not seem credible that it would hold so tenaciously; nevertheless, if an attempt is made to pull the cutting and scion apart, it s very difficult to do so. The great advantage of the twine is that it is strong enough to hold the scion and cutting together while the callous is forming, and after the cutting is planted in nursery row it remains until the expanding of the growing parts causes it to rot and fall off. Its superiority over raffia for conditions existing in Fresno county can not be questioned for one moment.

Callousing Bed.—The callous bed is made by digging a shallow trench 3 inches deep, lined on each side with 12-inch boards held in place by pegs driven on the outside. This bed is filled with river sand and the cuttings are placed at a slight angle, butts down, and are completely covered over, the ends of the scion being at least 3 inches under the sand. If the sand is not reasonably moist, it should be sprinkled. It is essential to insure a good callous to keep the sand moist. Panels of shakes should be made to cover each bed as a protection from both sun and rain. Sand is a great absorber of heat as well as moisture, and too much of either is sure to produce bad results. As soon as the callous is well developed and the buds of the scion have commenced to swell, the cuttings should be planted out. As a rule, a callous will also appear at the base of the cutting with small white rootlets radiating from it.

The Nursery.—The nursery rows are made 4 feet apart and the cuttings are set 2 to 3 inches apart. A dead furrow is first plowed out and in this a subsoiler drawn by a large team of horses is run once each way to a depth of 16 inches. A rope is next stretched and the cuttings are set along the line. The loose condition of the soil permits the workman to shove the cuttings into the ground easily. From the time the cuttings are taken from the callous bed until set in the nursery rows, they should be covered up, and exposed as little as possible. As soon as the cuttings are in place, the earth is hilled around them, the top of the scion being at least 2 to 3 inches from the surface. Water is now run along the row on each side of the hill to settle the earth and close up the air interstices. Except to loosen up the top soil in case it should show a tendency to bake, the cuttings should not be molested. These vines should be irrigated during the summer season when necessary, but care should be taken not to flood the top soil covering the scions.

In August, the soil is plowed away first and that which remains is removed with trowels. By this time the callous will be fairly well hardened up, and in removing any suckers starting from the cutting and the roots from the scion, there is not much danger if ordinary cars are used in the graft breaking off. A day or two before this root pruning takes place, at least one-half of the growth of the vine should be cut off. If this is not done, should many roots have started from the scion, the vine will wilt badly and it might even die, the roots which have started from the resistant not having developed sufficiently to keep it in active growth. After a day's exposure the soil is again cultivated back so as to cover the union of the scion and stock and this is followed by an irrigation. It is necessary to remove the soil again in October, for roots will in many cases start out again from the scion. This additional work is probably not necessary in cooler climates, but where the atmosphere is dry and hot, we have found it advisable to cover the unions.

Stock Grafting.—In stock grafting, the dirt is first plowed away from the vines, and it is then cleaned up with hoes. The tops of the vines are cut off just below the crown. Whip grafts are used where the stock is of medium size, and the larger vines are wedge or cleft grafted. It is out of the question in stock grafting to have the scion and subject the same size. Magnificent vines are obtained by this method, but the expense of growing them, as can readily be inferred, is very much heavier. The scions are tied to the stock with waxed twine, but this part of the work is obviously very much slower than with bench grafts.

As soon as the scions are set, the dirt is hilled around them, and the rows are irrigated in the same manner as bench grafted cuttings. Stock grafting commences with us in the interior valley about the middle of February and the work should be completed before the vines take on their new growth in the spring. Numerous suckers start out from the rooted cutting, and these should be pulled out from time to time, otherwise they will smother out the scion. The soil covering the scion is not taken away until August. The method of root pruning and topping the vines is the same as is followed in handling the bench grafted cuttings. The growth on these vines must be cut away at least four times during the season, otherwise it becomes so heavy that the scion will break off at the union.

Unskilled Grafters.—Before going further, I wish to reiterate the statement which I have often made verbally, that it does not require scientific grafters to do this work successfully. One or two experienced men, if they understand the principles of grafting, can in a very short time break in a crew to do this work. We had a crew of forty men engaged in this work, one-half of them grafting and the others tying, hoeing the soil away from the vines and covering them up afterwards. The men grafting were mostly "Japs," and not over four of them had ever grafted before.

Vineyard Planting.—In planting our vineyard, we have usually loosened up the soil with a subsoiler to a depth of 24 inches. A phenomenal growth has been the result, and even in the higher elevations where the soil was sandy the vines have grown thriftily without receiving any irrigation. The vines are set so that the union of the scion and stock is about level with the top of the ground, and the dirt is then hilled around them, leaving one bud exposed. Before planting, all lateral roots on the cutting are taken off, and the roots radiating from the base of the cutting are shortened in to 3 inches. The top growth is shortened in, leaving one spur with two or three buds.

After the vineyard is set, redwood stakes $1\frac{1}{2}$ inches square by 2 feet long are driven into the ground 1 foot deep on the south side of each vine. Under favorable conditions, vines will send out six canes or more, which will make a growth of from 2 to 8 feet the first season, and some of the canes will caliper almost 1 inch. About the middle of July the soil is drawn away from the vines, the suckers from the resistants are cut off, and the roots from the scion are also removed. A shallow basin is made below the union and this prevents any new roots from starting. The entire growth of the vine is tied to the stake, the first tie being made within a few inches of the ground, and the other rope is tied close to the top of the stake. At the same time, the top growth is shortened in, which causes the shoots to become stocky. The following winter all the canes except the straightest and strongest are removed, and this one is cut back to 10 inches from the ground, for the purpose of forming the crown of the vine.

Budding Vines.—Vines in which the scion has failed to grow, and where the resistant has sent out a lot of suckers, are thinned out, leaving from two to three canes. As soon as the wood in the cane becomes somewhat hardened up, usually in the early part of August, from one to two buds are inserted in each cane. The buds are held in place by five-ply cotton twine, particular pains being taken to see that the transverse cut is fully covered. The ordinary shield method of budding is practiced, the same as for budding fruit trees, with the exception that

the bud is cut rather thick—or "fat", as it is termed by the trade.

In about three weeks the strings should be cut off, or as soon as they become partially imbedded in the wood. The buds will remain dormant until the following spring. Not more than one bud should be permitted to grow on a cane, and four weeks after they have started the strongest bud on the heaviest cane should be selected and the other canes should be cut off. As soon as the bud has made a growth of 14 inches one-half of its growth should be cut away, and at the same time the shoot should be tied to a stake. To begin with, a few of the suckers should be allowed to grow to draw up the sap. In stubbing the first time the cane should be cut off at least 2 inches above the bud. As soon as the bud has developed sufficiently it is stubbed again, using strong, well sharpened pruning shears. The cut should start at the transverse cut and slope downward directly opposite the bud. Within a short time the bark will cover this cut. It will do it more quickly where the cut is made slanting than when straight across.

Any experienced grower can not but help appreciate the great advantage of budding the misses the first season, rather than depend on grafting the following spring. We have invariably succeeded in getting 90% of our buds—and even more—to grow. French authorities, I believe, never considered it practical to bud except with soft, herbaceous wood, and in our first attempts to bud we used this soft wood, but hardly a bud stuck. To meet with the best success, both the budding wood and the stock should be lignified, and, above all things, the vine must be in thrifty condition, the bark slipping readily, or the buds will not take. Permit me to say here that we have not been very successful in budding Riparia, and the only reason we can ascribe for this is that the bark is extremely thin. Vines in which the buds have failed to take can be grafted the following season.

Advantages of Budding.—The advantages claimed for budding are as follows: A vine can be budded several times during the season, if the buds fail to take the first time. If the buds fail to grow, grafting may be resorted to the following winter. There is less trouble with the suckers, and one point above all others is that there is less likelihood of the buds being knocked out as compared with grafted vines. I have always opposed the planting of resistants in the vineyard and grafting them over the following season. It is practical on a limited scale, and now even more so than before, since budding has been so successful. I would recommend the vineyardist, if he prefers to grow his own stock, to plant his cuttings in nursery form first, for in the long run it pays. It is claimed that good unions cannot be obtained in Rupestris after two years. This is not so with budding, for if the buds do not take the first season the suckers can be budded again the following year, until the vine is finally worked over. It is a well-known fact that it is very difficult to start a young vine in an old vineyard, but this rule does not apply to budding the canes on an old root.

Notes on the California Vine Disease.

Prepared by Newton B. Pierce, pathologist in charge of the Pacific Coast Laboratory and Plant Improvement Gardens at Santa Ana, for the meeting of the Viticultural Club at St. Helena.

Few Vitis vinifera varieties of grapes are able to withstand the epidemic development of the California vine disease. The hardiest of the European types usually die of the disease, sooner or later, when situated in the midst of an infected district. The exceptions to these statements are few, and in most cases are more apparent than real—i. e., a vine or variety showing much hardiness in one situation may clearly show its susceptibility under different circumstances.

Among the whole list of cultivated grape varieties thus far studied when subjected to the influence of this disease in its epidemic form, the Lenoir grape is most resistant. It is so hardy in the face of the malady that it forms, in conjunction with its blood relatives, a class by itself. The work of the United States Department of Agriculture has demonstrated this beyond a reasonable doubt. Vineyards eight, sixteen and twenty-three years old of the Lenoir grape are now bearing eight tons of fruit to the acre in the midst of the earliest infected district in the State, and where the surrounding vineyards, tens of thousands acres in extent, have long since perished.

This hardiness of the Lenoir has been observed since the first studies of the disease by the writer—in 1889—and its resistance, then noticed in the infected center of southern California, has since been demonstrated in the more recently infected districts of the Sacramento and Santa Clara valleys. While other phases of this difficult problem have not been lost sight of, the hardiness of the Lenoir grape stands forth to-day as the most encouraging fact secured, and this fact has been made and will be continued as a leading center for the Department investigations.

Hundreds of acres of grafting experiments with Lenoir roots have been instituted, largely through the aid of growers, and these experiments have shown that the Lenoir root will materially prolong the life of a tender top variety, though not making such top immune. The reason for the lack of perfect immunity in the top is evident from the fact that the California vine disease affects all parts of a vine, not simply the root system, as with phylloxera. In grafting a tender top on a Lenoir root the vineyardist produces, approximately, a plant representing in resistance the sum of the percentage of hardiness of the root and top varieties divided by two—or practically one-half the total percentage of resistance of the two varieties united in the new plant as determined when they are growing on their own roots. It is, hence, apparent that the top to be used in all grafting work looking to the extending of the life of the vine in the presence of this disease should be of that variety having the highest degree of resistance to the disease, and which possesses the desired qualities of fruit and yield.

In view of the scarcity of such hardy and otherwise satisfactory types, the Department recognized the need for a greater number and variety of grapes possessing the requisite qualities for top graft. Hence the writer has been hybridizing—and will continue to hybridize—the Lenoir with all classes of wine, table and other varieties and species of grapes. The object of this work is to develop, by breeding, an entirely new family of grape varieties, each of which will inherit hardiness through direct blood relationship with the Lenoir. Hundreds of these hybrids are now growing at the Plant Improvement Gardens of the Department at Santa Ana, Cal., and this line of work is being expanded as rapidly as time, means and the maturing of seedling plants and grafts will permit.

THE FIELD.

Corn Growing in the Sacramento Valley.

We have mildly protested against the declaration that the Sacramento valley would be a great corn country, though admitting that there were some corn lands in the district and hoping that all proposed experiments should be made. Mr. W. A. Beard, of the Sacramento Valley Development Association, who has taken much interest in the proposition, gives the Sacramento Union his opinion of the present aspect of the question.

An Expert Corn Man.—Mr. Beard accompanied Mr. C. L. Hartley of the United States Department of Agriculture on a tour of inspection through the corn fields along the Feather river in Yuba, Sutter and Butte counties. Mr. Hartley is a corn expert, author of a number of corn bulletins issued by the department, and his mission in the Sacramento valley is to study corn culture here, with a view to directing future experiments which may be conducted by the department.

A Corn Committee.—The visit of Mr. Hartley is due to the efforts of the Sacramento Valley Development Association, which took up the matter of corn culture early in the present year, appointing a special corn committee consisting of Dr. R. M. Green of Oroville, Senator Marshall Diggs of Sacramento, and W. H. Morrissey of Orland. The Department of Agriculture was asked to furnish seed for experimental corn culture, and did so, providing seed for seventy-three selected Sacramento valley farmers.

Mr. Hartley handled the matter for the department, but having no knowledge of conditions here affecting corn culture, was unable to judge what varieties were likely to do best here. In all nearly twenty varieties were sent, and after carefully inspecting the results Mr. Hartley will be able to better recommend varieties.

This is a Corn Country.—Mr. Beard, who has acted for the Association committee, believes the experimental work of the year has produced very valuable results. To a Union reporter he said: "If any one tells you this is not a corn country, just ask him to make a trip over the river bottom lands of the Sacramento valley between now and corn gathering time. Corn not only can be grown here, but it is grown to a very considerable extent, and over a wide range of country. At Central House, in Butte county, we saw a field of 200 acres. This was the largest single field, but we saw altogether many hundred acres, much of it of fine promise. Mr. Hartley remarked last evening that in every instance, so far as our inspection went, where the proper cultivation has been given the yield of corn will be large.

Not an Experiment on Lowlands.—"Corn culture is not an experiment on the lowlands. Corn was grown extensively years ago where now are orchards. There is need of special work, however, in developing varieties that will yield the best returns in these lands. Recent experiments in Iowa, Illinois and other corn States demonstrate the fact that the yield of corn can be vastly increased by systematic and intelligent seed selection. Corn is peculiarly susceptible to improvement by this simple means, but to secure the best results the work must be carried on by experts.

Of Seed Selection.—"It is noticeable that our farmers give very little attention to seed selection. Many do not cultivate sufficiently. We saw fairly good corn where the Johnson grass was thick and almost as high as the corn. Under these conditions good yields are reported and it is an assured fact that with proper seed from carefully developed varieties the growing of corn on river bottom lands in this State may be made very much more profitable.

Upland Corn Proposition.—"Upland corn is another proposition. We saw some fine corn growing on irrigated high land at Elk Grove. We saw some near Gridley which had suffered for water early in the season but which Mr. Hartley pronounced excellent, in view of the chance it had. Further experiment will be necessary to demonstrate the degree of success which may be attained in growing corn on a large scale on high land, although indications are that it may be successfully and profitably grown.

Separate Varieties on High Land.—"Mr. Hartley says successful corn culture on the high lands will require development of separate varieties for these lands. He considers the lowlands better adapted to corn culture. Mr. Hartley says further that varieties for these soils and this climate must be developed here. Corn is peculiarly susceptible to changes of location. A corn that does well in Kansas and becomes a record-breaking producer yields but an ordinary crop when transferred to Washington, and vice versa. Among the corns sent here is one that produced last year 107 bushels per acre. This seed came from the field that produced this enormous yield. It is not expected that it will do so well here, but some of it which we saw promises a splendid crop.

The Cereal Improvement Station.—"One of the most interesting places visited was the Cereal Improvement Station near Yuba City, where eighteen varieties have been planted on what is now dry land. Very few of these corns will amount to anything, but the experiment is interesting as showing those varieties best suited to grow on high land and without irrigation. I was especially interested in two or three dwarf varieties from Dakota, which are worthy of careful trial on summer fallowed land. One of these grows scarcely 3 feet high, will stand thick planting and apparently every stalk has an ear. Mr. Hartley told me this would stand planting very early and will fully mature within ninety days.

What Might Be Done.—"It occurred to me that this corn planting on summer fallowed land early in the spring would mature nicely before the dry season is far advanced. Pastured by hogs it would make a lot of pork with a very small outlay of money or labor, provided it proved as successful as the result at the Yuba City station, where it was planted late, would indicate.

Corn on the Bottom Lands.—"Mr. Hartley finds that corn varieties forwarded by him and planted on our river bottom lands have a tendency to grow taller than in their native homes. He says this should be discouraged and this extra exuberance manifested in the ear, which is the part that counts.

Pleased With the Interest Taken.—"Mr. Hartley expressed himself as very much pleased with the interest shown by the Sacramento valley farmers who are growing department corn, and I have no doubt he will be glad to co-operate with us in future efforts to build up the corn growing industry here From Marysville he has gone to Chico to inspect corn growing of the Plant Introduction Garden tract and some grown by farmers in that vicinity. He will also visit Red Bluff, Corning, Orland and Colusa before continuing north to Portland and the Northwest."

THE POULTRY YARD.

Seasonable Advice.

To the Editor:—The successful rearing of poultry is dependent upon many little details, and as the rearing of flocks of strong, vigorous birds is desirable among farmers, as well as with those who carry on the production of poultry as their sole business, a look at some of these small things as attended to by the specialist may be interesting to those who make the rearing of poultry a side issue of the general farm products.

Less than one-tenth of 1% of the farmers of the United States maintain flocks of pure-blooded fowls, and no doubt this small percentage rearing thoroughbreds is due in a great measure to the overlooking of the "little things."

The rearing of flocks of chickens that shall be uniform in color, size and general characteristics should be the aim of every one who keeps one dozen or one thousand fowls on the farm, and while this is most quickly and easily brought about by the introduction of pure blooded stock as a foundation, good results may be had by attention to one of these small things in the selection of the birds to be used as breeders the following season, which selection should be made as the young stock matures at this time, and particular attention be given them to insure a full and healthy growth.

As a first step in this direction, the flock of young-

sters should be rounded up before the cold weather comes on and the pullets separated from the males and given a run to themselves, where they will not be annoyed by the attentions of cockerels running at large. Warm, but not close, housing should be provided and such food given as shall encourage growth only, and not egg production, for while early laying may be encouraged among the balance of the flock destined for egg production, only those birds to be the spring breeders should be held back somewhat when inclined to lay, that they may come into the breeding season in full vigor, and not in low condition from constant laying through the winter months.

The selection of desirable females from a flock of common or mongrel hens is at best chance work, but a little study of the hens that are known to be good layers—and the women folks usually can tell some of these—will result in an increased egg yield, and constant selection from year to year will in a short time show marked improvement in the flock as a whole.

Among poultrymen the trap nest has made this selection of the best layers a simple matter, and with the mating of hens so selected with males from known layers the 200 eggs per year hen has come to be common among the best flock of fanciers of the country.

Utility being first and foremost, the eggs are the first consideration, and as uniformity in color is the next step it will be necessary to introduce the desired blood for this result, which can best be brought about by the introduction of a thoroughbred male of the kind that seems most desirable to the owner of the flock that is undergoing transformation.

Breeders of thoroughbred poultry have every season male birds that, while lacking in some minor point as exhibition stock, have all the necessary requirements for crossing to improve the flock of mongrels, and these can be bought at a small cost, usually from $2 and upward, from the yards of reputable breeders who reserve these for the purpose mentioned.

This is the cheap way of improving the flocks so common on many farms to-day, and would in many instances be considered extravagance, perhaps, by the head of the house, but the results would be gratifying, to say the least, and the added revenue would make it easier to make greater headway by the purchase of a small pen of breeders of the kind one fancied from the proceeds of the greater number of eggs sold as the result of the little things done with the old flock.

Despite the fact of every one "knowing how to raise chickens," as they suppose, there is a certain knowledge of the business that must be gained before the greatest success can be had. The questions of feeds, housing, mating, etc., are ones well worth the study of any one who maintains even a small flock.

Dairies producing the best and most butter for the number of cows kept are owned by men who have made a study of feeding and breeding, and the poultryman who markets the most and best eggs is in the same class, and both are students all the time, improving each season upon the output of the previous year. Journals devoted wholly to the poultry industry are numerous and cost but little, and every owner of a flock should have at least one in the house each month, as they are issued, treating upon the best methods for all branches of the business and helpful in the care of the fowls in many ways.

Market all the cockerels as soon as large enough, giving the additional room thus gained to the pullets to enjoy themselves in, and remembering that the broilers and fryers marketed at this time are worth as much as when full grown, and are well out of the way, as the hens lay better without than with the males, and the eggs are better and the liability of uncertain ones going to market greatly lessened.

Agnews, Santa Clara Co. W. S. Sullivan.

THE IRRIGATOR.

Sewage Irrigation at Pasadena.

That a sewer system can be and is being operated without expense to a city, and not only that, but bring in a handsome profit as well, may read like a fairy tale, says the Rural New Yorker, but it is being done to-day in a California city, which is probably one of the cleanest and best sewered cities in this country. Ever since science has demonstrated the necessity of cleanliness as a means of keeping down the mortality ratio in our cities the question of sewage disposal has been a problem perplexing in a degree second only to that of providing a water system. If the city is situated on the banks of a swift, overflowing stream this question is simplified greatly, but if it springs up inland, as many of our Western cities do, with no streams near enough to be utilized as outfalls for the sewage, then the problem becomes one of utmost complexity. Especially is this true of cities of tropical or semi-tropical climates, for at all seasons of the year they must be kept scrupulously clean. There are three alternatives: The sewage may be burned, a process alike wasteful and expensive; it may be converted into fertilizer, a process far from satisfactory; or nature, in the form of earth and sunshine, may be called upon to destroy the disease germs which lurk in the cast-off mass, and convert it into plant food to be utilized on the spot. It is the latter, when the requisite quality of soil and quantity of sunlight can be secured, that is coming to the front, not only as an efficient, but as a profitable means of sewage disposal.

The Beginning.—In 1887 the city of Pasadena, situated 9 miles from Los Angeles, being too far inland to secure an outlet for its sewage, purchased 300 acres of unimproved land, and thought to try the experiment of disposing of its sewage by means of cultivating it into the soil. Then protests began to arrive from neighboring property owners, and especially from the village of Alhambra, through which the outfall sewer must pass. Even many prominent citizens ridiculed the idea as folly. In the end the city won, after one of the most bitterly contested civil suits ever witnessed in southern California, and in 1892 the outfall sewer to the farm was finally completed. The outfall is of salt-glazed vitrified pipe, varying from 16 to 20 inches in diameter, and on account of the grade, which ranges from 1 foot to 3.51 feet per 100 feet, is capable of taking care of the sewage from a city of 20,000 people, and will be large enough for some time to come.

The Farm.—The farm is 4½ miles from the center of the city, and in the long journey papers and nearly all solids are dissolved, and those which are not, consisting mostly of rags, coffee grounds and corks, are taken out at the settling tanks located at the entrance to the farm. The sewage, which varies in color from nearly clear in the morning to a soapy appearance in the afternoon, is distributed throughout the farm by two 12-inch pipe lines, having outlets every 400 or 500 feet, controlled by gates. By means of these outlets the sewage, which in the summer months fill the two-fold purpose of fertilization and irrigation, can be taken out and distributed as needed by means of head ditches with laterals from 2 to 6 feet apart. Nothing is grown for food which in any way can come in contact with the raw sewage, but quantities of barley and wheat hay, pumpkins, corn and walnuts are grown, there being 117 acres of walnuts. Alfalfa was formerly grown, but on account of its being a matted low-growing crop it produced unsatisfactory conditions, although the yield was extraordinary.

Deodorized. — To one who has given but little thought to this method of sewage disposal it may seem impossible that odors can be kept down, but surprising as it may seem, one can usually approach the streams and stand on their very edge without realizing that they are sewage. The secret of the farm's success from a sanitary point is the dry climate and abundant sunshine of the locality, and the thorough and constant cultivation to which the farm is subjected. The sewage is allowed to run upon an area from four to ten days, depending upon the dryness of the atmosphere, and as soon as it is sufficiently dry to work it is thoroughly cultivated or plowed. A thorough stirring of the soil only is necessary. During the summer the sewage is used in the open fields, experience showing that it is unwise unduly to saturate the ground while the trees are in foliage, as a heavy wind might uproot them. About December 1 the sewage is turned into the groves, where it is kept until the leaves begin to come out in April. Usually the 117 acres will easily take care of the winter supply, but during excessively wet seasons it is used on other parts of the farm, or the neighbors take it, an opportunity of which they eagerly avail themselves. Unless the season is an excessively wet one, only one man is required to care for the sewage, and then only in the daytime, he being able so to arrange the flow during the day that it will care for itself at night. Other than the caretaker the farm requires but little more labor than an ordinary farm, and on account of the fertilizing value of the sewage the crops are abundant.

The Produce.—Last season there were produced 56,625 pounds of walnuts at 11 cents per pound; 304 tons of hay at $15 per ton; 1500 bushels of corn at $1.35 per hundred, and 275 tons of pumpkins at $2.50 per ton. The farm furnishes the hay and grain used by the fire and street departments.

THE VETERINARIAN.

Tuberculosis and City Milk Supply.

Dr. A. R. Ward who has charge of the bacteriological and veterinary work at the State University furnishes for publication the following interesting discussion of the tuberculosis question in its relation to the milk supply of towns and cities:

Milk, a food consumed in the raw state in large quantities by so many individuals, occupies a particularly important and unique position among the foods of man. The importance of a pure milk supply is equalled only by a pure water supply for both are consumed without heating, a process which of course kills off the germs of disease. The particular attention which is paid to the milk supply by health officers charged with preventing disease is therefore justifiable, but such interferences always excite the opposition of the dairymen who sometimes forget, or fail to recognize, their responsibility. For the past four years health officers, boards of health and city councils have allowed to lie dormant regulations looking towards preventing the dissemination of tuberculosis from cattle to man. This was done largely in order that further evidence about the danger of such transmission of disease should be brought out. This has been done, and now the public has a right to demand that their milk be free from the germs of tuberculosis, not only because such milk is abhorrent, but also because the disease in the cow and man is identical.

I would have it understood that I fully appreciate the magnitude of the tuberculosis problem. Movements for improvement temporarily disturb property rights and time honored economic conditions. Consequently there are around numerous antagonisms due to skepticism, pardonable ignorance of the facts.

The dairymen are thoroughly accustomed to the existence of tuberculosis in their herds and are not at all alarmed by its presence. It is such a common matter to weed out a cow that has become run down from the disease that they do not notice it, and in fact simply regard it as one of the expenses of their business. They do not understand that such leaks can be stopped and do not wish to because of the heavy initial expense incurred by so doing. I recognize well that it would be a serious financial matter to conduct the dairy business for the next few years on the basis of tuberculosis-free cows. It is an unfortunate fact, however, that dairymen do not realize that the heavy initial expense will secure them immunity in the future from loss by the disease. They do not realize the nature of an infectious disease and shudder at the price for freedom from the loss occasioned thereby.

Any attempt to keep a herd of cows free from tuberculosis will utterly fail unless cows are bought subject to their passing the tuberculin test successfully. Dairymen complain that they cannot so purchase cows, but it can be done if all insist on it. The day will come when the health of a cow will be taken into consideration when a valuation is placed upon her. The fact that the general appearance of a cow furnishes almost no information about her condition with respect to the existence of tuberculosis is not recognized by dairymen. The necessity for the use of the tuberculin test is a new idea to dairymen and its value is not generally appreciated by them.

In localities where the tuberculin test is applied to the cow in the interest of public health for the first time it is quite fair that the public, that is, the State and county together, should share with the owner the loss occasioned by compulsory slaughter of condemned ones. I regard this as merely a recognition of the fact that the owner unacquainted with the nature of tuberculosis may be regarded as innocent and entitled to recompense. Attention should be called to the fact that the Berkeley ordinance does not dictate the disposal of the animals reacting to the tuberculin test. It simply provides that only clean milk from healthy cows shall be sold. Dairymen are given the alternative of disposing of diseased cows or not selling milk in the town. The identification system employed by the veterinary inspectors permits the ready identification of condemned animals.

Some States in the East fought tuberculosis by compulsory slaughter with indemnity to owners, but the problem in many cases is so enormous that it is impossible to get sufficient appropriations of funds to successfully combat the disease. Such measures cannot be continuously carried out, and the owner must eventually come to a realization of his personal responsibility in the matter of keeping his herd free from tuberculosis. The fact that dairymen complacently view the ravages of tuberculosis, the most destructive cattle disease, and oppose all measures looking to the eradication of the disease is astonishing. That they have no desire to undertake measures of eradication on their own accord can only be attributed to the failure to appreciate what an infectious disease really is.

From conversation I have learned that many dairymen would be perfectly willing to conduct their business in a manner satisfactory to health officers, but they feel that the prevailing price of milk is not high enough and that the public should pay for higher milk. I shall not dispute this point. It may be true for the first year or two while the heavy losses are occurring, due to a reorganization of the business on the basis of a healthy herd.

Should the Retail Milkmen's Association of Alameda county raise the price of milk in Berkeley, for instance, with the understanding that they submit to the tuberculin test, the controversy could be settled. It is obvious enough though that all dairymen that might ship milk into Berkeley could not be induced to join in such an agreement. Such individuals would attempt to sell milk from diseased cows at a cheaper price, and undoubtedly would do a thriving business for the public demands cheap milk. Unless it is possible to enforce an ordinance preventing unlicensed milk vendors from carrying on their business it would be worse than useless for the Retail Milkmen's Association to raise the price of milk. Another argument against such a course is furnished by the fact that the personnel of the boards of health, health officers and city councils is changing and therefore different degrees of activity in the enforcement of milk sanitary ordinances are bound to occur. It seems to me that health officers at present engaged in such crusades should not regard the possibility of cessation of activities, but should go ahead as if the matter were to be carried out right for all time.

Agricultural Review.

Butte.

Corn Growing Experiments.—Gridley special to Sacramento Bee, Aug. 17: C. P. Hartley, Assistant Physiologist of the plant-growing laboratory of the Department of Agriculture, and W. A. Beard, Secretary of the Sacramento Valley Development Association, are making a tour of the Sacramento valley, during which Mr. Hartley is inspecting the corn planted by various farmers throughout the valley from seed furnished by the Agricultural Department last spring. The object in making the experiments was to determine the best varieties of corn for the valleys of California, and nearly all of those to whom seed was sent planted it. Among those in this vicinity who have experimental plants of Government corn are George Thresher, A. D. Cutts, Thos. Cox and C. W. Thresher of Gridley; J. S. Hutchins, E. J. Robinson and E. J. Ellis, superintendent of the Friesleben ranch, of Central House; C. Seiber of Marysville; A. Sweetzer and V. Gianelli of Honcut. Several of the ranches were visited and Mr. Hartley expressed satisfaction with the results obtained.

Almond Crop.—Preparations are under way for beginning to care for the almond crop. The Bidwell crop consists this season of sixty tons and work will start Thursday. The power huller is being put in order and will be operated under the supervision of Walter Reed of Davisville. The nuts this season are of fine quality and run quite evenly, and with a moderate crop at a fair turn on acreage will be good.

Los Angeles.

Large Citrus Crop of Southern California.—Los Angeles dispatch to San Francisco Chronicle, Aug. 16: With the citrus fruit in excess of 35,000 cars, southern California is confronted with a record-breaking season next year. The current year ends October 31st, with shipments that will aggregate more than 30,000 cars, according to official estimates. The Southern California Fruit Exchange will have distributed $7,000,000 to growers this year for fruit shipped for its members. Indications are that next season will break the record from 5000 to 10,000 cars, as the present season is doing by 3000 cars. How to handle this enormous tonnage is the problem that confronts carrying lines, each of which has taken time by the forelock in order not to be caught napping. The Santa Fe has just placed orders for 10,000 additional refrigerators to be delivered on emergency, and additional cars will be ordered as fast as they can be turned out. The Southern Pacific is depending upon the Armour Co., with whom it has contracts to take care of its interests. The Clark road has similar arrangements with the Armours.

Lake.

Bartlett Pears.—Clear Lake Press, Aug. 19: The Bartlett pear crop near Lakeport is fairly good this season, and picking and packing have already been going on for several days in a desultory manner. It is expected that hauling to Hopland will begin in earnest next Monday and continue steadily so long as the pears last.

Mendocino.

Price for Hop Picking.—Dispatch-Democrat, Aug. 18: At the hop grower's meeting last Saturday the old rate of $1 per 100 pounds for picking was agreed upon, subject to the usual rules and conditions. It is expected that picking will begin about September 1. A few yards may be ready before that date.

Merced.

Sweet Potato Crop.—Modesto Herald, Aug. 17: Sweet potato harvesting and shipping is now under way in Merced county. The output is being handled for the most part by the California Vegetable Union, as agent for the Merced & Turlock Sweet Potato Growers' Association. The quality and the yield promise well, and it is estimated that the output of the district this season will be between 700 and 1000 cars. Last week five cars were shipped, and the same number will be shipped this week. The small lots, shipped in crates, so far amount to three or four cars.

Riverside.

Perris Valley Wheat Yield.—San Bernardino Sun, Aug. 19: E. D. Roberts and H. E. Harris, of San Bernadino and W. W. Wilcox and E. J. Eisenmeyer, of Colton, the latter representing the Globe mills, who recently went through the Perris valley, where the harvest is now at its height, report that the acreage is immense, and some of the harvesting outfits have as much as fifty days' work ahead of them, which will carry the harvest season well past October. The yield per acre is not so heavy as had been expected and proves to be a little uneven, some fields running much heavier than others. But the acreage is so far beyond anything before seeded in the Perris country, that the yield in sacks will exceed all records. It is stated that over 500,000 empty sacks have been sold the farmers in this vicinity for their grain, and, roughly speaking, a sack of grain means a dollar. The Globe milling people have built a warehouse near Perris, in which to store grain, and at present there are thousands of sacks of grain piled in the fields. Mr. Roberts told of one pile in which there were 12,000 sacks stacked up.

San Joaquin.

Report on Grapes.—Lodi Herald, Aug. 19: J. W. Dougherty has made a careful examination of the vineyards in the Lodi district and reports that the wine variety of grapes will yield half a crop; excepting the white wine variety, which he estimates will give possibly a yield of 75% on an average. The Tokay grapes are injured somewhat by the heat and mildew and the shortage will not be so pronounced.

New Fruit Shipping System.—Lodi special to Sacramento Bee, Aug. 19: A new departure in shipping fresh fruits to Eastern markets is to be tried here to-day when J. A. Anderson will ship a carload of Tokay grapes to New York in a new car of the "Clothel" system. This new arrangement does away with ice, a mechanical arrangement, operated by a chain to the car axle, furnishing better and much cheaper refrigeration than ice. When the car is delayed, a kerosene engine furnishes power to drive the mechanism. It is also stated that this car can be loaded with ordinary merchandise on the return trip to California, and thereby a big saving is affected. Local growers are awaiting with interest the result of the trial trip.

San Mateo.

Crop Conditions.—San Mateo dispatch to Call, Aug. 17: An official report of crop conditions, submitted by the local agent of the Southern Pacific Co. for the district about San Mateo, shows a poorer prospect than any in many years. The report recites that the leading products are hay, milk and grain. The crop of hay will be of average quantity, but it will be of a very poor quality, a fact due to the late spring rains, which produced rust. About 2000 acres will be turned to hay, yielding 4000 tons. The grain crop will consist almost entirely of barley. The product will be only about half as large as last season. Three thousand acres under cultivation will produce about 250 tons. The milk shipments will equal those of last year and will consist of about 1800 tons. It will be noticed that the report deals exclusively with agricultural and food products and says nothing of the flower industry, in which this part of San Mateo county is largely and profitably interested.

Santa Clara.

Black Scale Parasite.—San Jose Herald, Aug. 17: Dudley Moulton, county entomologist, went to Los Angeles county last week for the purpose of collecting colonies of scutellista, the parasite that preys on the black scale that attacks olive trees in particular, and other kinds in general. About two years ago Mr. Ehrhorn established several colonies of scutellista in this valley, but for some reason the parasite did not flourish, and at the present time the black scale is flourishing almost without hindrance. Mr. Moulton has been examining the orchards for some weeks, but has been unable to get thriving colonies in this county, and his visit to Los Angeles was made with a view of obtaining scutellista in large numbers. The parasite looks like a small fly. It preys upon the scale by depositing its eggs in the scale. When the eggs hatch the grub feeds on the scale and practically eats its way out. The parasite has proved its ability to remove the scale, and Mr. Moulton is assured that if he can obtain scutellista in sufficiently large numbers he will be in a position to eliminate to a large extent the enemy of the olive.

Santa Cruz.

Early Apples.—Watsonville Register, Aug. 20: Local fruit packers are preparing for a long and prosperous season. The work of picking and packing Gravenstein apples is well under way and several carloads of this fruit have been shipped out this week, including one carload for New York. It is still too early to harvest Bellefleurs, experience having proved that it is detrimental to this variety of apples to pick it before it is fairly matured. The Bellefleur crop is making a splendid showing in the Pajaro valley this year. The fruit will begin to move in earnest about the middle of September. There has been a brisk demand for fall pippins and other early apples, a quantity of which has been shipped to the southern part of the State.

Solano.

Bartlett Pear Season Over.—Suisun dispatch to Sacramento Union, Aug. 18: This week practically closes the shipment of the Bartlett pear crop from Suisun valley to the Eastern markets. While the crop has been lighter than in former years, the prices have been higher and the growers are credited with a profitable season. About 250 carloads of pears have been shipped from this point this season, which is probably 100 carloads short of the normal output. Shipments from now on will be confined to late peaches. The dried fruit houses are in the midst of the busy season. Prices for the latter are satisfactory, and taken altogether, the fruit growers of this section have no reason to complain of the outcome of the present season.

Sonoma.

Making Big Winery Improvements.—Healdsburg Enterprise, Aug. 19: William Lehn, the wineryman of Forestville, is making some improvements in his winery. He expects to add about 90,000 gallons to his cooperage, together with a modern still and a large hydraulic wine press. Mr. Lehn is also building an annex to his present winery which will cover a space of 37x130 feet and will give him considerably more much-needed floor space.

Twelve Thousand Acres to be Put Under Cultivation.—Healdsburg Enterprise, Aug. 19: Joseph Keechler, manager of the Jones ranch south of Sonoma, has decided to break up 800 or 1000 acres more of reclaimed land for seeding next year and for the purpose $3500 was expended this week for fine horses and an extra force of men will be put to work. At present there are about 5000 acres being utilized on the Jones ranch, but it is calculated to bring the entire 12,000-acre tract under cultivation in time.

Sutter.

Fruit Packing.—Sutter Farmer, Aug. 18: While there has been some packing going on at the Rosenberg Bros. big house here, the season's work will open up in about ten days and a large force will be employed. Dried fruit, raisins and figs will be the principal products handled. The fig crop promises to be large this season and will be ready for packing in ten days or two weeks.

Grapes Being Shipped.—The shipments of Thompson Seedless grapes to the city markets are now going forward and by next week most of the growers will be sending large lots down. Cars are being side-tracked here daily to receive the shipments. From all reports the returns are satisfactory.

Almond Harvest Commenced.—Some of the almond growers in this county have commenced harvesting their almonds, but the nuts in most of the orchards will not be ripe enough to gather for another week yet. The crop will probably fall short of the first estimates.

Stanislaus.

Products of Orchard $9000.—Oakdale Leader, Aug. 18: D. S. Stuart of Langworth sold to Castle Bros. of Sacramento his crop of dried peaches and almonds in the early part of the week. The output of Mr. Stuart's crop of dried peaches was about thirty-five tons, for which he realized 8¼ cents per pound, or $165 per ton, aggregating $5775. The yield of his almond crop was seventeen tons, for which he was paid 9¼ cents per pound, or $185 per ton, aggregating $3145. Mr. Stuart is highly pleased with the results, having realized a handsome profit after deducting the cost of preparing the crops for the market. In this off year for the production of wheat, the chief commodity in this locality, $9000, approximately, from one single sale speaks well for the fruit and nut industries as money producing crops. In addition to the large sale above mentioned, Mr. Stuart sold dried apricots and green fruits earlier in the season aggregating $700.

Tehama.

Shipping Cattle and Hogs.—Red Bluff special to Sacramento Bee, Aug. 16: The shipments of stock from Red Bluff have commenced. In addition to the scattering carload lots of the past few days, to-day a number of carloads of stock left for different points. Six carloads were shipped by Joe Casale—three of hogs and three of beef steers. J. Davis also shipped three carloads of prime steers to the San Francisco market. In addition to this A. L. Brown billed out four carloads of mutton sheep, two of which went to Redding and two to San Francisco.

Hop Picking.—Tehama special to Sacramento Bee, Aug. 16: Hop picking will soon commence on the A. Clemens Horst Co.'s hop ranch, 2 miles from Tehama. This is the first crop which the vines have borne, they having been planted last winter. The ranch consists of 120 acres, which next year will be increased to 500 acres. Large buildings have been erected for drying and caring for the crop.

Tulare.

Winter Green Feed.—Porterville Enterprise, Aug. 18: The Williams and Young Co. started to fill the silo they have erected on their ranch west of town, Saturday. The machinery ran in first-class shape for about three hours, when unfortunately a sprocket chain broke and work had to be suspended until Monday, when, after fixing a cogwheel that gave out, everything was running smoothly. This silo is in the shape of a vat, 12 feet in diameter and 30 feet high. The machinery for a silo of this size can be run by an 8 H. P. engine, and can be moved to work in connection with any other silo of the same size or smaller. The fodder—in this instance a start was made with green corn and then green alfalfa—is fed into a feed cutter, and is taken by the means of an endless elevating chain ladder to the top of the silo and dumped therein. Two men are kept inside the silo trampling the fodder down, so as to pack it solid, and when full the silo is sealed on top with barnyard dust and made airtight, so as to exclude all air or moisture. This silo will hold 75 tons of green feed, and should take about a day to fill, but this being their first venture, the Williams and Young Co. took a little longer. With a silo of this size the Williams and Young Co. will be sure of green feed for their fine stock during the winter months.

Ventura.

Honey.—The honey crop in the county this year was a good one, and though the price as yet is unsettled, the honey men are confident that a good price will be obtained. There was any amount of honey-making blossoms the past season, and the bees having the best to choose from stored, an excellent quality of honey. The output will be good as well as plentiful.

Yolo.

New Winery for Woodland.—Yolo Mail, Aug. 18: The California Winery of Sacramento is soon to establish a branch in Woodland, consisting of a crushing and distilling station. J. M. Kincheloe is to be the local agent of the company. Mr. Kincheloe informed us yesterday that the company would within a very short time begin the erection of its station here.

Yuba.

Peach Crop.—Marysville Democrat, Aug. 17: Tom Giblin stated last night that neither of the Association canneries alone handle the peaches from the Giblin Bros. orchard at Yuba City as fast as it comes from the trees. The crop is so large that it has been necessary on two occasions to lay off the pickers so the canners could catch up, and there were stacked up in one of the canneries one day more than 2100 big boxes of the Giblin peaches. It cannot be put up elsewhere because of the big run on pears in other canneries, the crop this year being large and the purchases heavy. Some of the peaches probably will spoil on account of inability to handle them. Ferd Hauss stated this morning that three acres in his orchard will yield him $1000 worth of peaches per acre. Another five acres will produce nearly as well. He has less than thirty pickers employed and they are handling $1000 worth of fruit daily.

Hop Picking.—Four Corners, Aug. 18: Next week will see hop picking begin in the Bear river yards. In the Horst yards picking will begin Monday or Tuesday with a full crew of pickers. In the Dreschar yards picking will begin about the same time as in the Horst yards. In the Durst yards picking will not begin until the last of next week, probably Wednesday or Thursday. A few overripe hops were picked this week in the different yards. About 4000 pickers will be employed in the yards.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

Flowers.

Stars they are, wherein we read our history,
As astrologers and seers of old;
Yet not wrapped about with awful mystery,
Like the burning stars, which they behold.

Wondrous truths, and manifold as wondrous,
God hath written in those stars above;
But not less in the bright flowerets under us
Stands the revelation of his love.

Bright and glorious is that revelation
Written all o'er this great world of ours.
Making evident our own creation,
In these stars of earth—these golden flowers.

And the poet; faithful and far seeing
Sees, alike in stars and flowers, a part
Of the self-same universal being
Which is throbbing in his brain and heart.

Gorgeous flowers in the sunlight shining,
Blossoms flaunting in the eye of day,
Tremulous leaves with soft and silver lining,
Buds that open only to decay.

Brilliant hopes, all woven in gorgeous tissues,
Flaunting gaily in the golden light;
Large desires, with most uncertain issues,
Tender wishes blossoming at night.

These in flowers are men e'en more than seeming;
Workings are they of the self-same powers,
Which the poet, in no idle dreaming,
Seeth in himself and in the flowers.

Everywhere about us they are glowing,
Some like stars to tell us spring is born;
Others, their blue eyes with o'erflowing,
Stand, like Ruth, amid the golden corn.

Not alone in spring's armorial bearing
And in summer's green emblazoned field,
But in arms of brave old autumn's weaving,
In the center of his brazen shield.

Not alone in meadows and green valleys,
On the mountain top, and by the brink
Of sequestered pools in woodland valleys,
Where the slaves of nature stoop to drink.

Not alone in her vast dome of glory,
Not on graves of bird and beast alone,
But in old cathedrals, high and hoary,
On the tombs of heroes, carved in stone.

In the cottage of the rudest peasant,
In ancestral homes, whose crumbling towers,
Speaking of the past unto the present,
Tell us of the ancient games of flowers.

In all places, then, and in all seasons,
Flowers expand their light and soul like wings
Teaching us by most persuasive reasons
How akin they are to human things.

And with child-like, credulous affection
We behold their tender buds expand
Emblems of our own great resurrection,
Emblems of a bright and better land.

—Henry W. Longfellow.

For One Night Only.

Gentlemen, I am at a loss for words! In saying you have done me too much honor to-night, I mean we are apt to forget that the opportunity to take his tide at the flood does not come to every struggler. Now, mine—the speaker's voice had halted curiously for a moment — well, it spoils an actor's story that is perhaps without parallel. There! never, never should I forget it—that day I mean, when as a few of us were waiting listlessly for instructions at the new suburban theater, our brusque old manager panted in with a face as white as it was worried. And it was to me he beckoned.

"Quick, this way, Strang!" and I went after him into one of the dressing rooms. "Here's a go!" he blazed out—I see his arms waving now. "Here's the place alive with posters and expectation, the curtain bound to go up in five hours to a packed house, and no one in the wide world to play Carl Angel! No one! The opening night—it means ruin, in a suburb like this." Up and down he went striding while I gasped; for Karl Angel, as you know, was the pick of the parts in "The Unknown Knight." "Every one dying to hear Norman Caffyn, and here comes a note to say he can't possibly take it to-night—had an upset, or some fine thing. I wire on to Wentworth, the man understudying him all along—and back comes the confounded reply that he's left home for nobody knows where! Strang!" He stopped and faced me. "You're not the pushing man I thought!"

"I'll play it," I said. The room had seemed to whirl round, but I believe I snapped my teeth on the words. At last! yes, but a man's heart may sink very low while he waits on chance. He knew well enough I had studied the role from the very first, but he had always given this Wentworth the preference, and pooh-poohed my every desperate attempt to rise superior to those deadening minor parts.

"You will! You must — there's no one else to take it. There, do your level best, and I shan't forget it — neither will the public. Hang it, though, it means a half-empty house to-night, any way, with Caffyn out of the cast. I suppose I am bound to stick up a notice. And what about the things — the helmet, mail-shirt, and all? Annoying! I must send — no, go yourself for them; you can compare notes. Here's his address — the Strand Hotel. Hurry off! You are quite sure of yourself, Strang?" he fumed nervously; and I spun round hotly. A thought had flashed through me — Blake's estimation of a man's powers was notoriously worth having in those days.

"Am I? Well, so sure, Mr. Blake," I said, closing the door, "that, if Mr. Caffyn himself only consented, no one but our three selves need know there has been any change for the one night. Certainly, I mean it. If that can alter your fixed opinion of me, I'll play Norman Caffyn, and Karl Angel, too, so that you or any one else will never see a difference! I could be ill — any one could take my part — and you can have your full house and advertisement. Is that agreed?"

"Nonsense — you couldn't! Never heard of such a thing!" he whispered, staring at me. Perhaps there was something in my determined front that day that impressed him. "You would? Well, if you think he — it's the opening night, too — there, I won't say either way. You must see Caffyn — I'll give you two hours. The idea!"

Yes, the queer, daring idea! That was at three o'clock. An hour later with the chance of my lifetime thrust into my hands, I had reached the city and was in a train on my way to Peckham. Short as was the time, and thrilling the occasion, I meant to call home first and tell my young wife what a wonderful thing had happened. She, too, had so often cheered me on, and brightened hours as dark for her as for me, she should know, and be at the theater that night to see my first real bid for success. Never nervous, I could do it I knew — but to come on as Caffyn himself, and play Karl Angel as he alone was supposed to be able to play it! In our height, size and pitch of voice there was not a deal of difference — that was why it had occurred to me to study his parts at the outset. But would Caffyn dream of allowing it? I could hardly dare expect it. Whether or no, that night's work would send me springing up the slippery ladder, I knew. Hurrah!

"Nance! Nance!" I went up those stairs three at a time — the prospect seemed to have made another man of me; and she — when she dropped that everlasting needle-work and swayed up in a maze, I remember I held her at arm's length. "It's a guinea a kiss to-day!" I laughed. And then, touched by the look on her pale, dazed face — we had had a real struggle to beat back the wolf — I calmed down. "I'm quite sane, dearie! You said my chance would come; it has—the very night the new theater opens! Say nothing to anybody, but be there by eight, and see if you know the man who plays Karl Angel."

A few more quick breaths of explanation, and then I ran out—leaving her in a fit of tears and laughter together—and was hurrying westward to see Norman Caffyn. Great actor as he was, I had no sense of presumption at the time, but simply sent up a card marked "urgent." I recollected, though, it did seem dream-like as I was shown up the grand staircase to his sitting room—still more so when, as he opened the door, I found him dressed, smoking a cigar, and looking precisely as usual—except, I thought, a trifle startled.

"Oh, it's you——" He seemed relieved. "What's up? You're to take my place to-night—you! Ah, of course, you—why what about Wentworth? Surely——"

"He's not to be found. Sorry to hear of your indisposition, Mr. Caffyn," I said, wondering a little what it all meant.

"Oh, no, you're not!" He turned away rather sharply. Truth to tell, it struck me at once that the thing was more or less a sham—but that was purely his own business. "It's a rare chance for you. Of course, you happened to have just the cut and style. Wentworth not to be had. Queer! That's a bit of pique I'll wager—he rather annoyed me some time ago, and I had to remind him that he was only number two. And so you've come for the things! There they are, in that trunk, just as they were packed after the Midland tour. Take it as it stands. By Jove! I reckon, then," he went on absently, "Blake is a good deal put out? Has he posted an intimation?"

"No, Mr. Caffyn," I said quickly, walking up close. "He has not, because I've taken the liberty of telling him there was no need—that I can take both parts." It was out, and curious enough it sounded; but I gave him no time to gasp, and ran on with a tense coolness that must have startled him. I shall not disgrace your reputation!

"I'm not playing the fool, Mr. Caffyn, For years Blake has refused me an opening, as you know, and to-day I have as good as challenged him to this. The notion came into my head, and I can do it—if you'll let me. This one night! No one knows of your note, and——"

"No one knows!" he put in breathlessly, catching my arm. "Why, it's the——" Then he stopped. If I had made some dreadful proposal, he could hardly have turned whiter. "No, I—I couldn't think of it," he said, and sat down. For a minute or so I stood there staring at him, and then he turned round. "All right, have your whim, man," he whispered. "Let the house find it out for themselves. Go on! Hold hard, Strang!"

I had just snatched up the trunk, with a hoarse "Thanks for that, sir!" and was opening the door, when he sprang up and blurted out. He had a hand to his forehead.

"No, I've just recollected—I shall want that mail shirt and helmet and the rest for the fancy-dress ball at the club to-night!" That was it. We stood looking at each other; I could hardly play the part without them—especially in that last famous duel scene where the unknown knight lifts his visor and stands revealed as Karl Angel.

"There, what's to be done? It starts at twelve, and I'm bound to be there," he went on, staring past me very strangely. "Ah, I know! Look here, don't stop to change, but as soon as the curtain drops, jump into a cab, and come straight here. I shall just have time to get into them and be at the club by twelve. Now, don't forget, Strang, I want them to time particularly. Dash off the moment you've killed your man and gripped the verdict of the house."

"Why, certainly, Mr. Caffyn; rely on that."

I was out, and making back to the railway station in a whirl. Imagine! I seemed to be treading on air; I wanted to give a great shout—but it was the time, if ever, to keep desperately cool. I had meant to run back home and see Nance—there was something more I had to say to her; but there would be only just time enough to purchase one or two little things I must have, snatch a cup of tea, freshen my memory by a glance through the "cues" and then — and then prepare to realize and eclipse the wildest dream I ever dreamed. For to-night I was Caffyn himself—and to-night I was to play Karl Angel.

By 6 o'clock I had seen Blake. By half-past 6 I had slipped into a dressing room and locked the door. At a minute to 8, when the call boy's voice sounded above the finale of the orchestra, I stepped out, ready. One of the supers, as I passed close, touched his forehead.

"Good evening, Mr. Caffyn!"

* * * * *

Eleven o'clock and all over. A glorious success, that was ending in a prolonged shout as the curtain went slowly down. And I—sick with the intoxication, with the certain knowledge that I had never made a palpable slip, and more than justified my claims—I stood, my foot on the chest of my prone opponent, lifting my sword in one hand, and with the other clasping the maiden whose cause I had championed and won. Yes! at that moment I could understand what Caffyn felt every night—what it was to be an idol of the people, if only for an hour.

"Caffyn! Caffyn! Bravo, Caffyn!" they were shouting, and up rolled the curtain for the third time. Then down—and it was all over.

I strode "off." Blake was waiting, one smile, and pressed my hand.

"Bravo it is, Strang! He ought to have been here—it'll leak out! Take my word for it, you need never look back now! Superb!"

But it was Nance I wanted to see. She was there in front, and her eyes would be swimming with sheer pride, I knew well. I was making for the dressing room — and then I suddenly recollected what I had promised Caffyn. Slipping on my hat and overcoat, stuffing the helmet and my own clothes into the trunk, I scribbled a note of explanation and gave it to the call boy to take round where Nance waited and hurried out into the street. There was an empty hansom just moving past the theater.

"Strand Hotel, sir? Right—inside thirty minutes."

I remember I sank down on the seat, my heart still thumping away. It was more than likely Caffyn had been a little curious to see what my "make-up" was like. He should—he should open his door and see his "double" that night. An ejaculation of approval or surprise from his lips would complete the day's triumph. And wouldn't Nance be waiting at home in a fever! Bless her heart!

The cab stopped, I gripped the trunk and went to step out. I heard a boy say, "Look, ain't that Caffyn, the actor?" and laughed to myself. What then? The rest seems still more like an awful, incredible dream. Looking back afterward to realize, it seemed to me that I had hardly taken a stride across the pavement when a figure darted forward and intercepted me dead. It all happened in a mere flash of time. I know I took in a glimpse of a dead-white face that I knew, and of two eyes that shone with a vindictive light. Then simultaneously a husky hiss:

"I warned you! Take it!"

I never saw the pistol go up—there was no time to grapple with him, or even to swerve an inch by instinct—a flash, a bang—something had struck me full in the chest. A noise of hurrying feet, a whirl of dancing stars, a sound of distant shouting, and then for me Heaven and earth had come together with a crash.

* * * * *

"Save him, doctor—bring him to before his wife comes! That shot was meant for me; I've acted the coward and villain. Oh, save him, you must! I couldn't stand exposure!"

That broken voice—was it Norman Caffyn's? Where was I—what had happened? I lay in a deadly, yet sweet lethargy, not even able to open my eyes, just conscious that I had partly struggled back to life, and that some one was plucking at my chest. Then another voice, cool and reassuring.

"You need not. Don't excite your-

self, sir! There you are—a mere flesh wound, that'll be well in a fortnight. This mail shirt affair has simply saved his life—the bullet only just got through it. There was an intense shock to the heart, an access of blood to the brain, and now—this brandy and a little quiet ought to put him right. There, he's coming round—I'll send down and tell them there's nothing much the matter. And they let the scoundrel get clear away!"

"Clear away, before the policemen got near." Aye, that was Caffyn's sunken voice. I moved a hand, and in a trice both his own had closed convulsively upon it. "Strang, old chap—thank Heaven! I've sent for her—there was a card in your pocket. There's been a miracle at work all round—I only know you were to save my life to-night. Oh, I'll never forgive myself—I was a skunk to let you go like that. I don't know what made me do it; but I was frightened, unnerved. I wanted to know, and you put the idea into my head. There's no one here now. Who—who was it?

Then I recollected, and the mere remembrance of that mad, vindictive face—Wentworth's face—brought obiivion again. It must have lasted a long time, because when at last I muttered, "Where's Nance?" the tight pressure of two arms around my neck told me that I need not ask again. Nance was there—and I had played Karl Angel that night to a crowded house—and the beginning, perhaps, of some great end had come for me.

"I'm all right, they say," I whispered. "Let me go to sleep now."

Yes, it was a night of miracles—a chapter of interweaved coincidences. Not a newspaper had got at the truth that next morning—Caffyn had contrived that. There was only a brief, garbled account of an assault by an unknown miscreant upon a gentleman entering the Strand Hotel, and a vague reference to the bullet having been turned by some providential means. Caffyn himself did not glean Wentworth's name from me till that next morning; and then, for reasons of his own, he begged me not to tell a living soul, so that, as far as I know, his would-be-murderer has not been publicly identified with the man who had understudied him for years, and who may now be repenting his despicable attempt in some far corner of the earth.

Certain it must be that the shot was intended for Norman Caffyn, and no other. A series of menacing letters, hinting at violence of some sort, had reached him; but he never so much as dreamed that Wentworth had inspired them. How should he? Then, finally, there had come, on that eventful morning, one containing these words:

"Your star still rises, while mine still hangs. Make the most of Karl Angel to-night—you will never reach home alive!"

That was it. Half incredulous, but really scared, Caffyn, a superstitious man, had simply resolved not to stir from his hotel for the next twenty-four hours—while yet he was ashamed of his fear and the facts becoming known. Then I had called with that astounding proposition, and—you can guess at the rest. A very human impulse—a sudden vague idea that, by taking advantage of this extraordinary coincidence, as it seemed then, he might somehow learn whether there was anything in the veiled threat, and—well, there, I like to believe that he honestly never realized what really was working in his mind that day when he allowed me to personate himself. That he had some distinct foreshadowing of danger, either at the theater itself or upon leaving it, was evident from the fact that, just in time, that idea of the fancy dress ball had shot into his confused brain. Were I to be attacked in any way by mistake, that mail-shirt—well, to tell the truth, it was an idea that he had more than once adopted as a precaution himself. Only to know—that was his one wild thought that morning.

But I—I prefer to forget all that. I try to think only of the golden side of that strange day when, playing Karl Angel, I was made to come between Norman Caffyn and death. Why, if a debt was there, he paid it in full measure long before he was taken from our midst; to him, if to any man, I owe the opening which has led me on to—well, to this! To his memory! In more ways than one, gentlemen, he leaves a blank that can never be filled up!—Tid-Bits.

Success.

All experience proves that there are two factors in the success of every boy and every man. These are capacity and opportunity.

There are thousands of capable men to-day filling lower positions than those for which they are well qualified, because the opportunity to go higher has never come within their reach. It has been so since the world began; it will continue to be the case until the end of time. But it is also true that Opportunity has knocked at many a man's door, and the man who was called for was not ready. It is rare that Fortune makes the second visit.

The power that keeps the world moving is the hopefulness of youth. Almost every boy is determined to better his condition, and starts out in life with the ambition to belong to the successful few rather than stay in the ranks of the common workers. But not more than one in a hundred of these says to himself: "I will not permit pride, or laziness, or carelessness, or work, or demands of any kind, no matter how unpleasant they may be, to stand between me and success."—W. H. Mayer.

How to Get Out of Bed.

Don't jump up the first thing your eyes are open. Remember that while you sleep the vital organs are at rest. The vitality is lowered and the circulation not so strong. A sudden spring out of bed is a shock to these organs, especially to the heart, as it starts to pumping the blood suddenly.

Take your time in getting up. Yawn and stretch. Wake up slowly. Give the vital organs a chance to resume their work gradually.

Notice how the baby wakes up. It stretches its arms and legs, rubs its eyes and yawns and wakes up slowly. Watch a kitten wake up. First it stretches out one leg, then another, rubs its face, rolls over and stretches the whole body. The birds do not wake up and fly as soon as their eyes are open; they shake out their wings and stretch their legs, waking up slowly. This is the natural way to wake up. Don't jump up suddenly, don't be in such a hurry, but stretch and yawn and yawn and stretch. Stretch the arms and legs; stretch the whole body. A good yawn and stretch is better even than a cold bath. It will get you thoroughly awake, and then you will enjoy the bath all the more.—Medical Talk.

Gifts should be accepted thankfully, but not too curiously. An amateur poet found himself in a sad quandary.

"I don't know what to think," he said; "last year on my birthday Ella gave me a pencil to write poems with, and this year she has given me a silver-mounted eraser."

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Try This New Puzzle.

Put down the year in which you were born, to which add 4, then add the age which your next birthday will make, provided it comes before January 2d, otherwise your age at your last birthday. Multiply result by 1000 and deduct from this 694,423; substitute for the figures corresponding letters of the alphabet, A for 1, B for 2, C for 3, and so on. The result will give the name by which you are popularly known.

As Brown took the vacant chair the barber treated the company to an eloquent wink and a now-gents-get-ready-to-smile kind of a look.

"You must find that impediment in your speech rather inconvenient at times, Mr. Brown."

"Oh, n-no— everybody has his little p-peculiarity. Stammering is m-mine; what is y-yours?"

"Well, really, Mr. Brown, I am not aware that I have any."

"W-hich hand d-do you stir y-your tea with?"

"The right hand, of course."

"W-well that is your p-peculiarity; most p-people u-use a t-teaspoon."

Villager: "What do you call that 'ere thing, mister?" Cyclist: "This? Why, a bicycle." Villager: "Well, give me a wheelbarrer. Yer can sit down in it an' 'ave a rest when yer tired o' pushin' it."—Glasgow Evening Times.

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References: David Starr Jordan or any Stanford Professor.
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The Markets.

San Francisco Produce Report.

San Francisco, August 23, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.		Dec.	
Wednesday	$ 82⅛@	81⅜	83⅝@	82⅜
Thursday	82⅝@	81⅞	84⅛@	83
Friday	82¼@	81¼	83¾@	82⅝
Saturday	81⅝@	80⅜	83⅛@	82⅛
Monday	80½@	79¾	82⅛@	81⅝
Tu sday	80⅜@	80½	82½@	82

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53¼@52⅝	44¾@44¼
Thursday	53⅛@52⅞	44⅜@44⅛
Friday	53⅜@52¾	44⅝@44⅛
Saturday	53⅛@53	44⅜@44¼
Monday	53 @52⅛	44⅛@43⅞
Tuesday	53⅛@52⅞	44 @43¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 36⅝@1 36⅛	$ —@—
Thursday	1 36½@1 35⅞	—@—
Friday	1 35 @1 34⅞	—@—
Saturday	1 35⅛@1 35¾	—@—
Monday	1 34⅛@1 33⅞	—@—
Tuesday	1 34⅛@1 33⅝	—@—

Wheat.

The market for December option is now rather dull, a still further decline of 1c having taken place last week, owing to heavy offerings from the North. There has been some trading at the present price of $1.34 per cental, but for the most part the offerings have been small and the buying easy. The price of spot wheat remains the same and there is small possibility of any export trade from this port developing in the near future, though it now looks as though the North would do considerable exporting during the months of October and November, as shippers have already begun to take freights in that section. Reports from the wheat sections of the Middle West say that rains have interrupted harvesting, threshing and marketing operations sufficiently last week to temporarily prevent the settling of values toward an export level. The spring wheat crop is now made on both sides of the international line and in the Northwest, except about one-third of North Dakota and north Minnesota, where the crop is already cut, and the Manitoba harvest will be general by the end of this week, barring possible but unexpected weather delays. Reports of a short wheat crop in some sections of California and an almost total failure in others are being given daily confirmation though there are a few districts where the crop is almost up to the average.

California Milling	$1 55	@1 65
Cal. No. 1 shipping	1 50	@1 55
Oregon Club	1 50	@1 55

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.35⅝@1.33⅜.

Flour.

The market continues steady, not as yet having been influenced by the large wheat crop which has been harvested in most sections. Dealers acknowledge, however, that a decline is expected as soon as the heavy new crop begins to move. Little export business is now being done here, though some small orders have come in from China and Tahiti. Central America shipments have averaged quite well and are expected to increase as the price of flour settles toward an export basis.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market remains steady, very little change in the market situation being noted beyond a slight strengthening in the market for bright choice lots of spot feed barley. These lots are, however, extremely scarce and are commanding very readily prices ranging from $1.02½ to $1.05, with very little offering even at these prices. No decline is looked for during the next few weeks on good bright lots, as there is very little in sight, but inferior lots can readily be purchased at 95c to $1. There is a large quantity of this class of barley on the market. Reports from the barley-growing sections of California, state that while the barley crop is somewhat lighter than the average it promises much better than the wheat crop, both in quality and in quantity.

Feed, No. 1 good to choice spot	$1 02½@1 05
Feed, fair to good	95 @1 00
Chevalier, No. 1 to choice	1 10 @1 15
Chevalier, common to fair	1 00 @1 07½

Oats.

The oat market is a shade firmer though at prices quotably unchanged, with the exception of new choice red oats, which show an advance on strictly choice lots. These are, however, very scarce. Receipts of black oats are light both in quantity and color, quotations given being for seed varieties. An advance over quotations may be looked for, as many advices from the Pajaro valley and other oat sections say that the oat harvest is now in progress and that the yield will not be more than half as heavy as it should be under normal conditions.

Black oats	$1 45	@——
Red, choice new	1 30	@1 45
Red, fair	1 22½@1 27½

Corn

There is a fair demand for corn for milling purposes and an occasional order for export, and the consequence is that the market remains fairly firm at the quotations given. Receipts were light during the current week and were all taken by the mills at figures about the range given. There has been no speculating in the local market, but the latest advices from the East state that there has been some trading in futures, though not heavy. They also state that the recent rains have practically assured the success of the growing crop in the corn belt.

Large White, good to choice	$1 40	@1 42½
Large Yellow	1 40	@1 42½
Small Yellow	1 50	@1 60

Rye.

Receipts of rye coming into this market are now very light and would indicate that the crop is not large. They are of good quality, however, and this fact, together with a small movement of a jobbing character, combined to maintain prices at figures quoted.

Good to choice	$1 45	@1 50

Buckwheat.

Stocks of buckwheat are very light, those in this market being mostly in the hands of millers, and the reports from these sources are to the effect that they are barely sufficient for immediate milling purposes. The natural consequence of this condition is to preclude the possibility of any movement of a jobbing character, as all lots which come into this market are picked up by the millers.

Good to choice	$1 75	@2 25

Beans.

Blackeyes are being firmly held by their few holders at the advance noted. A brisk buying demand during the current week has still further reduced stocks in these beans as in bayos, which are not to be found in any quantity at the present time. There are large offerings of damaged stock pinks but there is now no good stock in the market, with the exception of a few very small lots which are being held at prices for seed beans. There is a good prospect for the lima bean crop to date, as well as very fair average crop conditions for all other varieties, but little accuracy attends the predictions, as it is a generally recognized fact that from now on the problem is entirely controlled by the weather. The local market is practically bare of red beans and red kidneys, the quotations given being largely nominal.

Small White, good to choice	$——	@3 75
Small White, damaged	1 50	@2 75
Large White	2 50	@2 85
Large White, damaged	1 50	@2 40
Pinks, damaged	1 50	@2 75
Bayos, good to choice	3 75	@4 25
Bayos, damaged	2 50	@3 50
Red Kidneys	3 50	@4 00
Reds	5 50	@6 00
Limas, good to choice	5 50	@5 65
Black-eye Beans	3 75	@4 00

Dried Peas.

Harvesting of Salinas peas is now on and the crop is not very promising. Some Eastern peas are now en route. Stocks are very light and, while there is a little trading, prices remain fairly steady as quoted.

Green Peas, California	$1 85	@2 10
Niles	1 75	@2 00

Hops.

Since the last report the situation with regard to the hop market shows little or no improvement. Jobbing interests in fact rate the market as even weaker than it was a week ago. Prices have not changed materially and there is very little trading either in spot or future, as there is small anxiety on the part of consumers to buy old hops with the new crop so near at hand and with so many large estimates of its size constantly coming in. Several large lots of hops have been offered this week on the Pacific coast market, but so far have found no purchasers. Nor is there any great inclination on the part of dealers to contract for future hops, although it is believed quite currently among local jobbing circles that quite large quantities could be secured at from 13c to 14c. Some dealers are now taking a speculative stand and are discounting the market by offering hops in the Eastern market for January to April shipment at lower prices than they can be contracted for with growers on the coast to-day.

Good to choice 1904 crop, nominal	15	@ 18

Wool.

There are as yet no mountain fall wools arriving, though the clip in most sections is finished. There is very little movement in wool in any part of the country, and on the coast the situation is at present practically dormant. With the exception of a few straggling lots of spring wools, there is nothing arriving in this market at the present time. Such as do arrive are usually picked up by jobbers at about the prices quoted, though buyers are very reluctant at those prices, as the wools are for the most part very defective. Some contracting has been done for fall wools, but, as no market to speak of has as yet developed in the East, trading in futures has not been heavy.

SPRING.

Humboldt and Mendocino	24	@27½
Northern, free	23	@26
Northern, defective	20	@22
Middle County, free	20	@25
Middle County, defective	17	@21
San Joaquin and Southern, free	17	@20
San Joaquin and Southern, defective fall	9	@14
Oregon, valley	25	@27½
Eastern Oregon	16	@22
Nevada	18	@22

Hay and Straw.

There has been a marked decrease in arrivals of hay during the past week, the total amounting to 4500 tons in comparison with 5700 for the week preceeding. Otherwise the situation remains unchanged with perhaps a smaller percentage of the better grades of hay arriving. There has been no decline in prices and all handlers of hay are endeavoring to prevent a further drop. Some are now disposing of purchases made earlier in the season and this is tending to prevent a slump. There seems to be little chance for an improvement in the situation in the near future as there is hay enough still out of doors to keep the San Francisco market overcrowded during the next two months.

Wheat, good to choice	$ 9 50	@ 14 00
Wheat and Oat	8 00	@ 12 00
Tame Oat, fair to choice	7 50	@ 11 00
Wild Oat	5 00	@ 8 00
Barley	6 50	@ 9 00
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 10 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	30	@ 50

Millstuffs.

The market continues firm and very steady on all kinds of millstuffs. Cracked corn is very scarce and the market is a shade firmer owing to heavy buying demands, but at quotably unchanged prices. Bran and middlings continue very scarce, the supply now on hand at the mills being barely sufficient to supply the rather heavy demand. Prices on these, as well as on all other varieties, remain unchanged, though the market seems a shade stronger. Shorts is nearly now out of the market, and it is probable that if the brisk demand continues a scarcity of this article will result.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 50
Middlings	28 00	@ 30 00
Shorts, Oregon	22 00	@ 24 00
Barley, Rolled, choice	22 00	@ 22 50
Cornmeal	30 00	@ 30 50
Cracked Corn	32 00	@ ——
Oilcake Meal	33 50	@ 35 00
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

Mustard harvesting in the Lompoc valley is now at its height and it is expected that within the next two weeks all the new crop not already sold for immediate shipment will be warehoused. The bulk of the crop of red mustard seed has already been sold and will be shipped East shortly. The top quotation in red mustard seed is what has been paid to growers in this market, but it is likely that lower prices will prevail unless Eastern buyers advance their ideas considerably. Yellow mustard is finding a slow market, none having changed hands over 3c.

Flax	$2 25	@ 2 50
Mustard, Yellow	3 00	@ 3 10
Mustard, Trieste	4 00	@ 4 25
			Per lb.
Canary			6½@ 7
Rape			2½@ 3
Hemp			3½@—
Timothy			5 @ 5½

Honey.

The market is still very weak, though prices are being well maintained by apiarists, and not without cause, as advices from some of the most important honey raising districts say that the yield of honey will fall far below the average this year owing to cool weather during the months of May and June when the wild flowers are in full bloom.

Extracted, Water White	5	@ 5¼
Extracted, White	4¾@ 5
Extracted, Light Amber	4	@ 4½
Extracted, Amber	3½@ 4
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	9	@10
Amber Comb	7	@ 8

Beeswax.

The market continues very easy. Receipts have been light but show an excellent quality and are easily commanding the prices quoted. The light crop of honey for this season will doubtless produce a corresponding shortage in the size of the beeswax crop and may soon have the effect of advancing prices. Growers are anticipating this and are holding firmly for the prices quoted.

Good to choice, light ₱ lb	27	@29
Dark	25	@26

Live Stock and Meats.

The market is a shade weaker than at last quotations, a decline of ½c being noted in the price of first quality beef. Other grades are bringing the same prices as formerly, the only effect being a slight weakening in off grades but not sufficient to materially change prices. A decline in these grades is also looked for, as they are being entirely neglected owing to the low price of first grade. There are no yearling lambs now offering in the local market. Spring lambs also show a decline of ½c per pound.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4	@ 5½
Beef, 2nd quality	3½@ 4½
Beef, 3rd quality	3	@ 3½
Mutton—ewes, 6@6½c; wethers	7	@—
Hogs, hard grain, 130 to 200 lbs	5¾@ 6
Hogs, large, hard, over 200 pounds	5½@ 5¾
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	5	@ 7
Veal, small, ₱ lb	8	@ 9
Lamb, spring, ₱ lb	8	@ 8½

Hides, Skins and Tallow.

Hides are very firm and on the whole the situation is probably stronger than it was a week ago, although dealers claim that in general quotations are unchanged. It is admitted, however, that good Southern hides have in some cases brought as high as 13½c for heavy steers, and there are reports of as high as 14c having been paid. The leather market is fairly active and it is believed that the situation will keep hide values at the present point for some time to come.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.		Culls.	
Heavy Steers, over 56 lbs	13	@—	12	@—
Medium Steers, 48 to 56 lbs	12	@—	11	@—
Light Steers, under 48 lbs	11½@—		10½@—	
Heavy Cow Hides, over 50 lbs	11½@—		10½@—	
Light Cow Hides, under 50 lbs	11½@—		10½@—	
Stags	7	@ 8	7	@—
Wet Salted Kip	10½@—		10	@—
Wet Salted Veal	12	@—	11	@—
Wet Salted Calf	13	@—	12	@—
Dry Hides	19	@—	19	@—
Dry Kip and Veal, 11 to 16 lbs	16	@17	15	@—
Dry Calf, under 4 lbs	20	@21	19	@—
Pelts, long wool, ₱ skin			1 50@2 00	
Pelts, medium, ₱ skin			90@1 25	
Pelts, short wool, ₱ skin			60@ 90	
Pelts, shearling, ₱ skin			20@ 50	
Horse Hides, salted, large prime, each			3 00@—	
Horse Hides, salted, medium			2 75@—	
Horse Hides, salted, small			2 25@—	
Horse Hides, dry, large			1 75@—	
Horse Hides, dry, medium			1 50@—	
Horse Hides, dry, small			1 00@—	
Tallow, good quality			4	@4½
Tallow, poorer grades			2½@3½	

Bags and Bagging.

The market is entirely bare of grain bags with the exception of a few scattered lots, and these are not to be had at prices under 7½c. A good many second-hand bags are now moving at prices nearly equivalent to those ordinarily procured for new stock. The extremely large yield of grain in the north is mainly responsible for the early shortage of stock. Other varieties are ruling firm at quotably unchanged prices.

Bean Bags	$ 5½@—
Fruit Sacks, cotton	7 @7¾
Fruit Sacks, jute, as to quality	6 @7½
Grain Bags, Calcutta, 22x36, spot	7½@7¾
Wool Sacks, 4-lb	33 @—
Wool Sacks, 3½ lb	30 @—

Poultry.

Receipts are inclined to be somewhat heavy, but, nevertheless, the market continues in good shape and the demand is fairly active. Fancy stock of every description is in good request and is easily bringing the prices quoted, with some very choice lots of young fowls going a shade higher.

Turkeys, choice Young, ₱ lb	$ 23	@ 25
Turkeys, live gobblers, ₱ lb	19	@ 21
Turkeys, live hens ₱ lb	20	@ 22
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	5 50	@ 6 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 50	@ 7 00
Fryers	3 50	@ 4 00
Broilers, large	2 50	@ 3 00
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	4 00	@ 4 50
Ducks, young, ₱ dozen	4 00	@ 6 00
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	——	@ 2 00
Pigeons, old, ₱ dozen	1 25	@ ——
Pigeons, young	1 25	@ 1 50

Butter.

The market is firm and prices are holding steady at quotations. Receipts are of

fair size and good quality and this fact supplemented by a good demand and favorable weather is having the effect of strengthening the market for fancy stock, notwithstanding that there is considerable request for storage varieties.

Creamery, extras, ℔ lb	23	@25
Creamery, firsts	22	@23
Creamery, seconds	20	@21
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	21	@22¼
Mixed Store	17	@18

Cheese.

Market firmer, all grades in all varieties showing an advance of ¼c. Receipts have been quite large, but, owing to a brisk demand and excellent quality, prices are being well maintained at the advance noted.

California, fancy flat, new	11	@12
California, good to choice	10	@10½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13¼
Eastern, new	15¼	@18¼

Eggs.

The market is inclined to be sluggish under only normal receipts. Selected ranch eggs, however, are an exception to this rule and are a shade firmer, though at quotably unchanged prices. Quotations given are for actual sales in this market.

California, select, large, white and fresh.	28	@30
California, select, irregular color & size.	22	@24
California, good to choice store	18	@22
Eastern firsts	20	@22
Eastern seconds	17	@19

Potatoes.

The market is much stiffer and a substantial advance in prices is noted, due to a large demand for northern shipments. This condition is also partly accounted for by the fact that for the first time this season there has arisen an export demand from Australia. Salinas are now ruling at from $1 to $1.25, but dealers prophesy a falling off as soon as the Australian boat leaves this port.

Cal. Early Rose, ℔ cental	50	@	60
River Burbanks, ℔ cental	60	@	75
Salinas Burbanks	1 00	@	1 25
Chile Garnet, ℔ cental	50	@	60
White Rose, ℔ cental	65	@	75

Vegetables.

The market is with one or two exceptions a shade stronger than at last reports and the general tone may be said to have been fairly steady for this kind of produce. The onion market is much firmer, owing to a large shipping demand from Australia. It is estimated that the Ventura which leaves this port Sept. 21st will have on board a cargo of onions consigned to Australia consisting of something in the neighborhood of 10,000 crates. There are now no red onions of any grade in the market, but Australian brown onions may be quoted at 80c to 90c per cental. Peppers are still weaker and tomatoes are somewhat firmer, owing to light receipts and cooler weather which makes them of better quality.

Beans, Lima, ℔ lb	7	@	—
Beans, String, ℔ lb	2	@	4
Beans, Wax, ℔ lb	3	@	4
Cabbage, choice garden, ℔ 100 lbs	50	@	—
Corn, Green, ℔ crate	50	@	1 00
Egg Plant, ℔ box	70	@	85
Garlic, ℔ lb	4	@	5
Onions, New Yellow Danvers, ℔ ctl.	80	@	90
Peas, Green, ℔ lb	3	@	3½
Peppers, Bell, ℔ box	35	@	40
Peppers, Green, ℔ box	25	@	50
Summer Squash, per large box	15	@	35
Tomatoes, ℔ box or crate	75	@	1 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Receipts of all kinds of fruits now in the market, with the exception of apples and peaches, have been heavy and, for the most part, of excellent quality. The weather has been very favorable to the keeping of fruit and the consequence is a slight strengthening of the market. Apples, on account of the extreme shortage of the crop and the fact that all grades, except very choice, are difficult to get in the local fresh fruit market (owing to the fact that they have been mostly picked up by dryers) are ranging slightly higher in price. The market is now well supplied with cantaloupes, both in crates and in boxes. Huckleberries are somewhat weaker and loganberries are out of the market entirely. Other berries of all kinds are higher in price and rather scarce, Longworth strawberries bringing $8 to $10 per chest. Santa Clara strawberries are now being quoted in the market at $6 to $7 per chest.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 25
Apples, good to choice, ℔ 50-lb. box	60	@	85
Apples, fair to good, ℔ 40-lb box	40	@	50
Blackberries, ℔ chest	2 00	@	3 00
Cantaloupes, pony crate	1 00	@	1 50
Cantaloupes, ℔ box	25	@	50
Crabapples, ℔ small box	60	@	75
Figs, ℔ one layer	35	@	50
Figs, ℔ two layer	75	@	1 00
Grapes, Seedless, ℔ crate	75	@	90
Huckleberries, ℔ lb	7	@	9
Peaches, ℔ large box	75	@	1 25
Peaches, ℔ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	85	@	1 25
Plums, large, ℔ crate	40	@	75
Plums, ordinary, ℔ box	30	@	50
Raspberries, ℔ chest	6 00	@	8 00
Strawberries, Longworth, ℔ chest	8 00	@	10 00
Strawberries, large var., ℔ chest.	5 00	@	6 00
Strawberries, Santa Clara, ℔ chest	6 00	@	7 00
Watermelons, ℔ doz	75	@	2 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The market continues very firm and prices are being well maintained at figures quoted. Old stocks have been still further reduced this week by a brisk buying demand on the part of consumers. No old crop nectarines are left in the market and the new crop is expected to open at 7c per pound. Advices from the East say: "In connection with the strong and advancing market for California prunes, a prominent commission house has issued the following comparative statement of the world's supply of prunes:

	1904, Lbs.	1905, Lbs
France	*60,000,000	60,000,000
Bosnia and Servia	70,000,000	50,000,000
California	150,000,000	75,000,000
Oregon	15,000,000	15,000,000
Carryover United States	40,000,000	10,000,000
Totals	335,000,000	210,000,000

*With carryover.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6½@ 7
Apples, extra choice to fancy, 50-lb boxes.	7¼@ 7½
Apricots, Royal, good to choice, ℔ lb	7 @ 7½
Apricots, Royal, fancy	8½@ 9
Figs, 10-lb box, 1-lb cartons	5½ @6½
Nectarines, White and Stanwick, ℔ lb	5 @ 5½
Nectarines, red, ℔ lb	—@ 4½
Peaches, unpeeled, good to choice	7½@ 8
Peaches, unpeeled, fancy to extra fancy	7½@ 8½
Pears, standard, ℔ lb	6½@ 7
Pears, choice to fancy	7½@11
Plums, Black, pitted	4½@ 5½
Plums, Red, pitted	6 @ 7½
Plums, Yellow, pitted	5½@ 7½
Prunes, Silver, good to fancy	5 @ 6½
Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3½@3½c; 70-80s, 2¾@3c; 80-90s, 2½@2½c; 90-100s, 2@2¼c; small, 1¾@2c.	

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3¼
Figs, White, in bulk	2½@ 3
Figs, Black	3½@ 4

Raisins.

The market is a shade firmer and seedless Muscatels have advanced ½c and Sultanas ½c. There is, however, very little strictly choice stock now on hand, and there will be very little of any kind when the new crop begins to arrive. Trading in futures is very light, as it is known that the Growers' & Packers' Association combine has the price situation practically in its own hands, making speculating on the coming crop too great an uncertainty to risk.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4⅛	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4½		c

Citrus Fruits.

The market for citrus fruits is now in very good shape, a brisk buying demand having kept prices very steadily at the figures quoted, with the exception of Valencia oranges, which are ruling very strong with a tendency toward further advancement, owing to very limited receipts. Reports from the southern part of the State say that from recent estimates made of the citrus crop for the next year, indications point to a record breaker. That there will be upwards of 35,000 carloads is almost a certainty and some estimates place the yield as high as 40,000 cars. If the estimates given prove correct, next season's crop will break the record by fully 5000 cars, as the present season is now doing by about 3000 cars.

Oranges, Valencias, ℔ box	2 00	@	4 00
Lemons, California, select, ℔ box	3 00	@	3 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ℔ box	1 50	@	2 00
Limes, ℔ box	5 00	@	8 00

Nuts.

The market continues steady and good. Stocks were still further cleaned up, and it is now thought that the carry-over will be very light. There are no old stock almonds now in the market, but a few new crop Nonpareils are beginning to come in and are opening at prices around quotations. It is expected that prices on walnuts will be made by the associations about Sept. 15th, and they will probably rule high, on short crop prospects here.

Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	12 @13
Cal. Walnuts, No. 2 soft shell	7 @ 7½
Cal. Walnuts, No. 1 hard shell	11 @—
Cal. Walnuts, No. 2 hard shell	7 @ 7½

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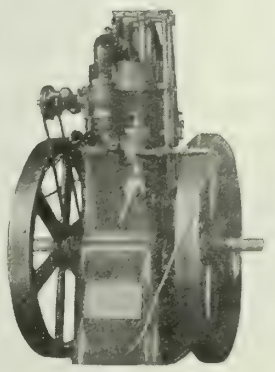
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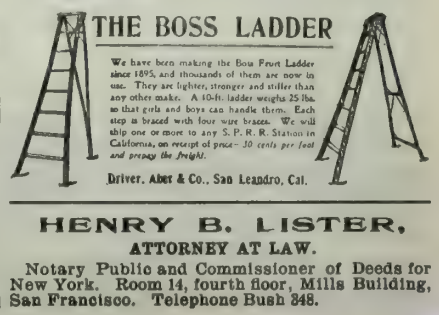
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Gold Dredging in California.

Inasmuch as so many are selling farming lands for mining purposes the gold dredging industry in California is increasing in agricultural interest with each year. From a very small beginning made nearly forty years ago, it has grown and expanded, particularly within the past decade, until it has become one of the most notable factors in the gold production of that State. This industry has been made the subject of official inquiry by the State Mining Bureau of California, and the latest bulletin issued by that institution is devoted to the subject of gold dredging as practiced in all its phases in California and from which the following is taken:

History.—It is popularly supposed that mining for gold with dredgers is an industry which has grown up within the past decade and that it was a success almost from the beginning. This is not true There are bleaching skeletons of dredgers scattered over California and New Zealand, some of which were built nearly half a century ago. There was a dredger near Oroville, on the Feather river, in the '50s. It is over forty years since dredging was first tried in New Zealand. Spasmodic attempts were made in this direction on the Pacific coast and in New Zealand from that time on. These efforts, futile as they were, so far as giving dividends to shareholders go, were of great value to the miner and mining engineer of to-day. These failures were their warnings.

Any one investigating the processes at Oroville or Folsom, or in New Zealand, where conditions are known by actual practice, will find that the difficulties have been largely overcome, because the conditions have been studied by skilled men at large expense and met with appliances fitted for the local needs, not only as to the digging of the ground, but also as to the saving of the gold.

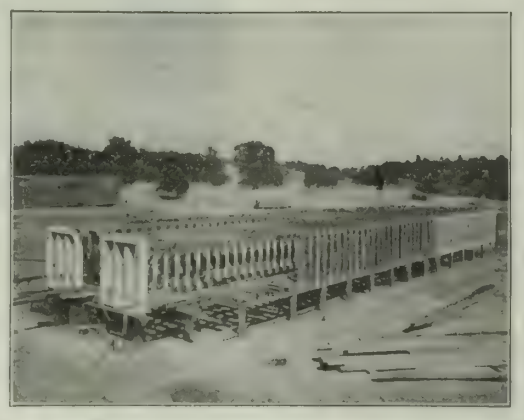
But under other conditions, in other districts, the dredgers so successful at Oroville or Folsom or in New Zealand would be failures as to some of their parts. To explain: At Oroville the gravel is loose, free from clay. There are no large boulders, the bedrock is soft, the gold is fine and it easily amalgamates. Along the streams in the mountains of California the boulders are larger, the bedrock harder, and in places in Idaho and Colorado the gold will not amalgamate owing to the presence of arsenic. Then there are many other conditions that differ in other places. Some of these difficulties may be overcome by slight changes, either in the digging part of the dredger or in the gold-saving appliances; but some of them, such as hard bedrock, in cases are fatal to successful dredging.

The conditions bearing on the cost of operation are such that each tract of ground becomes a problem in itself, and any attempt to use the costs obtained under one set of conditions, on which to predicate those which would hold under another, without a thorough knowledge of the various elements which enter into the problem, will lead to large discrepancies between the results predicted and those actually obtained, with a consequent possible failure of the enterprise.

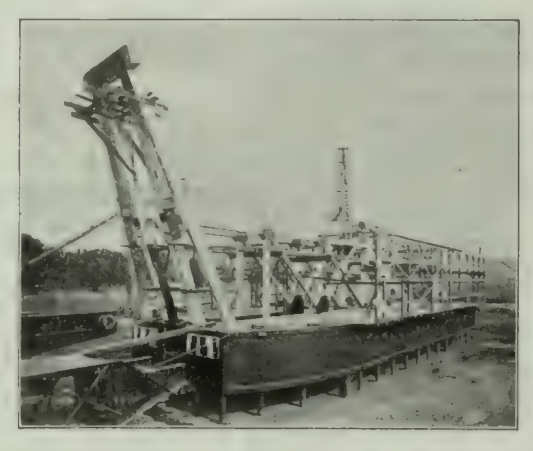
There have been built in California many dredgers that have failed and become total losses. Yet to-day, with all the data at hand for any careful investigator, there should be little excuse for failure. The varying conditions that exist where dredging is being done at Oroville, Folsom, in Trinity county, in Idaho, Montana, Colorado, British Columbia, the Klondike, Alaska and New Zealand, both as to the digging of the gravel and the saving of the gold, give the miner the actual experience necessary for him to come to conclusions under most circumstances.

The single-bucket or spoon dredger was evolved in New Zealand in the early '60s and was worked entirely by hand. A steam single-bucket dredger was built in 1870. About 1880 bucket-and ladder dredgers were introduced. These were nearly all worked with power furnished by current wheels. The first steam chain bucket dredgers of the present type were introduced about 1882. One dredger of this class, built about that time, was successfully worked for sixteen years. On account of the success of a dredger in 1889 on a branch of the Molyneux river, some twenty were built at an average cost of $17,500, but were failures, owing mainly to the fact that the ground was not suitable for dredging and the management bad. Many of these dredgers were floated down to the Molyneux river and under new ownership were made successful. Then a number of suction dredgers were built, but proved complete failures. Since then the endless-chain bucket dredger, similar to those used in California, has held the field. In New Zealand at the end of 1902 there were 201 dredgers working, 52 standing, 23 building, 14 under removal and 2 wrecked—a total of 292.

The first successful endless-chain bucket dredger in the United States was built in 1894 at Grasshopper creek, in Montana. Many attempts to dredge had been made on the Pacific coast, but it was not until 1897 that a dredger of the present type was built in California. In the summer of 1895 W. P. Hammon and Warren Treat, who were interested in horticulture near Oroville, were working some gravels for gold on property now owned by the Feather River Exploration Co. Mr. Treat had made a pit about 100 feet square down to bedrock, using a centrifugal pump to keep the water out, and hauling the gravel in wagons out to small sluice boxes, where it was washed. The gravel was handled several times by manual labor, and in spite of the heavy cost for labor and pumping water, there was a profit. Mr. Hammon had another pit, but on approaching bedrock found that the great amount of water coming in would make mining at a profit difficult.



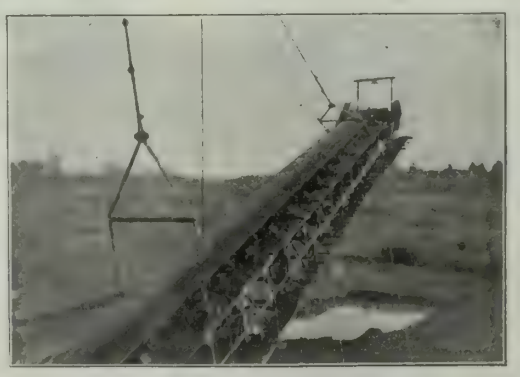
Framework of a New Dredger in the Pit.



Hull Completed and the Gantries Up.



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The attention of the writer was called to these cases and he visited the property, and, after consulting with Mr. Hammon as to the best process for working, suggested hydraulic elevators; but it was found on investigation that the distance necessary to convey water, and the large amount of water in the ground itself to be handled, would make this impracticable. At that time little was known of dredging in California. However, some of the land had been purchased through Mr. Hammon and A. F. Jones. A few months later Thomas Couch and F. T. Sutherland, from Montana, were in San Francisco, Cal., looking for mining properties. To them was suggested the Feather river gravels, and there they went, and, with Mr. Hammon, after prospecting for about a year, purchased 1000 acres, which are now being worked by five dredgers.

While they were prospecting this ground, R. H. Postlethwaite, a New Zealand engineer, who had come to California to look over the dredging field, had constructed by the Risdon Iron Works a 3½-cubic foot bucket dredger to be used near Smartsville, on the Yuba river. While the dredger itself was satisfactory, the conditions did not permit of final success in working.

The first dredger at Oroville, built for the Feather River Exploration Co., began work March 1, 1898. It was designed by Mr. Postlethwaite and built by the Risdon Iron Works. This dredger is still being successfully operated; it has been strengthened, however, in parts.

Steam was used at first, but now all the dredgers in the Sacramento valley districts are worked by electric power. During the first two years of successful dredging at Oroville with endless-chain bucket dredgers, a number of attempts were made to dredge with suction and other styles of dredgers; but all these, with the exception of one steam shovel dredger, were failures.

Area of Dredge Gravel.—The following table will show in a general way the acreage of gravel under consideration for dredging. It is probable that these figures will in many cases be increased and other districts opened:

District.	Acreage.	Average Value per Cubic Yard, in Cents.
Oroville	7,500	17
Yuba River	5,000	25 to 30
Bear River	1,000	18 to 30
Folsom	5,000	15 to 25
Calaveras	350	16 to 22
Stanislaus	1,200	15 to 30
Trinity	1,000	.....
Shasta	1,500	.....
Siskiyou	1,000	.....
Plumas	1,500	.....
Total	25,050	

In Stanislaus county considerable prospecting has been done and about 1200 acres have been proved to contain values sufficient to warrant dredging.

In Shasta county drilling is being done on Cottonwood creek and on land opposite Redding, on the Sacramento river, and on Clear creek.

In El Dorado county some land on the South Fork of the American river, near Coloma, is being considered, but not yet reported proved.

In all these districts, and at other points in the Sacramento watershed especially, there are considerable areas of dredge gravel, most of which have been more or less examined, but not proved to be of sufficient value to work at the present cost.

The best dredge authorities claim that by proving good grade of pay in some of this outlying ground and reducing working costs, at least 25,000 acres will in time be added to the fields which it is already decided to dredge in the Sacramento valley.

In this connection experiments are being made with a view to working by a process similar to the present dredging system, but at a much lower cost. Those interested do not care to give out any data at present.

It may seem a simple thing to those who know to say that there is a great diversity in methods of gravel mining caused by varying conditions of the deposits, and that the method in vogue in one case may mean failure in another. Yet the want of this knowledge has been the cause of immense waste of capital. There have been large sums of money lost in trying to hydraulic drifting ground. Attempts have been made to use hydraulic elevators to work dredging ground where there was an excess of water to be handled. Dredgers have been built to work ground that could be worked only by means of hydraulic elevators. There are many thousands of acres of gravel, mostly lacustrine deposits, in California and other States and Territories on the Pacific coast and in Alaska that is free from water and should be worked with steam shovels, which people are now exploiting with a view to working with dredgers. In other words, they are proposing to make a condition—by flooding the ground with water—that means an unnecessary cost. A study of the conditions existing will lead to conclusions as to the methods to be adopted, and in this way only can economic success be made.

In connection with the question of reclaiming these dredging grounds, it may be mentioned that James H. Leggett, owner of dredgers at Oroville, has begun some experiments by planting eucalyptus and olive trees on the rock piles, with a few spadefuls of earth at the root of each tree, and they are thriving.

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We also own the following cows in the St. Louis Tests:

Dorinda Darling,
Prize May's Duchess 2nd,
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The herd is rich in the blood of others in that test.

Also, have a herd of Gernseys selected with great care.

Prize winning Berkshires.

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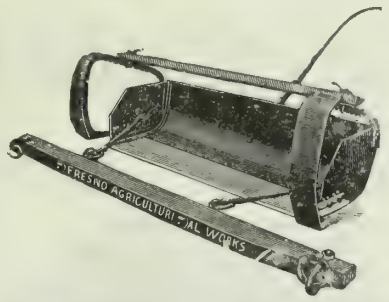
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Glenn County, - - California.

FOR SALE IN SUBDIVISIONS.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular rips

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Elbe.

For further particulars and for maps, showing the subdiv'sions and prices per acre, address personally or by letter,

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FOR SALE in San Diego County.

22 ACRES IN FULL BEARING AND PAYING WELL.

Only reason for selling is advanced age of owner, who is unable longer to carry it on. This is a genuine bargain for a man who has experience in fruit culture and is willing to work. It will prove a fine investment.

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A Bargain in Land.

110 acres of the finest berry, seed, vegetable, alfalfa, dairy and apple land to be found in the valley. Soil deep, dark, rich alluvial Within three miles of Palo Alto, in the artesian belt. No improvements. Good roads to the property. We are authorized to sell this property far below its real market value Price $130 per acre.

If at all interested in this class of property, it will pay you to investigate this tract

We have but a limited time to offer the property at this price.

JOHN F. BYXBEE,

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Ranch Wanted.

WILL PAY CASH FOR A GOOD PAYING Ranch where I can make something more than a living. Must be a bargain for cash.

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320 Acres of Reclaimed Land adjoining the town of San Rafael.
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THE DAIRY.

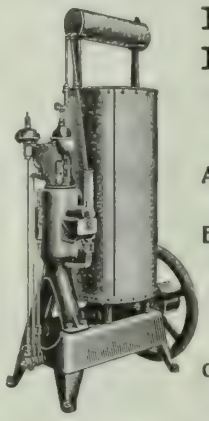
Instead of the Silo.

We have had the silo side of cow feeding quite fully discussed. Another view is that of Mr. O. J. Vine of Selma, as given in the Dairy and Produce Review. He says: Many California dairymen may be discussing this question in their minds and are not able to decide. The silo has many strong advocates, and in any cold climate is almost indispensable. The writer has used one a number of years in Ohio, and found it a decided advantage over the old method of feeding. There we had to depend entirely upon stable feeding for five or six months in the year. Without the silo it would have been impossible to provide succulent feed for winter's use, and it is no wonder the silo has so many advocates; but because the silo is such a marked success there, does not prove that it would be an equal success here, where conditions are entirely different. Here we can easily provide several kinds of green feed for all winter's use, either as pasture or stable feeding. Indian corn or sorghum will produce large quantities of excellent feed that, if cut up in large shocks before being frosted, will keep in good condition in the field until late in the winter. It is a palatable feed that will be readily eaten by all kinds of stock, including horses. Pigs are very fond of sorghum, and grow rapidly upon it. A trial is all that is necessary to convince stockmen of its value. While either corn or sorghum can be fed whole, there will be much less waste if cut or shredded before feeding; then, if not fed too generously, none will be wasted. Wheat, rye and barley all make splendid feed to use green in winter, and can be pastured, or cut and fed in the corral. The latter entails more labor but is far less wasteful of feed. Oats and Canada peas sown together are unsurpassed for green winter feed, and have the advantage of being a more balanced ration than wheat, rye or barley—the peas being very rich in protein. This mixture is not as desirable for pasture, however, as for stable feeding. The peas, having slender stems, break down so readily from stock running over it that much would be wasted. Pumpkins and squashes are valuable for stock and milch cows. They are easily grown and can be kept until January with only a little straw or litter thrown on them to protect from frost. With a little forethought and preparation, the dairyman can easily provide plenty of green feed for his herd without incurring the expense of a silo and the necessary machinery for filling it. The cost of a silo large enough for the feeding of a herd of twenty-five cows will cost from $100 to $200, depending upon the manner of construction. The cutter will cost another hundred, making the silo a rather expensive luxury. This expense can be obviated by the growing of different crops and somewhat different management.

State Fair Butter Exhibit.

The usual competitive butter exhibit will be held again at the California State Fair which opens September 2d and closes on the 9th. The dairy department will again have Mr. Geo. G. Knox, the well-known Sacramento creamery man, as superintendent. Mr. Knox filled the place very creditably last year. Secretary W. H. Roussel of the California Creamery Operators' Association has received word that the department will be conducted about the same as during the past few years. No entry fee or exhibitor's ticket will be required of those who enter their product in the butter and cheese contest. The prizes will be the same as heretofore, that is, in case of butter there will be $375 in cash offered to be divided among the ten exhibitors whose names stand at the head of the list of scores. In addition to these cash awards the one who wins the highest score will receive a State Fair gold medal.

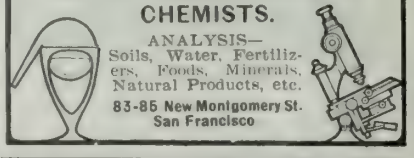
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Starts Fortune
If you had a gold mine would you waste half the gold? Dairies are surer than gold mines, yet farmers without separators only half skim their milk. Tubular butter is worth 25 to 35 cents. Cream is worth one cent fed to stock. Are you wasting cream?
Sharples TUBULAR CREAM SEPARATORS
Like a Crowbar
Tubulars are regular crowbars—get right under the trouble. Get the cream—raise the quantity of butter—start a fortune for the owner. Write for catalog U-131
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CHEAPEST and BEST ENGINE MADE
Write us for lowest cash price and catalog—it will surprise you.
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No. 1½ "Jersey" Cut-under Truck.
This truck is the result of years of endeavor to produce a wagon that has great carrying capacity, ample strength without superfluous weight, low enough to the ground to minimize the labor of loading. Can turn short among trees, and can be used on the roads as well as on the farm.
The "Jersey" is a pronounced success, not only for the transportation of fruit, but as a general purpose dray in villages and small cities. Capacity 2000 to 3000 pounds.
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The Best is the Cheapest in the Long Run.
We handle only the best make of

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and guarantee them for service
X-RAY and DANDY.
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Pacific Coast Agent for Challenge Line of Pumping Goods.
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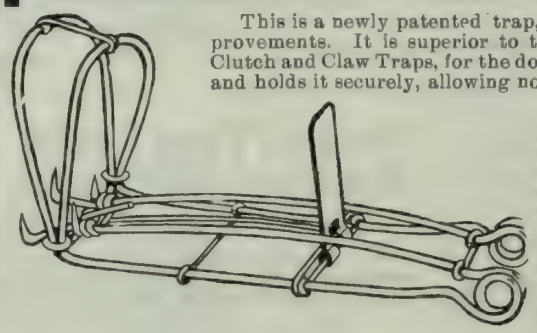
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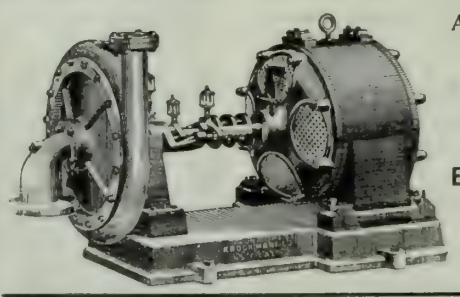
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—For Sale by—
A. O. RIX,... IRVINGTON, ALAMEDA CO., CAL.

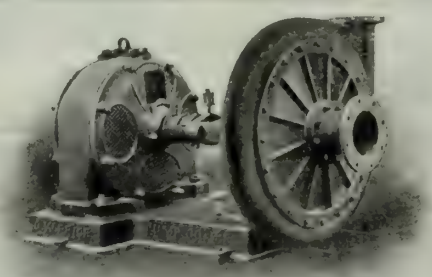
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Make Your Cows Keep You.
With an Easy Running
Empire Cream Separator
Your cows will not only keep themselves, but will bring you dollars in profits. A postal to us will bring the proofs.
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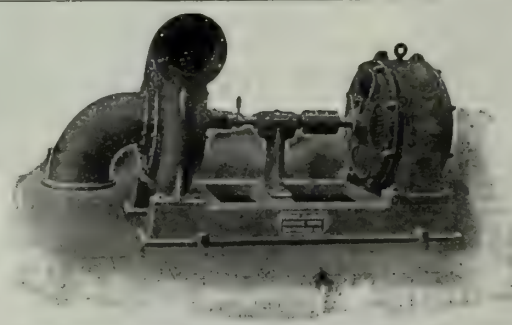
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AND OUR LINE OF DAIRY AND CREAMERY MACHINERY
are far superior to other like goods. The cost, efficiency and durability considered, are no higher than so-called cheaper grades. Everything on hand for the Dairy and Creamery. Write for Catalogues. Mailed free.
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TRAPPED TO STAY TRAPPED
The trouble with most gopher traps is that they permit the rodent to escape after the trap has been sprung. This not only makes the old style traps worthless, but prevents the recapture of the gopher. The only sure means of destroying gophers is with the
IMPROVED C. V. 2-RING GOPHER TRAP.

This is a newly patented trap, embodying all the latest improvements. It is superior to the Single ring, as well as the Clutch and Claw Traps, for the double ring disables the gopher and holds it securely, allowing no chance for escape.
See that you get the genuine Improved C. V. 2-Ring. Sold everywhere for 25c.; or if your dealer does not have them, send us his name and 25c. for sample trap or $2.50 for a dozen, which we will forward postpaid.
Falls Manufacturing Co.
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FRUIT MARKETING.

The Glasgow Fruit Market.

To the Editor:—Wandering this morning through Glasgow streets my mind's eye was regarding the California fruit grower and his interests. He and they have long been dear to me, and I wanted to see how he was regarded in Glasgow.

When in doubt, ask a policeman. This I did, and obeying instructions, as usual, I soon found myself in quite a lively fruit market. The hour was about 9 A. M. I had been told there were no auctions. I ran into four, but not of California fruit. The auctioneer was alert and tonguey. He knew his buyers, and when the price was once made by the bidders the rest of the lot was knocked down with lightning rapidity to the buyers, who raised fingers to indicate how many each wanted. There was no raising or lowering the price on the remainder of a line of goods when the first lot was knocked down. Of course different brands fetched different prices. These prices ran as follows:

Tomatoes (Scotch), raised under glass, 7c to 9c per lb.

Raspberries, 60c to 96c per dozen 1-lb baskets. Some of these had been roughly handled and had settled till the baskets seemed barely a third full.

Gooseberries (fine sulphur, described as), $2 90 per 112 lbs.

Red currants, 7c per lb; white, 5c; black, very fine, 8c.

Strawberries, 85c and upwards for 12 1-lb baskets.

Red Orleans plums, 7c per lb.

These prices were to the better class of buyers for the best class of fruit.

The other auctions seemed to be of inferior stuff with a distinctly different grade of buyers, costermongers and such. In all cases the auctioneer stood and clerk sat on a raised platform, at the end of two rows of raised benches or steps, the uppermost guarded by an iron rail at the back. The stuff moved just as quickly as the attendant could throw it on the table, after the price was once made.

Other foods on the market, but not up at auction, were Portugal and Tasmania apples. The former packed in boxes something like a clumsy, flattened orange box. The latter in boxes like our coal oil (10 gallon) cases, but undivided. They sold at 11s to 13s per case.

Very nice Spanish onions at $1.20 the case of 140 lbs were in evidence.

French peaches, packed carefully in cotton, 1 dozen in a box, were selling at 1s 3d each.

Green gages, in smaller boxes with lace paper trimmings, about 30 in a box, fetched 1s 6d.

Hothouse grapes (Scotch, very fine), made 30c per lb.

Some few California Bartletts were visible, at about 12s 6d per half box. They were quite green and hard still.

California Burbank plums from Vaca valley were selling at $2.52 per case.

French pears (scrawny Bonnie Louise) put in an appearance at 96c per half case.

Spanish melons, 2 dozen in case, were for sale at easy figures.

Cauliflowers, rather indifferent, from Portugal, new, going at a few pence per box.

Flowers, in boxes, were also auctioned at one stand; marguerites, 1s per dozen bunches, lovely sweet peas at 2s, and carnations (Duchess of Fife) at 4s.

The auctioneer, after the manner of auctioneers, indulged in much pleasant raillery and banter, exhorting his hearers to "buy early and buy often," and even ran into rhyme—

Come away,
Here to-morrow and gone to-day, etc.

One thing specially pleased me, and that was to hear California fruit so well spoken of by all. I had heard so often from such fond partisans that English apples were 'way ahead of California. Here, in the center of the fruit experts, I heard just the reverse, and the only claim made, was that for tart pie fruit the English orchards produced the right stuff, but our Newtown Pippins were perfection.

I think California will peacefully concede the superior sourness of British apples. So long as California remains sweet, let who will be tart and sour.

I'm on my way to California, but I am going by London and Europe generally. Edward Berwick.

Orchards Sold to Dredge Mine Company. — Gridley Herald, Aug. 18: Gradually the orchards that were planted along Feather river and which were thought to be splendid evidence of the thrift and enterprise of the land owners, and which, too, were believed to be the foundation of a great and permanent industry, are yielding to the encroachments of the dredge miners. The latest deal by which a fine orchard passes to the ownership of the mining men, reserved for destruction even to the permanent ruin of the land itself, is that of the sale of the Hilger Bros. orchard on the east side of Feather river, opposite the intake of the Butte County canal. This orchard is said to have been sold within the past few days and the price paid for it was $250 an acre. It is also stated on good authority that the Treat orchard, near Chardon, has been purchased by the Boston & Oroville Company and that the price paid for the land was $70,000. A prospecting drill was working on this place last Sunday and it may be that the deal has not been closed as yet. However, it is known that gold in paying quantities underlies the orchard, and there is no doubt that the sale will be made, if it has not already been arranged.

Biggest Bean Yield.—Oxnard Courier, Aug. 18: The lima bean crop this year promises to be the biggest thing in the history of the county. This is the consensus of opinion of observing men who know beans and who have watched Ventura crops for years past. Isolated cases are heard of, where a shortness is predicted. The vines and pods are growing in these morning fogs, and the general appearance of the crop was never better. But appearances do not always make a crop. Nevertheless, this year the crop promises as it looks and it is safe to predict a record-breaker. John W. Newby, who runs the ware house at Montalvo, said they were putting up a new warehouse at El Rio, whose dimensions were to be 200x80 feet, to be completed in about three weeks, but that from appearances of the lima bean crop the warehouse should have been as big again—that all the room possible would be needed for bean storing. If the limas turn out like earlier beans are turning out, everything will be satisfactory. This is particularly the case with the blackeyes. This odd bean is yielding well. This bean is now quoted ot $3.25 per hundred. Because selling so low last year fewer acres were planted in blackeyes this season, and where there were 50,000 sacks raised last year there will be about 30,000 this year. The blackeye finds a market largely in the Southern States, where the negroes use them. The blackeye makes a palatable soup that is a cross between a pea soup and a bean soup.

Peach Crop on the Rancho Chico. —Chico Enterprise, Aug. 18: Rustling the peach crop on the Bidwell ranch makes many tired backs and sore thumbs. It appears that about every variety of peach ripened about the same time this year. Foreman Bohlander has had a hundred pickers busy for a few weeks, and now has that end of the work well in hand, and a few more days will finish the picking. The Bidwell crop was sold to the California Fruit Canning Co., orchard run as gathered and delivered, either at the cannery or the dry yards, on the Bidwell ranch. The delivery now amounts to 700 tons, the orchard run as shown by the boxes now in the sheds making an unusually good average in both size and quality. The cannery has been crowded with fruit for several days and the rustle is now on at the cutting sheds, where there are employed one hundred people, cutting, handling and spreading the fruit.

Drying Fruit.—Red Bluff News, Aug. 18: The Sanitary Fruit Co.'s drier and packing house in the Sunnyside addition is the scene of much activity, now that the fruit has to ripen rapidly. A visit to the place shows over one hundred women and children busily engaged in cutting peaches and pears for drying, while twenty-five men have all they can do performing the heavy work around the place.

WE sell country lands. CHATFIELD & VINZENT, 228 Montgomery street, San Francisco, Cal.

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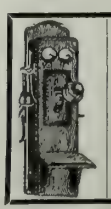
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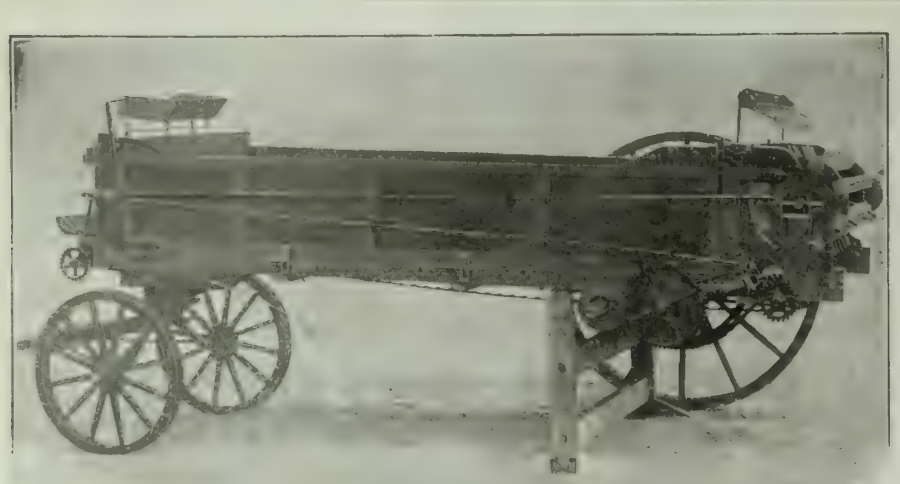

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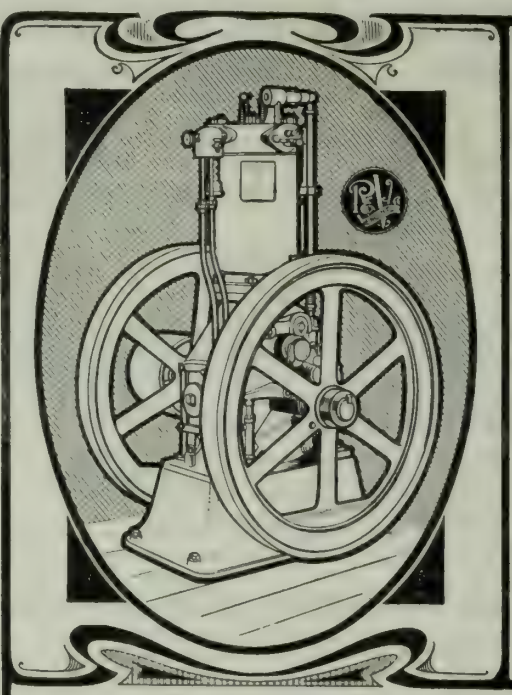
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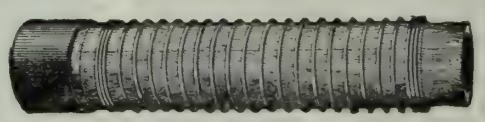
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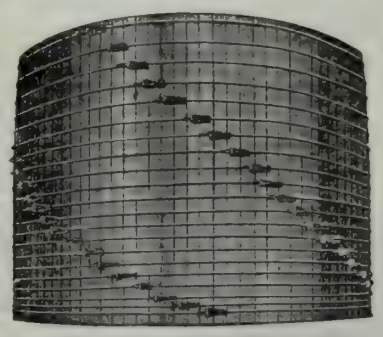
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 10. SAN FRANCISCO, SATURDAY, SEPTEMBER 2, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

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Alfalfa—A Song of the Pastures.

For the PACIFIC RURAL PRESS by MRS. HENRIETTA P. ANDERSON

The summer skies bend brightly o'er us;
The birds are caroling a chorus;
  The bees are humming, working;
On tree and vine the fruit's aglow;
In fragrant fields the cattle low,
  Where I would fain be lurking.

Those fields! O, mile on mile of beauty!
As tho' they had no other duty
  Than just to soothe the senses vagrant
With wave on wave of billowy green,
And flecks of lavender between—
  The purple flowers so fragrant.

The herds that roam alfalfa meadows,
Or rest beneath the green trees' shadows,
  Are good to look upon, and sightly—
The browsing sheep, the growing swine,
The blooded horse, the sleek, fat kine,
  The calves and lambs so sprightly.

The bees find here vast stores of sweetness,
And every farm 's for its completeness
  On these alfalfa fields dependent.
O, lavender and purple blooms,
Emitting delicate perfumes,
  In color rich, resplendent!

From early morn till shadows lower
Is heard the music of the mower,
  And emerald swaths are lying thickly.
The wagon with its fragrant load
Goes swaying down the dusty road
  To where the stack goes skyward quickly.

The farm's bright side, how thou dost show it!
And to the artist and the poet
  Thou surely art a winsome charmer.
Our barns are bursting with thy stores—
Alfalfa's opened Fortune's doors
  To many a California farmer.

Le Roi Alfalfa! Thou art regal.
To call thee king is surely legal.
  A well-earned crown thou now art wearing
Of beauty, fragrance, use and grace,
While not one blemish mars thy face—
  A king of pastures past comparing.



"Alfalfa's Opened Fortune's Doors to Many a California Farmer."

It is well in California to break forth in song over the plant which is of all single plants the greatest in its contribution to the prosperity of the State. Single trees are great and single fruits and grains yield millions, but no one of them contributes so much value to the State and distributes its benefits so widely as does this imperial clover. It is true, also, that no single plant is now so popular and there is none whose area can be so safely and profitably extended. Another thing about alfalfa is that it underlies the prosperity of nearly all our other agricultural specialties of production, and at the same time makes direct contribution by its own direct achievement. It is common enough to credit alfalfa with its share of our meat supply and to credit it also with a large part of the recent dairy expansion, but it is not often remembered that alfalfa by its support of working animals makes it possible to produce millions of the present value of our fruit products. In the great valleys orchards and vineyards are worked mainly with alfalfa fed teams—the raisins and oranges, for instance, reaching an aggregate value of more than ten millions of dollars, largely rest upon an alfalfa basis. And so the argument might be indefinitely extended to show the underlying position of alfalfa with reference to other great wealth producing efforts of California. At some convenient time some statistician of alfalfa will no doubt work out this aspect of the plant and teach us all to more fully appreciate the significance of the tribute which our contributor pays to the plant in the verses upon this page. There is also another consideration which is pertinent. There is no forage plant in the whole United States which can compare with alfalfa in recent increase of acreage. Almost all States, from New England to Texas and from Wisconsin to Florida, are going into alfalfa—thus following the lead of Utah and Colorado in learning from California of the plant.



"With Wave on Wave of Billowy Green, and Flecks of Lavender Between."

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SAN FRANCISCO, SEPTEMBER 2, 1905.

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The Week.

The great event of the week, from all points of view, is assuredly the establishment of peace between Russia and Japan. The victorious country certainly has displayed a magnanimity of the highest grade because Japan waived the claim for indemnity because Russia would not make peace on any other ground. Japan evidently did not care to appear in the eyes of the world as fighting and increasing slaughter because of a money claim—losing life to secure money. There was apparently no other principle to fight for, because Japanese rights have been upheld and Russian aggression checked by the war itself, and nothing but financial considerations remained. Still it is very creditable to Japan to take this view and to demonstrate to the world that a people called heathen can be so strongly actuated by humanitarian considerations.

Another consideration involved is of striking importance on this side of the Pacific, and that is that peace was made upon American soil and that the President of the United States was the great peacemaker. This fact will be of national advantage to us in all parts of the world and particularly upon the eastern coast of Asia, where we need friends and customers. That our President, and not some European potentate, was the ruling agent in leading eastern Asia along new lines of advancement will be of incalculable advantage to us in all that we hope to do on the shores of the Pacific ocean. And what is our work to be? In an address at the World's Fair at Portland this week, President Wheeler, of the University, is reported to have said:

A century ago, when the world looked inward and America was a distinct annex, and the Pacific a desert of waters, the eastern shore of our continent formed its front and facade. Now, with the world turned inside out, with the Pacific established as the world's forum, with the world's contrasted halves arrayed on the opposing shores, the front of the continent has shifted to the West. Within the next decades the educational institutions of the Pacific coast will surely be called upon to an extent out of all proportion to anything in the past to render service in opening Western education to the people of the Orient.

Our nation was shaped for the work of evangelization. It has gathered into it all the bloods and faiths of the Occidental world, and has moulded them together into a people out of which is emerging the concept man. It has based its institutions upon democracy, the most daring optimism devised by man, a system of governing whose chief raison d'etre lies in its power to educate and uplift man by conferring responsibility and saying to them, "The law and the kingdom—lo, they are within you." The faith of our fathers is our faith to-day. Our evangelizing zeal is the zeal of democracy—the ultimate zeal of the West, to make men self-determining and self-governing.

This will do to think about. We shall have trade advantages in the Orient, of course, and we need them, but they are only incidental. It will be in the elevation and ennoblement of the Asiatic man that our coast will have most to do, and it will be largely upon the basis of success in this greater endeavor that material advantages contributing to national development and prosperity will arise.

Wheat is shading this week, both on spot and futures, and the tone is listless, owing to bear stories from the north. It will take a little time to clear the situation. Barley holds up on a feed basis and Chevalier advances a little because of scarcity. Corn has arrived more freely, rye is easier and oats are scarce and firm. Beans are selling in advance and the outlook for prices is, therefore, good. Feeds are still strong. Hay receipts are less this week and prices are as before. Beef is firmer and other meats unchanged. Butter and cheese are improving, but eggs are accumulating as the recent advance brought in larger supplies. Poultry is rather slow, but promising. Potatoes have been taken for Australia quite freely, but that demand seems now filled for the present and the market is easier. Onions are in good shape. Valencia oranges are in light supply and selling well; lemons have advanced. Ordinary orchard fruits have sold better and some kinds have advanced. Dried fruits are weaker this week, but prunes are strong, as the supply seems shorter than calculated. Dried apples are weaker for the opposite reason. Almonds are weaker because of reports of large product, and walnut supplies are also being talked up. Honey is very dull. Hops are uncertain, as growers and dealers are far apart. Wool is quiet for the moment.

We hear with pleasure from Sacramento that at the State Fair, which will open September 2, Prof. Le Roy Anderson of the California Polytechnic School at San Luis Obispo has been engaged to judge the dairy cattle, and Prof. John Craig of the Texas University to judge beef cattle and other stock. Both are clear experts in their lines and the work will be good. We understand that the judging of Shorthorns will commence on Monday, September 4, at 10 A. M., and that the display will be one of the best we have ever had.

It will be good news to learn that Prof. Waite of Washington and Prof. Smith, of the University of California, are both very hopeful of success with the pear blight. They have been out in the orchards for the last two weeks and see many indications which are favorable. Prof. Waite still believes that the extermination of the holdover blight is the key to the situation, and he proposes to come to California again in November to spend several weeks among the orchardists, showing them how to go about the matter of cutting out the affected twigs and branches. He fully appreciates the importance of saving the Bartlett for California and does not propose to relax any effort to accomplish it. The pomological branch of the Department at Washington is making some good hits in California this year.

Connected with the work of this branch is that of the several viticultural stations in California. We had the pleasure of seeing the plantation at the old Crabb place in the Napa valley last week. The fine collection of resistants there is in good shape, most excellently cared for and making growth which may be very significant in the future. Mr. G. H. Hecke of Woodland, who is the local representative in this work, is giving a new demonstration of his horticultural skill and insight.

QUERIES AND REPLIES.

Starting With Fruits.

TO THE EDITOR:—In what location, and with what fruit or nuts, would you advise an inexperienced beginner to start? What do you know of the locality in the vicinity of Riverside, Cal., with reference to climate and adaptability to fruit raising? Do they have frosts or blights of a serious nature there? Are crops ever completely ruined in that locality? Is $2500 a reasonable price for the output of a 10-acre grove of navel oranges in that vicinity? Could one safely figure on 300 crates per acre? Can you give me an idea as to what the net profit would be from a 10-acre grove, producing, say, 300 crates? Do you know of a more profitable crop than oranges, which can be grown without greater risk?—INTENDING SETTLER, Cincinnati.

The questions you ask are exceedingly difficult to answer. It does not give much information to say that a man should start with whatever fruit or nut commends itself to his effort and enterprise and seek carefully for the location where that particular fruit or nut would do best—and yet that is about the situation. There is no very great difference between the maximum profit of the different fruits or nuts when all conditions of growing and marketing are favorable for any one of them. Nearly every fruit that is grown can show a record of $500 gross receipts per acre, or even more, and every fruit would also have to acknowledge a net income of nothing per acre. It all depends upon the grower, upon the soil, upon the season and upon the market and it is seldom that all these factors are favorable at the same time. For an output of oranges $250 per acre is not excessive; at the same time many groves may produce more and many others less. You could not figure safely on 300 boxes per acre, nor on any product whatever, unless you knew the conditions; nor can you figure on a net profit per acre from any ten acres unless you knew the grower, the land, the condition of the trees and other things which are involved. On the whole, it would be safe to say that there is no more profitable or surer crop in the fruit line than oranges; at the same time, you will find many people claiming that oranges do not pay. Our observation is that you cannot count upon relation of investment and anticipated income in any agricultural operation as you can in manufacture and trade, in which you are experienced. It is certainly true that people accustomed to manufacture and trade, who take up agriculture as an investment, find it on the whole less certain of results than they anticipated and probably less certain than enterprises with which they are familiar; at the same time, some agricultural investments have been exceedingly profitable, and some men who have started by their own efforts without either experience or capital have so assiduously applied themselves to commanding the knowledge and making the effort necessary to success, that their rewards have been exceedingly great. For these reasons we always hesitate to give any estimates which one might look upon as easy to realize or generally to be expected.

Riverside is one of our best orange growing districts, adapted to the growth of many kinds of fruit, but chiefly given to oranges. They have in certain parts of Riverside frosts which sometimes do considerable injury, but there never has been, in a quarter of a century, freezing which has disastrous effect. Crops have never been completely ruined by any adverse condition. They have some diseases of the orange tree and some insects, but have thus far by energetic measures kept them in check. There is no widespread trouble of this kind. The fact is that extension of the irrigated area about Riverside is continually being made and the orange area extended. This is good evidence of the confidence which those who know most about the orange industry at Riverside place in it.

Leguminous Tubercles in California.

TO THE EDITOR:—I am desirous of securing reliable information in regard to the general distribution of the tubercle forming the bacteria of the legumes in your State. I especially desire to know if the clovers, cowpea and soy bean form tubercles.—ENQUIRER, Oklahoma.

Cowpeas and soy beans are very little grown in California, as the dry air of the summer does not well suit them, and are too tender to grow in the winter

except in strictly frostless places. Our native clovers form tubercles. The burr clover, which is wild in most parts of the State, from introduction long ago by the Spaniards, forms tubercles of great size and in great abundance. Alfalfa also bears tubercles, and so do the roots of our leguminous shade trees, like the Australian acacias. Common garden beans, peas, etc., form tubercles, and the Canadian pea, which has been largely used in California on account of its thrifty winter growth, also forms tubercles freely. As to the artificial introduction of bacteria, especially for the formation of tubercles, it is too soon to form definite conclusions, and the general value of the introduction of these bacteria must, of course, be reduced by the fact that we apparently have such a supply of them naturally.

Various Fruits.

TO THE EDITOR:—What location would you advise for the growing of walnut, almond, fig and orange trees? How long does it take for either of these trees to bear, and are they profitable when bearing? What can I do while waiting for the trees to bear? I have heard the raising of poultry was a good business; if so, kindly inform me. I would like to know whether it requires much experience and how much capital I would need to get a start.—ENQUIRER, New York.

Our book on "California Fruits" discusses all those questions which you mention. They can be counted to be in profitable bearing at about five years old, although the almond is more precocious and should give a crop in the third year. These fruits, if well situated and well taken care of, are undoubtedly profitable generally and sometimes very profitable; but, of course, in this business, as in every other business, there are off seasons and difficult conditions arising. If you have good soil and water enough, vegetables can be profitably grown between the trees for the first two or three years, and the raising of poultry is generally quite profitable when well handled; but it also has its difficulties. As a rule, a man expecting to settle on a small place and to use his own time quite fully in the work, should have not less than $5000 capital, though many do start with less. There is much advantage in experience and some disappointments undoubtedly come from lack of it. At the same time, people who give sufficient effort to informing themselves and who seem to be naturally adapted to meet and overcome difficulties, do succeed in our horticulture without previous experience. It depends first of all upon the man and next upon the suitability of the land and situation. There is no particular location which can be mentioned for the different fruits. They are now commercially grown in widely separated parts of the State; but it is essential that the soil and the immediate situation should be carefully selected.

Grasses for Foothill Slopes.

TO THE EDITOR:—I am living 5 miles north of Colfax at Chicago Park, Nevada county, in the foothills of the Sierra Nevada mountains; am the owner of a tract of land and would like to know what kind of grass would be best adapted for pasturage the year round on the foothills.—FARMER, Chicago Park.

Unfortunately no grass has yet been found which will maintain pasturage all the year on the dry slopes of the foothills without irrigation. Californians have been endeavoring to find such a plant for the last twenty five years and have succeeded in demonstrating the fact that Australian rye grass and orchard grass will make good winter growth and will make a bunchy summer growth which will retain life in the root, providing the land is not too dry; but on almost all foothill slopes the plant will not live during the dry season. There are very many of our uplands which must be farmed for winter pasturage until they can be irrigated and put to the growth of clover, rye grass or some other pasturage plant.

Nothing Serious.

TO THE EDITOR:—I send a few twigs from some three-year-old peach trees. They seem to be affected with some disease, although the trees have made a good growth. Will you kindly inform me through the columns of your paper the trouble and the remedy?—INQUIRER, Ceres.

We do not find anything on the twigs except a little discoloration due, perhaps, to sunburn, and a few bites into the tissue by transient insects. The leaves are rather small and the twigs slim, but no cause appears on the specimens. Keep watch and send us later anything you suspect.

Sorghum Poisoning.

TO THE EDITOR:—I am informed that the fodder from Egyptian corn in some stages contains arsenic in such quantities as to poison stock. Would it be likely that stock (horses and cattle) would be injured by being turned into a field of it after the heads had been harvested? At what stage is it poisonous, if at all?—FARMER, Shasta county.

Careful studies made in Colorado have demonstrated that rank growth of sorghum (and Egyptian corn is a sorghum) contains not arsenic, but prussic acid in sufficient quantities to poison stock. Greatest danger comes with the second growth, although thre has been poison found in first growth also. The greatest injury to stock follows the use of the rank sorghum in considerable quantities; for instance, cattle kept on dry feed and turned into sorghum are very apt to be injured; in some cases large numbers have died within an hour or two. There is little danger in the dry stuff after the heads have been harvested, but that danger would come not from the poison contained, but because of the indigestibility of the material. Poison has only been found in very rank, new growth of the plant. If this fresh sorghum is cut and allowed to wilt before feeding, or if certain quantity is given to the stock in connection with hay or other dry feed, it is not dangerous.

Intercrops and Alkali.

TO THE EDITOR:—Will you kindly advise a tenderfoot: First, what to plant to best advantage between rows of walnuts 40 feet apart on adobe soil? Second, how can soil be tested for alkali without submitting it to a chemist? Third, if too much alkali is found in soil to allow alfalfa, what can be used for hog pasture on the same land?—A VERY TENDERFOOT, Oakland.

If the land is not too stiff adobe for walnuts, it will also grow squashes, beets, corn, sorghum—in fact, almost any crop which you will cultivate well during the summer. The crops which are worst for the trees are those which require the land to lie still, like grain and hay. The crop to choose is the one you can use or sell to the best advantage in your locality. Soil can be tested for alkali by wetting it and touching it with a piece of red litmus paper, which you can buy at the drug stores. Alkali will turn it blue. If too alkaline for alfalfa, you can grow sugar beets or Bermuda grass or Australian saltbush, which, though not much liked by cattle, is relished by sheep, pigs and poultry.

The Wild Almond.

TO THE EDITOR:—In your number of August 19th I noticed an article on California wild almonds. Can you inform me where I can get some of these trees? I am interested in almond growing. Also I would like to find out something about their growing qualities on heavy soil.—READER, Stockton.

The grower who has done most in experimentation with the wild almond stock is Mr. E. W. Spencer of Manzana, Los Angeles county. He may have seedlings to spare. We have not heard of the use of this stock except in the Mojave region. How it will succeed on heavy soil we do not know. Perhaps Mr. Spencer will tell us his observations on that and other points.

Places for Poultry.

TO THE EDITOR:—I would like to know where the best place is, all things considered, to raise poultry. I have several locations in mind—Chico or Gridley, Petaluma, the Santa Clara valley south of San Jose, or around Los Angeles. Which place would you advise?—NEW COMER, Los Angeles.

Poultry is being successfully grown in all the localities which you mention in your letter of August 20th, and so far as local conditions go, all might be commended. Success with poultry is conditioned rather upon the man, the system and the outfit, rather than the locality. At the same time, there are commercial advantages to consider—nearness to market, cost of transportation, etc., which are matters for you to look into and decide for yourself.

Trees for Calaveras County.

TO THE EDITOR:—Will you kindly advise me which kind of trees would do best in Calaveras county, near the town of Burson—1, English walnut; 2, almonds; 3, olives.—PLANTER, Helisma.

There can be little doubt but that English walnuts, almonds and olives will all do well in Calaveras county if planted on suitable soils. The almonds and olives will succeed with less moisture than the walnuts; the latter should be planted on deeper, richer and moister soil, although water standing near the surface is very objectionable to them.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending August 28, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

The weather was warm and clear most of the week and conditions were favorable for all crops. Rain at the close of last week caused no material damage to fruits. Prune picking is progressing rapidly; the fruit is of superior quality and large size, but it is reported that the yield will be light in most places. Peaches and pears are nearly all harvested. Grape picking is in progress in all sections; many reports state that the yield is lighter than expected, but the grapes are of excellent quality. Olives and almonds give promise of large yields. Oranges are in first-class condition and a heavy crop is probable. Hop picking is progressing. Beans, corn and vegetables are in good condition. Grain thrashing and hay baling are nearly completed.

Coast and Bay Sections.

Clear and warm weather continued in the interior, with frequent high fogs and cool weather along the coast until near the close of the week. Conditions were quite favorable for fruit drying and much of the crop has been secured. Late peaches are ripening; they are of good size and the crop will be fair. Prunes in some sections have matured much earlier than usual and are nearly all gathered; the yield is good and the fruit excellent in quality. Grapes are ripening and picking has commenced; there will be a heavy crop in some sections and only fair in others. Apples are in excellent condition and a large crop is probable. Almond picking has commenced and most reports indicate a very large yield. Walnuts will make a fair crop. Cloverdale oranges are looking well and prospects are good for a large yield. Hops are maturing and picking will become general this week. Beans are beginning to turn and give promise of an unusually heavy yield. The grain and hay crops are nearly all secured.

San Joaquin Valley.

Clear and seasonable weather prevailed during the past week, and was favorable for all crops. Almond harvest is well under way and the crop will be large. Peaches and table grapes are being shipped freely. Drying peaches are nearly over. Prune drying is progressing; the crop is light. Wineries have commenced operations and are working mostly on Zinfandels. Raisin grapes are maturing rapidly and show a large percentage of sugar; picking has commenced in most places; the crop is good and of excellent quality. Olives have set well and are a promising crop. Oranges are making rapid growth and a large crop is expected. Large quantities of potatoes are being shipped to Eastern markets. A good fourth crop of alfalfa is being harvested. Feed is plentiful and stock are healthy and in good condition.

Southern California.

Clear and warm weather continued during the week, with higher temperature at the close, and conditions were very favorable for ripening fruits, grapes, beans and sugar beets. Table grapes are ripe in some sections and picking has commenced. The yield of guavas will be best for five years. Walnuts are in good condition and making satisfactory progress; the yield will be light in some sections. Orange and lemon orchards are in excellent condition, with a heavy setting of fruit, and it is estimated that the orange crop will be the heaviest ever known. Beans are doing well and give promise of a large crop. Sugar beet harvest continues. Early corn is ripening. Grain thrashing and hay baling are not yet completed.

EUREKA SUMMARY.—Foggy mornings along the coast. Continued clear and warm in the interior. Oats are being harvested with good results. Barley is very promising. Worms are still doing damage to peas and beets on the bottom lands.

LOS ANGELES SUMMARY.—The week closed clear and warm, with severe thunderstorms in the San Bernardino mountains and heavy rain. Thrashing continues. Sugar beets are being harvested.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, August 30, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.02	.75	.26	66	48
Red Bluff	.00	.00	.11	.05	96	58
Sacramento	.00	T	.07	.01	92	54
San Francisco	.00	T	.08	.03	72	50
Fresno	.00	.00	.00	.03	100	60
Independence	.00	T	.07	.13	94	62
San Luis Obispo	.00	.03	.06	.04	96	56
Los Angeles	.00	.00	.17	.07	100	58
San Diego	.00	.16	T	.09	86	64
Yuma	.00	T	.73	.51	112	76

ARBORICULTURE.

Street Trees in California.

By Willis L. Jepson, Ph.D., Assistant Professor of Botany, University of California, for the California Promotion Committee.

From the standpoint of both the individual and the community there is no other asset that can be put upon the land of municipal and agricultural California so valuable as trees. And there is particular need for planting trees in what is practically waste land, the curb-lines of streets and the sides of country roads. Such trees, properly planted and persistently cared for, are valuable to all as well as to one for several amply good reasons. As a purely commercial matter it is now well known that street or road trees increase property values. Authenticated cases are at hand where naked farm land of superior value has sold at less price than inferior land fronted by lines of roadside trees. And this difference is, to a certain extent, justified because in these days of increasing wood scarcity, trees have in themselves a great value. As a matter of comfort, too, street trees are a boon in a land where for five or six months cloudless skies prevail.

Again, in the problem of rendering a locality attractive, trees furnish one of the most effective instruments for improvement clubs. It is not difficult in some towns to find uncompromising rows of naked houses. A few of these may be architecturally artistic, more may be unobjectionable, and a few may be atrocious. It is, however, a citizen's vested privilege to build any sort or kind of habitation that may suit his taste or please his fancy. We cannot object to the style or color of paint, however much it may offend. But the public has this one resource. We can subdue man's colors by nature's colors. We can break rigid lines by the smooth outlines of trees. We can modify, at least, extreme nakedness in buildings. And our plan has this surpassing value that it is almost a panacea. It helps not only faulty houses, but those which are pleasing architecturally. It softens hard lines; it accentuates pleasing lines. It makes the ugly less ugly, the beautiful far more beautiful. Finally, lines of trees in country districts, if planted on all roads and fence lines, ameliorate climate by mitigating the effects of hot or cold winds. It is now well established that crops may be partly or wholly saved by such means from the destructive effects of hot winds on critical days when cereals are "in the milk."

One of the most promising indications of the increasing interest in permanent improvements and the desire of communities to secure comfortable and pleasant surroundings is to be seen in the number of tree planting clubs that have recently come into existence. The old-time Arbor Day idea was, as all of us now see, mistaken and impractical. The planting of trees as public improvements should always be under the direction of permanent organizations in order that the investment in nursery stock shall not be lost by neglect and that the years shall not be wasted.

The planting of trees on streets or county roads calls for the observance of certain general rules or canons of taste, which are fundamental and are everywhere applicable. They are indeed axiomatic canons, as will appear upon reflection, but they may be briefly discussed after stating them.

The Arrangement of Trees. — All the trees planted on a given street should be of one species and one only, planted on both sides of the street in straight lines. Sometimes it is necessary to change a tree after two or three blocks, but good taste says the longer the avenue the better. At all hazards the spirit of the principle must be kept, and different trees must not be mixed in the same block, either on the same or on different sides of the roadway. The object of this is to secure uniformity, and uniformity must be had, for the reason that the street is a geometrical figure, and must be treated accordingly. To mix different types of trees, to put small ones up against large ones, slender ones against squat ones, is obviously ridiculous, because it is a feeble attempt to treat a rigid street line after the style of a park or garden. No one thinks of planting in a lawn half a dozen absolutely different things in a rigid line with accurate spacing. Yet in streets we often see a large tree here, a shrub there, deciduous trees by evergreens, and a palm amongst all. It is, as said, an attempt to treat a street as if it were a park, and this is futile, because in parks you naturally have curving roadways and always large vistas to right and left and space for groves and clumps of trees. Highly impressed with the beauties of a park, people try to "landscape" a street, to force a park which requires room into street where there is no room! Some one has happily compared diverse trees on the two sides of a street to two rows of buttons on a Prince Albert coat, all the buttons being of different sizes, shapes or colors; one is just as appropriate as the other. Keep to one kind of a tree. It is a simple thing to do. It is a pleasing method. It gives the effect of distance. "The charm of each tree is renewed in the next and the effect of the whole is constantly intensified and multiplied by repetition." The street with its rigid lines becomes a place of beauty.

The distance between the trees should not be less than 50 feet. This is the distance that has been found by experience to be the best. In any event the distance should not, under any circumstances, be less than the figure named. In other words, in the matter of tree planting, we should not consider merely to-day or to-morrow, but look far into the future. There is a long time coming, and these trees should be given every opportunity to develop into fine individuals and their need of space when nature should be held constantly in mind. It is certain that 50 feet is in many cases too little. There are certain species whose branches will meet or interlock in twenty years, and, even if the branches barely meet, it is bad. It is not permissible, any more than desirable, to have on the street a continuous wall or barricade of foliage. We lose very much of the æsthetic value. We do not want a dead wall of foliage shutting us in. The street is no place for a forest or a semblance of a forest, but it is a proper place for well-spaced trees. There are no objections to planting at 30-foot intervals and in due time taking out the alternate trees, but it requires moral courage to cut out lusty trees, and it is wiser to plant the extra trees on another street and thus improve two streets for one sum.

Selection of Trees.—When we come to the selection of trees for street purposes, we find the widest expressions of opinion and an exceedingly great range of choice. There is special need to urge care and judgment at this point. There is need to guard against the danger of mere sentiment, purely personal reasons, or the play of ulterior purposes on the choice of certain kinds or types of trees not adapted to the situation which they are to occupy. Such a fatality is not only in itself bad, but it is also bad policy, since thereby effective arguments are furnished to those who are opposed to any tree planting whatever. It must be remembered by those who favor street trees that there are many and valid objections to them. There are certain kinds of trees which disturb cement sidewalks, sprout freely, obstruct sewers and entail great expense, shade the streets in the rainy season so that they do not dry out and so render them unsanitary, shut out the views or look ridiculous. All of these things may and do happen. Nevertheless it is perfectly feasible to so select, plant and care for street trees, that the above objections may be lessened in force or deprived utterly of their validity.

The conditions of soil and climate in California are, however, so exceedingly various that it is impossible to formulate general rules which would apply to all parts of the State. Each locality should be governed by its local needs and local conditions. It should carefully accumulate and codify its own experience. In towns where systematic planting is just being initiated, it is well to have a firm grip on the hand of success and go cautiously at first. Use, then, those trees which experience has shown will grow well in your particular locality and are adapted to stand the hard life of a street tree, and avoid experimentation with untried sorts, or experiment with care.

We have three classes or types of trees suitable for planting—deciduous trees, evergreen trees and palms. The last two types are highly adapted for parks, gardens and plantations. California is remarkable for the wealth of its exotic flora, in which the flowering evergreens take high rank. The evergreen Silver Wattle, remarkably rapid in its growth, reaching a height of 25 feet in six or seven years, and covered in the winter season with a wealth of yellow bloom, is a fine example of the type of imported trees which flourish under the kindly conditions of Californian soil and climate. This tree and a hundred others are ready to hand for the improvement—nay transformation—of thousands of California gardens and plantations and city parks. The greatest need in most cities and towns is parks and open squares. There seems to be a disposition toward road ornamentation merely—to rest satisfied with turning public enthusiasm in this direction. Open-air recreation, even in small cities, is not a luxury for the masses of the people. It is in these days a positive need. In the adornment of such open spaces the flowering evergreens will play a leading part. There is, besides, a long list of dry-land shrubs which thrive without irrigation and are happily adapted to arid places. Many of these are very attractive, all are interesting, and will promptly form a ground cover.

For the streets, on the contrary, evergreens are not suitable, except in those portions of the State having a scanty or precarious rainfall. During the long rainy season they give too dense a shade, exclude the sunlight when it is most needed, make streets, lots and dwellings damp and ofttimes unwholesome. Every ray of sunlight is eagerly sought during the winter, and dense canopies of foliage should not interfere with the drying out of the streets. On account of the failure of the roadway or street to dry out, mudholes or ruts often form with regularity opposite each evergreen tree. These objections have greatest weight on east and west streets, obviously less weight on north and south streets, and no weight in the desert portions of the State.

Great judgment should also be exercised in the use of palms. They are not suitable for ordinary city or town streets, because they obstruct the sidewalks when young, proving a most vexatious nuisance, and when tall emphasize their lack of suitable surroundings. The palm, when well grown, is a truly royal tree, but it requires room—it demands imperial spaces, and, better still, retinues of shrubs and trees. If palms be demanded, demand in turn wide parks, boulevarded driveways or parked streets. Crowd them into a narrow street where the houses elbow each other, if you will, and what do you have? Something well nigh as common as rows of barber's poles.

Deciduous trees for general street purposes have added advantages over such evergreens as are suitable for streets, in that they do not present the year round one dull line of foliage, which, in the case of the evergreen, is always monotonous and often funereal. The deciduous trees change their apparel two or three times in the season, the foliage is wholly renewed, and one bright color succeeds another as the seasons pass. In the autumn their leaves fall and the sunlight of the rainy season floods the ground beneath. Sunlight spells death to harmful micro-organisms, and we cannot cherish too highly the sunlight of the winter months.

A List of Deciduous Trees for Streets.—Big Leaf Maple: One of the best trees for a curbstone tree and suitable to lead the list. It is often called Oregon maple and California maple. The great advantage of this tree lies in the fact that it is a native tree and thoroughly adapted to all soils and conditions. It grows rapidly, makes a fine showing in a few years, bears very broad leaves, is clean in its growth and habit, and is very reliable. It does best in loam soils.

Hard Maple: The hard maple, as well as most of the Eastern and European maples, does well in California or in most parts of California, some of them showing pleasing autumn colors.

Hardy Catalpa: A rapidly growing tree, but producing durable wood. The trees need protection, as the limbs are very easily broken.

Tulip Tree: Handsome species in foliage and in flower, but needs continued protection and care when young.

Carolina Poplar: Splendid street tree, surpassing in its habit of growth or outline of crown the big-leaf maple. Its apparel is completely changed three times a year, as it passes from naked limbs to jewelled tassels, which are succeeded by the handsome foliage. It is best propagated by cuttings, which should be all of one kind, and were better taken from the male tree. The female tree, if fertilized, produced quantities of downy seeds which are an annoyance.

Silver Poplar: Round-headed tree with very striking foliage, the silvery under surface turned outwards under the play of the wind. Sometimes sprouts, but is not ordinarily obnoxious in this way. It is an ornamental tree of old-time California gardens.

Scotch Elm: The most desirable of all the elms as a street tree in California. It has a stout, round trunk, symmetrical crown and comes into full foliage in the middle of February, two months earlier than the cork elm.

Cork Elm: A standard tree for the sidewalk by reason of its hardiness and vigor. It has been more widely used than any other species in California. In the matter of trees Stockton's avenues are superior to those of any other city in California, the adornment of the street and comfort of shade having been secured chiefly by elms. Cork elms are also a feature of the streets of Sacramento. Beautiful young trees adorn the main avenue leading north from St. Helena. Occasionally this species falls into the obnoxious habit of suckering.

American Elm: An ideal street tree, but not very successful in California. Its main limbs are easily broken by the wind, and the tree is likely to become ragged. Good specimens may often be seen, however, as about the Sacramento grammar school, but one can scarcely recommend it, at least not safely.

Ginkgo: The Ginkgo or maiden hairtree is the sacred tree of Japan and China, and has long been preserved in the temple grounds. It is seldom planted on account of its slow growth, but is interesting on account of its historical association and its foliage which resembles that of a maidenhair fern. It is a decided novelty and, as said, grows slowly. It seems natural in the rush of Pacific coast life that we should be in a great hurry to have things right away, and therefore we select for our street trees the most rapidly growing species. Nor is this to be quarreled with altogether. We desire some benefit of the trees ourselves, not to plant entirely for posterity—but in a reasonable proportion of cases the streets should be favored with an enduring type of decoration, especially with Ginkgo or oaks.

Valley Oak: Native tree, the celebrated "weeping oak" of the interior valleys, where it was at one time more abundant than now, giving to them the appearance of lordly parks. As agricultural operations increase these oaks will continue to disappear. They should, therefore, be planted along the country roads in order to simulate the original scenery characteristic of the interior, as there is no other tree which gives so stately an appearance to the California valleys, and no other tree which speaks so confidently of the richest lands. It is of rapid growth, and either assumes or may be made readily to assume the tall elm-like habit. It is a cause for profound regret that in some localities fine examples of these trees

standing naturally on country roads are being cut down for cordwood fuel.

California Walnut: A native species, thoroughly adapted to our soils, and forming fine trees in a few years.

English Walnut: More tropical type of walnut. Most successful when grafted on the native walnut.

Pecan: Grows 40 or 50 feet high in the interior valleys, where it is universally admired as a roadside tree.

Linden: Standard type of street tree. Does well in Oakland and other coast cities.

English Hawthorn: Very small tree, but attractive for its flowers and suitable for narrow roadways or for situations where it is desired to plant at less than the accepted interval.

Italian Chestnut: Tree of fairly rapid growth, cleanly built trunk and branches and handsome foliage.

Oriental Plane: In 1898 Dr. R. E. C. Stearns planted half a dozen in front of his premises in Los Angeles and speaks most enthusiastically of their growth. At the time of planting, the trees at the butt were about the size of a hoe handle; in four and one-half years the largest was 8 inches in diameter. He further says "they have surpassed my anticipations and are the handsomest trees in the city. I have been frequently asked by passers-by who stopped to admire them whether they were maples. All speak highly of their beauty. The cloth-like texture of the leaves is favorable to the ready absorption of the moisture from the atmosphere, and as we have a great deal of damp or foggy weather and but few really hot days, they are the trees above all that I have met with for this place, and would no doubt do even better in the coast regions farther north." They stand transplanting admirably and may be rigidly pruned if desired.

Locust: The old-fashioned locust, which makes a dense shade and produces a wealth of large fragrant blossoms, will always claim consideration as a shade tree and is ever likely to be chosen for hot and dry situations where other trees may fail. Its wood is hard, strong and close grained and deserves to be more widely planted for economic purposes. Locust posts are exceedingly durable.

Texas Umbrella: This is a horticultural variety of the Pride of China. It forms a compact and very dense crown composed of a multitude of erect and ascending branches foliaged with compound leaves. It is a prime favorite throughout the San Joaquin valley and is being more and more planted by towns in the Sacramento valley. Its use enables a good summer shade to be obtained in the warm interior valleys on the shortest possible notice. Its autumn foliage takes on yellow hues which splotch with color many a village street.

Pride of China: This is sometimes called the Tree of Heaven. While forming a tall, handsome tree, there are two rather serious objections to its use. It may send up suckers from its roots and the heavy odor of the flowers on the male tree is passing disagreeable to most people. Twelfth street in Oakland has some well grown pistillate trees.

Princess Tree: Known also as Paulownia. It has very large, heart-shaped leaves (which are very downy) and large violet flowers. It is rarely planted in California, but well worth further trial where the soil is good and not too dry. It is very striking on account of its tropical foliage.

White Birch: Sometimes used on streets, but a tree of delicate habit and better suited for lawns or gardens.

Evergreen Trees.—Blackwood Acacia: Native of Australia. Produces a good trunk and a compact, symmetrical crown. Useful for semi-arid regions or for north and south streets, to which all evergreens should be limited.

Large-flowered Magnolia: Tropical-like tree, long time garden favorite. Thrifty and vigorous.

Pepper Tree: Characterized by its low-spreading habit, fine foliage, drooping branches and strings of red berries. Most successfully used as an avenue tree in southern part of State.

Silver Wattle: Native of Australia. A tree of very rapid growth. Remarkable for its fern-like foliage and masses of yellow flowers produced in midwinter. Scarcely suitable for streets on account of its spreading habit, but highly decorative for all other purposes.

Grevillea: Tall tree with divided leaves and sprays of crimson flowers. Used with notable success on the famous Magnolia avenue, between Riverside and Corona.

Blue Gum: This is the Eucalyptus globulus of botanists and was extensively planted throughout the State at the time of "Blue Gum Epidemic" in the seventies and early eighties. The qualities of its wood has long been appreciated, but methods of lumbering and treating the wood in order to secure full advantage of its excellent points have only recently been developed. It deserves to be still more widely planted to supply demand for hardwood and for piling. As a street tree it is, however, objectionable. Its roots have the faculty of tapping sewers and choking them with masses of roots. Most towns have ordinances which condemn them when planted within a certain distance of sewers. But they might be planted along fence lines where they would not interfere with growing crops.

THE BOTANIST.

Answers to Inquiries.

By Mr. H. T. Hall, Assistant Botanist of the University of California Agricultural Experiment Station.

CALIFORNIA RHAMNUSES.

To the Editor:—Will you kindly give the names of shrubs of which specimens are enclosed? — Collector, Summit, San Bernardino county.

The specimens of shrubs submitted by you for identification are as follows: Coffee berry (Rhamnus californica). A common shrub in the foothills of California, closely related to the plant Rhamnus purshiana, furnishing the common drug, Cascara sagrada. Recently chemical investigations show conclusively that the active principle of Cascara sagrada is also present in the bark of the coffee berry bush and some of the Cascara sagrada of commerce is derived from this plant, although the true Cascara is preferred because of its larger size and consequent larger yield of bark. Certain constituents common to most barks have been extracted from the bark of Cascara, besides emodin, rhamnol, etc., but the actual active principle has not yet been isolated in a condition for study, so that the chemists do not know to what the bark owes its peculiar properties. The percentage yield from the two species is approximately the same and is no difference between young and old bark. At one time these coffee berries were advertised as a substitute for coffee, and certain tracts of land were sold in California to Eastern people who were induced to believe that there were millions in coffee berry farming in this State.

Rhamnus crocea ilicifolia (no English name). It is reported that the Indians once used the ripe berries for food and that their skins consequently became colored by the deposition in them of red coloring matter. The Piute Indians are said to use the plant as a cathartic and diuretic. California Indians use it very sparingly, if at all.

PRICKLY LETTUCE — A BAD WEED.

To the Editor: — Will you please report to me the variety of certain weed that I am sending you by Wells-Fargo express, and state whether or not this weed is poisonous to live stock.—Stock Grower, Gilroy.

The plant is "prickly lettuce" (Lactuca scariola), an introduced weed becoming all too common in California. There is no positive evidence that it is poisonous to stock, but it may be that the bitter milky juice contains a poisonous principle. It has recently been received from Colusa with the statement that it grew in meadows where horses and mules had been poisoned. If positive evidence against this plant can be secured we should like to have it. You should know of the permanganate of potash remedy for general stock poisoning. It can be used successfully for poisoning by nine-tenths of our poisonous plants. If you have Mr. Chesnut's later bulletins you will find the remedy there, especially in Botany Bulletin No. 26 of the United States Department of Agriculture. It can be had by application to the Department at Washington.

AN INVADING SEDGE.

To the Editor:—I am sending a specimen of a weed that is taking my garden. I would like to know what it is, and what will kill it?—A Subscriber, Elk Grove.

The plant is one of the sedges (Carex sp., actual species to be determined only when sent in seeding stage). This grows from strong, perennial underground root stock, and simple cutting or hoeing will be of no avail, since it will readily sprout up again from the roots. If the ground can be thoroughly drained and kept dry the plant will die out. It loves moist places. Perhaps it is so deep rooted that grubbing is out of the question, and too strong a grower to be smothered. If the root stocks were removed and every sprout killed after that as soon as it made its appearance, the roots would finally die for lack of aerial sustenance. But seed would probably be brought in again from neighbors' yards, so you had better, perhaps, turn your yard into a lawn or pasture and make the best of it.

THE STABLE.

The Question of Exercise for Horses.

The interesting point of when to give a horse exercise and when to give him rest is discussed in detail in the Breeders' Gazette by Dr. F. C. Grenside of New York. The following paragraphs are suggestive:

When Exercise Is Injurious.—With all the beneficial effects of exercise to a horse, there are times when it is injurious to him. Lame horses in ninety-nine cases out of a hundred should be kept quiet. Movement causes irritation and consequent aggravation of the trouble, and what is a curable case at first becomes an incurable one, or one in which the recovery is very much retarded.

The irrational plan of working a horse in a case of obscure lameness with a view of developing the nature of the trouble, as well as the seat of it, is the acme of stupidity. There are occasional cases of obscure lameness that it is almost impossible to locate exactly. Every case, of course, should be carefully examined, and the seat and nature of the trouble determined if possible. Any fairly intelligent practitioner of moderate experience will come pretty close to determining all that is determinable about the case, and can afford what relief is practicable. After that it is well to remember that rest is essential—in fact, almost imperative—in the large majority of cases. Because the horse does not get well in a week or two weeks or a month or more, it is no evidence that your veterinarian is mistaken in his diagnosis. Do not join the ranks of those wiseacres who pretend to know everything. If your veterinarian says your horse is lame in the foot, do not be influenced by some layman who will say the seat of the trouble is the shoulder. Do not take your lame horse out every day to jog him to see how he is, even for 20 yards, as it may do him more harm than the twenty-four hours' rest has benefited him. Try to forget him long enough for him to have an opportunity to improve.

Exercise in swollen legs in some cases is injurious. If the swelling is tender and feverish, and it causes the subject to go lame, defer exercise until the lameness disappears.

Rest is not only necessary in lame horses, but it is equally so in sick ones. If a horse is suffering from any ailment that exertion causes him distress, he is better not moved. When a horse's temperature is above normal he should be kept quiet, as exertion tends to intensify fever and may give rise to the development of some serious malady.

Discretion must be used in the manner of giving exercise after an illness, or otherwise harm may result. It must be started very gently and increased by degrees as the strength of the subject will admit. In cold weather especially, if there is much wind, the walking is more safely done inside. Unless the weather is inclined to be mild, some clothing is necessary during exercise, but it should not be too heavy.

What Exercise Does.—Exercise stimulates the activity of the circulation of the skin, and also promotes the action of its glands; so the most favorable time for grooming a convalescent is immediately after he is brought in. Beneficial as walking exercise undoubtedly is for horses under certain conditions, it is not always an easy matter to have it satisfactorily given. It takes time, it costs money, and it is too unexciting a process for most attendants of horses to carry out except under pressure. Most attendants walk with a horse at a snail's pace, which is all right for a weak convalescent, but as soon as sufficient strength is regained the pace should be made a brisk one, in order to promote condition in a satisfactory manner.

Riding one horse and leading another is one of the best plans to save time in giving walking exercise. In this way two horses are exercised at once, and a handy man can do it nicely. The led horse can have a dumb-jockey used on him if necessary, as it will render him more easily controlled and help to make his mouth or keep it in good condition. All harness horses should be broken to the saddle sufficiently so that they can be exercised in this way if necessary.

Slow Preparation.—The study of the beneficial effects of work or exercise would not be complete without referring to "slow preparation" as an important means of getting a horse ready for the hard work that may be required of him. Many a good horse is "knocked out," either temporarily or permanently, by being abruptly put into hard work. We see examples of it in the city every day. Horses are brought in by dealers for sale that are fat and soft. They can make a show for 20 minutes or half an hour, or long enough for somebody to try them for purchase, when they may be sold. Many purchasers of green horses do not understand that they cannot stand work until they are conditioned. They look fat and well, and assume that they ought to be fit for work, so they put them at it. In less than a week the two-thousand-dollar pair looks dear at a thousand. They have lost their style and action, and are very likely going sore or lame. This, of course, is the fault of the purchaser for, first of all, not knowing what he is buying, then for not finding out before he has partly ruined his new acquisitions.

Getting Ready for the City.—Horses in the condition described require three months' preparation before they are fit for hard work in the city. If this is given to them carefully and gradually, and they once get their tissues thoroughly hardened up by slow work, it is extraordinary what they will stand even under the exacting city conditions. Many horses will last for years on the city streets if started properly in the way of condition, and keep comparatively fresh looking about the legs, that would have been crippled in a month if put abruptly into work.

The successful trotting-horse trainer realizes the necessity for and beneficial results of slow preparation, if we may judge by his practice, to an extent that few handlers of other classes of horses do. He frequently gives his charges weeks and months of walking and jogging before he subjects their legs to the trying ordeal of a speed test, and then only short sprints at intervals. One often marvels at the badly shaped legs and feet one sees on a trotter standing the ordeals they do, and it is largely slow preparation that is accountable for it.

The American Trotter.—Hardly any one could be

found to take issue with the statement that the American trotter is unsurpassed, if at all equaled, by any other breed of horses for stamina. Selection, of course, in breeding has contributed in a considerable measure to this, but the steady, constant work necessary to develop their speed has had a large influence. The beneficial effects of this work, generation after generation, has caused stamina to become an inherent quality in the American trotter. Many owners of horses will turn their horses out or throw them into complete idleness in a box stall for two or three months, and think nothing of it. Sometimes it is done for convenience, other times for economy, but frequently because those in control think it is a benefit to a horse to be thrown into complete idleness at intervals.

That saying of the late C. J. Hamlin's "that two let-ups is as bad as a breakdown," showed the keen observation and ripe experience of the very successful campaigner of trotters. The observant conditioner of horses finds out that unused muscles become flaccid and lacking in tone, and that it takes months to redevelop them. During the process of redevelopment there are many chances of injury to the legs and feet unless great care is exercised.

Of course, taking the trotter as an example might be considered as citing an extreme one, but what applies to them is applicable in a lesser degree to horses doing less taxing work. Some handlers of show horses put them into a loose box for two or three months in the winter. This is done to save expense and trouble and to freshen up the legs. Certainly if a horse is lame a good blistering and complete idleness is necessary until he recovers from it, but otherwise the legs will freshen up with walking exercise, will stand putting to fast work again, without showing so much "wear and tear" from it. Nothing tends to put a horse "over in the knees" more than periods of idleness alternated with periods of more or less violent exertion.

Not only is staleness of the legs encouraged by the course just referred to, but the same high standard of health cannot be maintained as in a horse that gets slow work instead of complete idleness.

FRUIT MARKETING.

To Exclude American Fruits.

Consul Goldschmidt, of Nantes, France, reports that an agitation has been started to secure the passage of a law to prohibit the importation of American dried and fresh fruits, plants, shrubs, etc., upon the ground that such importations are likely to introduce the San Jose scale. The matter has been taken up by chambers of commerce at Clermont, Ferrand, Angers, and other places, and the newspapers are advocating an exclusion law. For the year ending June 30, 1905, there was imported into Angers from the United States plants to the value of $79,043 and seeds $52,976. The consul quotes a leading importer as saying:

"To-day American dried fruits (prunes and apricots) are very well received by the French consumer, particularly those prunes coming from the Santa Clara valley, California. The American way of packing is also desired, when it is well done, and the goods are put up in boxes containing 12½ kilograms net of fruit, with lace paper or fancy paper on top of the fruit. But many complaints are heard concerning boxes which are too weak and cause breakage, which frequently spoil or damage the contents. This is one of the points to which packers should pay particular attention, as carelessness in packing causes prejudice to the goods.

"The prunes from California can be much better preserved than the French prunes, and the Americans seem to have reached perfection in that line, as the fruit, if properly handled, may be kept longer than our products. It is particularly the larger sizes that are desirable and sell readily. Those of 30 to 40 to the pound up to 60 to 70 to the pound are what is wanted here. The smaller ones do not sell readily here.

"Importation of American prunes into France is only possible when the native crop is poor or very small, as under conditions of equality in price the French prune is preferred, which seems to have a better taste and contains more meat and a smaller kernel. However, the California prune is popular here and will sell readily each time that the crop in France falls below a certain amount."

Concerning the repacking of American prunes into French receptacles, the same gentleman said:

"Some three or four years ago, when the prune crop here was a complete failure, the country producing these prunes—Agen—tried to import prunes from California in barrels and boxes, and afterwards repacked them in the French manner, which permitted the raising of prices. But the consumer soon perceived the fraud, and to-day it is impossible to repeat this, as the consumer who is accustomed to California prunes wants them in their original boxes. The American dried apricot has obtained a good foothold here, and meets with no competition worth mentioning."

Commenting on the foregoing, the consul says:

"I believe there is no serious reason for this agitation against American fruits, and against dried fruit in particular, and it seems apparent that the main reason in view by the agitators is not only to discredit our fruits (since there is no serious importation when the crops are good here), but also to damage their reputation elsewhere, with the hope, possibly, to drive our fruit out of other markets, where the French fruit may replace it. The resolution by the chamber of commerce at Clermond Ferrand contains an allusion to Switzerland which clearly indicates such a hope. With these facts in mind it should be easy to circumvent any attempt at injuring our commerce in such an unfair way."

THE FIELD.

A Transitionist's Tale.

To the Editor:—I am at sea, yet on the land. A polywog among teachers, I shift my scenery to earn a living. This I must do; for the rose has faded from my own cheek, and the cherry from my lip, to reappear in the faces of my children, making them still more dear to me. Thirty-six years of schoolroom struggle has not given me special strength to win my way in spheres of muscular labor. But no matter, it must be done.

So here I am, like many others, changing my modus vivendi. Several years ago, looking forward to the inevitable, I managed to get some mountain land and water. To these I turn to keep my place in the stream of life. Thither I go in the summer to camp and do some surface studying. But I seem never to be able to answer the question what to do. Shall I specialize or diversify along lines of universal effort that cannot, either one, be pursued with any degree of completeness and satisfaction?

First, I have a few trees. But orchards grow slowly, and years must pass before the orchard can bring a living. To a poor man the orchard seems a far off bonanza, too far off, however, to plan for it alone and wait. Yet some orchard must be had, and while it grows something else must be done.

Second, there is the vegetable crop. The vegetable returns are quicker than those of the trees. But the mountains are not the best place for vegetable markets. Well, I must try something, not perishable, like beans. Beans are not daisies, however; they can be disposed of for better things. Besides, the beanstalks, properly stored and salted, make rough feed for which the stock eagerly stand around in the winter. So the bean is a stone that kills two birds withal, the store bill and the good family cow. That is, the cow lives by beans, and so do the children.

The raising of vegetables calls my attention to irrigation. I would like to write it in my garden, in green, as Washington wrote his name in his little garden bed, "God is the farmer's partner where the summer rain falls and the dews distill." Albeit, with the blessing of water in sight, the Californian, for the sake of his matchless climate, can well afford to apply the water to the soil at his leisure. (By leisure, I mean time when he ought to be sleeping or resting.) I would like full instruction from some one about how to irrigate. I have learned to irrigate, if possible, from the under side, and never to run water on a tree or plant. Let the water find its way through the soil. Surface wetting must be by very small streams, so that the water percolates the ground much as it does during a gentle rain. Irrigation must not wash out the best elements of the soil. Don't wash away the ranch for the sake of just one crop. I find sloping or hillside land best adapted to sub-irrigation. Land that I considered only good for grazing a few years ago I now believe to be my best land for orchard and vegetables, because it naturally sub-irrigates itself. My first view of irrigation was superficial. As I saw the water coursing over the land through the ditches I thought irrigation was inundation. The novice must wake up and take a few lessons from Nature in the process of keeping moist the soil.

Third, as to cattle. I have not enough to run cattle exclusively. How shall I handle them most easily and make most out of them? The market reason for raising beans suggests the making of cheese. I can milk about a dozen cows, tame the calves and hold them on the range. I read in the "Agricultural Year Book for 1904" that cheese can be made successfully without cold water and ice. In my general ranching, tentatively along special lines, shall I try making cheese? The calf kept up on grass and getting part of the cow's milk is, next spring after, nearly as good as the one that runs with the cow on the range. The range calf depends on the milk for food and flesh, and when weaned it has too sudden a change to grass for sustenance. It must fall off, but the calf raised away from the cow, except at milking time, has learned the habit of grazing better than the range calf. The former stands the weaning better than the latter. Besides there is so much more satisfaction in handling tame stock than wild ones.

This attention to dairying in connection with ranching seems to offer some help in raising pigs and chickens, at least for home use.

Along any of these lines I would be glad to receive helpful suggestions either from the Pacific Rural Press or its readers.

No doubt some of your readers are in the same predicament I am—old horses, as it were, turned out to die or learn new ways of living in the old and honorable routine of country life.

Aaron W. Frederick.

North Fork, Cal., Aug. 15, 1905.

THE VINEYARD.

Table Grapes at Florin.

In the Florin section, says Sheriff Reese in the Sacramento Union, the grape crop will be light this year because so many grapes were burned up in the hot spell. But of what remains the quality is good—first-class, indeed. Of course, we do not lose all of the burned bunches, but it makes the labor harder, as it is necessary to go through them all and cut out the defective and scorched grapes.

In packing we work over all the bunches of our grapes and with the scissors take out all the deformed and injured berries. If we cut the stem below the berry there will be no bleeding, but if the berry is pulled off the bleeding will be great. So we invariably cut off the little berry stem close to the stalk, that bleeding may not ensue.

Florin Grape Acreage.—Yes, the acreage has much increased for grapes in the Florin section, especially the acreage of planting in the strawberry fields. The strawberry lasts from three to four years and then it is gone, and there must be resetting. So we plant grape cuttings along with the strawberries and when the latter go out we have grapes in bearing, usually. Thus we have comparatively small cost for grape cultivation, for while we are cultivating the soil for the berries we are also doing it for the grapes and hence we raise grapes cheaply.

Strawberries are set out in beds from 3 to 3½ feet wide. The berries root shallow, the grape roots deep. The first year the cutting has no root at all, the second the root begins and so the berry is unaffected by the grape. If the strawberry was left in until the grape fruited, then the berries would be affected by the vines.

We place the grape cuttings on the edges of alternate rows of berry patches, so that the grape lines are about 8 feet apart. Of course, the grapes can be forced with water, but it is little done, and we find them to come in about right when the berry vines are exhausted.

Florin Flame Tokays.—The bulk of our grape growing in the Florin section is Tokays, and there are no better in the State, if I do say it. In other places they grow greater quantities than we do, but in many such localities, because of such large growing, the grapes are apt to be too much sheltered to color well, but anywhere California Tokays are fine.

The Florin grapes are very hardy, color richly and ship excellently. The people at the East seek the Florin Flame Tokay largely for table decoration, and there is nothing richer or handsomer than Flame Tokays from Florin for table, for after all people eat grapes a good deal with their eyes, do you know?

Acreage Will Augment.—I think the grape acreage in our district will continue to enlarge. There is no reason whatever why it should not that I can see, and year after year you will witness the expansion of our grape growing section and the augmented demand for our superb, glowing Flame Tokays.

Largest Price Ever Paid.—By the way, speaking of prices, I have just returned from Florin this evening and saw the return of the first sale of Florin grapes in Chicago this season. The crates of four boxes each of about five pounds to the box brought $10. That is at the rate of $1000 a ton and is the highest price ever paid for grapes from this section.

The Highest Price for a Carload of Grapes.

George B. Katzenstein, manager of the Earl Fruit Co., being asked by the Sacramento Union to verify the sale of a carload of fruit in the Chicago market on Monday for over $2700, said: It is a pleasing fact, and, in announcing it to you, I may say that it is the highest price ever realized on a single car of deciduous fruit at any time or place, with the exception of cherries, which record, by the way, the Earl Fruit Co. also holds, having sold a straight carload of cherries from San Jose in New York City on May 26th last for $5342. The previous record sale was on a car of Emperor grapes sold by the Earl Fruit Co. in New York City November 19, 1902, for $2687. On Monday last a car consisting almost entirely of Malaga grapes was sold in Chicago for our account, realizing $2741, a heretofore unheard of result. This car also originated in Fresno and was sold for account of the growers who were represented in the car, as follows:

Droge Fruit Co., 700 single crate Malagas	$2 90
Droge Fruit Co., 90 Malagas	2 75
Droge Fruit Co., 40 Malagas	3 00
P. Genoni, 42 Malagas	2 82
M. Bolich, 41 Malagas	2 70
M. Bolich, 10 Malagas	2 90
M. Beck, 42 single crate Hungarians	2 15

Agricultural Review.

Butte.

PECULIAR POISONING.—Oroville Register: A resident of the West Branch section tells us that quite a number of cattle have been poisoned in a peculiar manner during the present summer. Stock running on the range across which the Butte County Railroad is being built, that is, from Stirling City to Nimshew, eat the paper in which giant powder has been wrapped, and they also lap or eat the sawdust in which the powder has been packed. The powder that adheres to the paper and the sawdust is poisons to the cattle, and in consequence a number have lost stock in that region during the past two or three months. It seems there is a salty taste to the paper and to the sawdust, and it is this probably that causes the cattle to eat the same. The giant powder is being used by the men who are building on the railroad from Stirling City.

El Dorado.

FIRST PEARS SHIPPED.—Georgetown special to Sacramento Bee, Aug. 25: The first shipment of Bartlett pears from Georgetown was made this week. The crop is fair and the quality of the fruit is good. The prospects for a good apple crop are excellent.

Fresno.

WINERIES WILL NOT CLOSE.—The eight wineries of the California Wine Association in Fresno county will not close for the season, as was threatened by the stringent Government regulations last week. Commissioner Yerkes, of the Internal Revenue Department, has been heard from, and the wineries will operate this season. The trouble was precipitated last Saturday at the Scandinavian winery, Government officials requiring fermentation for sweet wine and brandy to be done in separated and disconnected worms; fermenting tanks registered and records kept open to revenue officers. Winemen say they cannot tell what grapes they will use for wine and what for brandy until fermentation has taken place, and rather than run up against these and other new stringent rules, they decided to close down for the season. This has been obviated. Referring to the matter, Chief Deputy Collector C. G. Fowler stated that Commissioner Yerkes had written an exhaustive letter from Washington on August 26th, making various concessions, the exact nature of which would not be known until the arrival of the letter. He also said that, upon receipt of a long telegram from the office of the Collector in this city, Yerkes had wired back that there need be no apprehension, and that concessions had been granted which would relieve the situation. The hardships implied in the original order to run wineries and distilleries separately had been entirely obviated, and California producers would not be handicapped in their manufacture of wines and brandies.

CLOVIS PEACHES.—Fresno Republican, Aug. 27: The crop outlook for Clovis district is especially encouraging. Many instances of large returns from small holdings are already reported. Will Hanchett received $210 from one acre of peach trees (107 trees) last week, selling at 7 cents a pound. His five acres of land has yielded enough this year to support his family had he not had it worked on shares. Some of the river bottom ranches are yielding large crops of peaches.

Humboldt.

APPLES SHIPPED TO AUSTRALIA.—Eureka dispatch to Sacramento Union, Aug. 22: Twenty thousand boxes of Humboldt apples are to be shipped to Australia at an early date. This is the first direct consignment ever bargained for from this district, although other portions of the State have been supplying the Australian market through San Francisco commission men.

Kings.

RAISIN PICKING. — Hanford Journal, Aug. 25: O. B. Ashford, superintendent of the Little Lucerne vineyard, states that grapes on the Little Lucerne are now ripe enough to pick for raisins, but not for the winery, to which latter use they are put. He says, however, that out near Grangeville the vineyardists who are going to make raisins of their grapes are now laying out the drying trays and that a good many will begin picking next Monday. This is very early. The crop generally, he thinks, will be rather light. Prunes are about an average crop—rather shy in bearing—but the prune growers will be strictly in it this year, as prices are good.

Mendocino.

THE HOP CROP.—Ukiah Press, Aug. 25: Hop pickers have been moving to the fields this week to get in shape for picking. Several of the growers announce that they will commence picking Monday noon, and it is said that by the middle of the week hop picking will be in full blast. It is estimated that the crop in this valley will be about the same, or possibly a little less, than it was last year, including the new acreage. Prices are expected to open between 15 and 20 cents and the growers feel confident of being able to secure close to the latter figure.

Monterey.

APPLES.— Pajaronian, Aug. 24: The Bellefleur apple trees in Pajaro valley are so heavily burdened with fruit that it will probably be necessary to make two or three different pickings in order to let the apples reach size in turn. The fruit was not thinned properly earlier in the season, and, therefore, care will have to be exercised in picking.

Napa.

ANTHRAX APPEARS.— Anthrax, the dread disease among cattle, has broken out on several farms southwest of Napa. Last week A. Callan lost about ten head of cattle by this scourge, and J. Carney lost eight head of fine cows. Dr. Charles Keane, the State Veterinarian, assisted by Veterinarian L. C. Kennon of Napa, has established a strict quarantine of the stock of the two ranches mentioned, and a determined effort is being made to stamp out the malady. Injections of serum are being made by Drs. Keane and Kennon into the cattle on the ranches southwest of Napa as a preventive against the spread of anthrax, which is supposed to be due to certain conditions in the lowlands where there is a great amount of moisture.

Sacramento.

FOLSOM SHIPS FIRST TOKAY GRAPES.—Folsom dispatch to Sacramento Union, Aug. 23: The first Tokay grapes shipped from Folsom this season to the East left here on August 12th. These were from the tracts of P. S. Wahrhaftig and F. W. Staunton at Orangevale. A few crates have been sent out since, but shipments in earnest will commence soon. The tree fruit has mostly been picked. Nearly thirty carloads have been sent East from this point this season, and some fancy prices were realized. The grape crop will be average, notwithstanding the fact that nearly half the original crop was ruined by the July hot spell. The growers expect to get good returns from grape shipments this season.

San Joaquin.

PLUMS.—Stockton Independent, Aug. 26: Fruit growers of San Joaquin county are getting large returns on their Eastern shipments this year and the grape growers are counting on a very profitable season when their Tokays are sold in the far away market. So far as can be learned at this time the record for big returns on fruit shipments this year is held by R. E. Wilhoit, whose orchard at Woodbridge is one of the show places of the county. From six acres of Kelsey plums the net returns this year will be more than $350 per acre, and if the yield is as large as the packers believe it will be the plum sales will reach the enormous sum of $400 per acre, and the net profit on the crop will be more than $350 per acre; other crops almost as profitable. Tokay grapes that are three years from the cuttings will produce a profit of $100 per acre this season. The first shipment of Kelsey plums from the Wilhoit orchard brought $5 per crate of four boxes, weighing twenty-five pounds to the box. It has been figured that the plums in the first shipment brought 7 cents apiece at auction in the Eastern market.

PEACHES IN COLD STORAGE.—Stockton dispatch to Sacramento Union, Aug. 26: Peaches from various points in the State are being shipped to Stockton and placed in cold storage. An ice company has found by experimenting that it can freeze peaches and keep them three months easily. Last year the experiment was made successfully and this year the company has engaged in storing fruit as a business. Already there are 5000 boxes of peaches on ice at the local plant.

Santa Barbara.

ALFALFA RAISED BY IRRIGATION.—Santa Barbara Press, Aug. 24: One of the important features of the county is the action of the managers of the San Marcos rancho in providing irrigation for rich bottom lands along Santa Ynez river, for the purpose of encouraging the production of alfalfa. The first attempts with alfalfa on the ranch were made seven years ago, on a small scale, a ditch first used by the padres being adapted to the purposes of the present age in carrying water from the river to the land. The experiment proved so successful that during the past season an extensive irrigation system has been surveyed, and arrangements have been made to deliver the water of the Santa Ynez to various tracts adjacent to the river banks and adapted to irrigation. As many as seven cuttings in a year have been made on the San Marcos alfalfa fields. Where it can be produced at a minimum expense for water, alfalfa is the cheapest and best feed for dairy cows, and it is the intention of Mr. Mead, who has the rancho leased for a long term, to fit out various tracts suitable for the purpose as dairying farms, and to sub-let them to practical dairymen. This will increase the productive capabilities of the vast ranch, which has heretofore been maintained solely as a stock range.

Sonoma.

BIG HOP YIELD.—Santa Rosa dispatch to Sacramento Bee, Aug. 25: Hop picking will soon be in full blast in Sonoma and Mendocino counties and an army of persons will be employed in gathering the blossoms. The work will begin in Mendocino county first and the beginning of the labor in Sonoma county will be about Sept. 1. This morning a special train of four coaches went to the Horst hop fields, north of Hopland. The estimated yield of the crop of Sonoma county this year is between 21,000 and 22,000 bales. This will be an increase of more than 2000 bales over last season. Growers are sanguine of good prices this season, expecting the market to open better than 20c. A few hundred bales of hops are still in Sonoma county growers' hands.

GOOD SEASON REPORTED.—Santa Rosa Republican, Aug. 25: The peach crop in Sonoma district, which is now being gathered, is a good one. Pears and prunes are below the average. Grapes are promising a good yield.

Stanislaus.

SOUR CLOVER SPOILS ALFALFA.—Stanislaus News, Aug. 25: A prominent West Side alfalfa grower was in Modesto Tuesday consulting with his attorneys regarding the bringing of suit against the San Francisco firm which sold him his alfalfa seed, on account of the fact that the seed contained seed of a plant known as "sour clover," which looks much like alfalfa, but which renders the hay so bitter that horses and other stock absolutely refuse to touch it. The gentleman in question purchased a considerable quantity of the seed from the San Francisco concern, and the sellers represented it to be pure Utah alfalfa seed. It was planted and a magnificent stand of alfalfa was the result, but growing with the alfalfa was almost as much of the "sour clover." The grower cut almost three tons of hay to the acre the first cutting, and, not having occasion to feed it to his stock at that time, he put it in the stack. His alfalfa (and "sour clover") now has a good stand and is almost ready to cut again. Several days ago the alfalfa grower fed some of the first cutting to his stock and was surprised to see that the animals would not touch it. He talked the matter over with some alfalfa experts and they, after making a close examination of the hay, pronounced their opinion that the trouble was due to the fact that the hay contained the foreign growth of clover. The two plants look very much alike, the leaves being the same, and the only difference being that the clover grows a little ranker—to a greater height. The discovery of the clover in the alfalfa led the gentleman to make inquiries in the Modesto irrigation district at farms where the owners had purchased their alfalfa seed in San Francisco, and it was found that a number of acres of alfalfa in this locality are troubled with the clover. The West Side grower mentioned above is consulting with his attorneys about bringing suit against the firm who sold him the seed, as he has suffered considerable damage from the impure seed in the loss of his crop of alfalfa—which is now useless—his work in preparing the land and irrigating it, and the cost of the seed. It is probable that a complaint will be filed within a few days, and the outcome of the suit will be watched with interest by those farmers who have already purchased the impure seed and find the clover in their alfalfa, as well as those who expected to purchase seed for planting this fall.

Sutter.

FIGHTING PEAR BLIGHT.—Yuba City special to Sacramento Bee, Aug. 25: Prof. M. B. Waite, of the United States Department of Agriculture, visited the W. P. Harkey orchard, north of Yuba City, where the treatment of pear blight is being carried on. The object of his visit here was to ascertain what advancement, if any, the trees are making under the treatment and to ascertain whether or not the disease is abating. Prof. Waite states that his examination proved more than satisfactory and exceeded his expectations. When asked whether his plan would be to trim the trees this fall enough to eradicate the disease at once, he said such a plan would be impractical, for the reason that should the trees be cut back enough to take away all the blight, little would be left of them, and the treatment would be equal to rooting up the trees entirely.

Tehama.

SHEARING ON THE RANGES.—Red Bluff special to Sacramento Bee, Aug. 22: Wool has commenced coming in from the summer ranges in the mountains, where many of the owners are shearing their flocks this year. Those who intend to shear in the valley will not drive their sheep down from the mountains until the weather gets a little cooler. When all the sheep are out of the mountains there will be over 600,000 head in this county.

FRUIT CONDITIONS. — Corning Observer, Aug. 24: Almonds are being harvested in the several orchards and the yield will bring a good price. The peach crop is nearly all cared for, almonds, prunes and olives being the next crops to be harvested. Shipments of watermelons and cantaloupes are now going forward from Richfield colony in smaller quantities, the great demand having nearly exhausted the supply. The only place in this locality where melons have been raised in commercial quantities is in this colony. Besides the local county consumption, about 7000 dozen cantaloupes have been shipped to northern markets.

Yuba.

FIRE AT HORST RANCH.—Four Corners, Aug. 25: A disastrous fire occurred on the E. Clemens Horst hop ranch, 3 miles east of Wheatland Tuesday night about 10 o'clock, when three large new double kilns and about 4000 pounds of partially dried hops were destroyed. The fire broke out in the roof of the kiln farthest from the furnace, and is said to have been caused by spontaneous combustion. The fire was discovered as soon as it broke, but the combined efforts of the men at the scene were unable to check the blaze. The kilns destroyed were fitted with the new process air dryer, and the gasoline engine used as the motive power was saved from destruction, as was the new cooling room. The fire at this time seriously handicaps the work of the harvest on this place, as it will be necessary to haul the hops to the dryers on the high land, a distance of over a mile. With this serious handicap of curing facilities the crew of pickers will not be as large as would have been necessary and the season will be somewhat longer in consequence. The loss on buildings and hops is estimated at $40,000.

REED ORCHARD LOSS.—Marysville special to Sacramento Bee, Aug. 25: Word has been received here that pear blight has played havoc in several orchards in the Biggs section. The Reed place of 120 acres has suffered especially, it is said, and the orchard may be ruined. When it is recalled that last year this orchard produced nearly $40,000 worth of pears, a good idea of the loss may be gathered.



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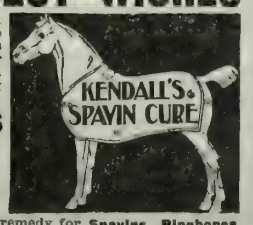
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The Health-Food Man.

His eyes are balls of polished steel;
His lungs are sponges dried;
His blood is boullion-concentrate
In veins of leather hide.

His muscles creak like pulley ropes
When hurled into play;
His hair is like piano chords—
Some chords are lost, they say.

His heart's a little globe of punk—
A house of constant gloom,
For love can never burn within,
Because there isn't room.

His appetite has dwindled down
To fit his little food,
Till fruit is "water in a poke"
And bread is "so much wood."

Hot apple tarts and pumpkin pies—
He reads of them aghast;
And waffles brown and chicken stew
Are "terrors of the past."

And, smiling, from his vest he slips
A tiny box of tin,
With capsules brown and pellets pink
All rattling within.

Then, with a gulp, he swallows down
His dinner from the can—
This product of the health-food school,
The Concentrated Man!

—Aloysius Coll, in What to Eat.

A Bosom Hardened.

So I put faith in her,
This woman Titian haired,
This Juno careless clad,
And with the mild blue eye.
For she had spoke me fair;
And at the last,
How she my bosom wrung!
Aye! And with pleasure unconcealed,
And a calm indifference
That one might feel who, cruel,
Sets heel upon a harmless worm,
She viewed her crushing work.

And yet,
With feeling that 'twere doubtless well,
And knowing not how hard
She'd make this thing for me,
I turned no show of sorrow to the world,
Nor felt one pang.
And, had she not dared
To trifle with its further weal,
Not now beneath my bosom, hardened thus,
Would I be harboring curses deep,
'Gainst her and all her ruthless kind!
But, ah! that bosom was
Of finest Madras wed and woof,
Front of the swellest outing shirt
That ever cost five dollars, net,
And soft as filmiest silk
It should have hung, and limp;
But she—this laundress mine—
She starched it! aye!
Starched it stiffer than a hemlock board!

—Ed. Mott.

A Song of Joy.

A green bank under a hawthorn tree,
Sing, oh, sing right cheerily;
Violets blue and violets white,
Primroses yellow and cowslips bright;
Lilt of a lark and the blackbird's note,
Thrush's trill on the air afloat—
A green bank under a hawthorn tree,
And many a queen might envy me!

A green bank under a hawthorn tree
Is dearer far than a throne to me;
Over my head the blue, blue sky,
Wind's low song as it passes by—
Far in the West the glad sea smiles
With its golden cliffs and its hundred isles,
A magical cup filled with glee
Is a young heart singing cheerily.

—From "Songs and Poems," by Lizzie Twigg.

As It Should Have Been.

"Is it good-by, my sweetheart?" asked Philip Desmond, sadly, tenderly raising the face of the girl he loved until the sweet brown eyes, wet with the bitter tears of farewell, should have gazed upward into his own. "Is it good-bye, my darling?"

For answer the long, curling lashes drooped still lower, the pale cheeks grew paler yet. But the red lips, wonderfully pathetic in the new curve taught them by grief, were silent. Helen Grafton was a courageous girl and she strongly objected to any outward show of feeling. So, as she knew that to manage her voice successfully and steadily would be an impossible feat, she made no effort toward speaking, and allowed the mournful question to pass without audible response. But the lashes and cheeks and lips alluded to above made eloquent answer and touched the heart of her lover as no words could have done. Only an innocent girl dare to be silent at such moments, only a thorough coquette knows the power of such silences. Helen Grafton was no coquette, but her silence effectively tightened the bonds which held her lover so closely.

Now with a smothered exclamation, he gathered her into his arms, pressed her face against his own aching heart and laid his cheek tenderly against the coils of soft, wavy, golden-brown hair which crowned her head. For a moment—a long, long happy moment—neither stirred, then Philip groaned.

"How can we part?" he ejaculated, breathlessly, "how can I leave you alone? Tell me once more, dearest, will you not change your mind? Is it really good-by?"

This time Helen answered in words. The pain in his heart had echoed through his voice and, like the true woman she was, she felt willing to bear more suffering if, by so doing, she could shorten his. Her eyes were bright and tears hung in a glittering row upon her eyelashes and gleamed when she moved her head, like diamonds or dewdrops. The red lips were pressed closely together, and as she parted them a short, gasping sigh escaped her. But she did not falter or turn aside from her purpose. She must end the matter for his sake.

"Yes," she said, as gently as decisively. "It is good-by, dearest. It is good-by."

"Then good-by forever!" he exclaimed thrusting her from him so suddenly and harshly that her little clasped hands fell sharply down from their resting place upon his breast "good-by for good and all. You have broken my heart and all for a foolish whim."

"Not for a whim, dearest," she answered, as gently as ever, "not for a whim, dearest, but for a principle."

"Principle nothing!" he retorted harshly "it is a whim, I say. Because when you were a child your mother must promise that you should marry that old man whenever he asked you, you must sacrifice both your own life and mine."

"How can I help it?" she questioned brokenly. "A promise is a promise, and you know that all through his long journey, all through his struggles for the wealth he has earned, he has thought only of me. He says that the remembrance of my face has upheld him in times when death seemed the only possibility, and that but for the love of me he would have gone mad many times."

"Oh, yes! He says, he says," interrupted Philip still angry but mollified slightly by her evident suffering and the tears which ran slowly down her smooth cheeks pale now for the love of him, "what he says is all very well—for him, but what of us? What of my heart, what, my dear one," drawing her toward him once more, and gazing down steadily into her face, "what, my dear one, of yours? Do you love him, this rich old man to whom your mother promised you?"

A quick sob hindered Helen's answer for a moment. When she spoke the sob had been vanquished, but the sound of tears still rang through her voice.

"You know that I do not love him," she whispered, holding one of his large, strong hands in her own small icy fingers. "You know that I love you only of all the world. But, as I said, a promise is a promise, and it would break mother's heart if I broke the troth she made for me."

"You ought to have lived several centuries ago," he broke in hotly. "A mediæval mind in the nineteenth century body is a curious anomaly. What have you to do with your mother's promise? Why should she have given such a ridiculous promise? And why should we suffer for her conduct?"

His voice was hot with wrath, his face flamed and the hand which rested on Helen's shoulders gripped it with such force that the tender flesh was bruised. The girl shrank a little away from his eager intensity, and he seeing this, winced and released her. Then Helen spoke—

"Wait a little before condemning my poor mother," she said, drawing him toward the sofa. "Let me tell you the story of my betrothal to Mr. Van Lippe."

The young man made an impatient movement and the drapery of the door behind the sofa stirred a little. Was it the wind or the result of his quick change of posture? Helen wondered about this vaguely, but her mind was upon the subject of her story and she hardly gave the matter anything but the most casual attention.

"Let me tell you," she repeated, her caressing tones soothing him into something like acquiescence, although he still twirled his mustache impatiently, "let me tell you all about it. When my father died, and many months before, he was in great financial difficulties. He had left England sorely against the wishes of his parent—as he had married my mother against those wishes—and good luck was slow in finding him. Before it really came he was on his deathbed. Mr. Van Lippe, who was an old and trusted friend of both families, came to his aid and my poor mother often says that, but for his kindness, my father would have died in sorrow and distress.

"Money matters were made all right soon after, and we have always been comfortable, as you know, but who could repay the sympathy and assistance Mr. Van Lippe gave to my mother in her time of need? When she no longer needed him, when her own mother was with her, he bade her good-bye and for several years she saw nothing of him. But when he thought a suitable and respectful time had passed he sought her again and offered her his hand in marriage. She told him that this was impossible, that my father had been her only affection, but sorry for his pain, she promised him my hand if he cared to wait for it. And Philip, he has waited, and I am his by right of that long probation. I am yours, all yours, by right of love, and had I known that I was not free I would never have listened to you for a moment. But until yesterday I did not know; I thought that Mr. Van Lippe was but a dear and kind friend. As such I love him dearly, but, Philip—judge by your own heart how hard it is for me to say this—he has thought differently, and I must do my duty and try to forget you. I hardly know," her voice losing its perilous steadiness and sinking in a sobbing whisper, "I hardly know how I shall do this, but do it I must. It is my duty."

"It is not your duty," Philip interrupted angrily; "how can you talk such utter nonsense? Your duty is to marry me and let Mr. Van Lippe look to your mother for the fulfillment of a promise made without your knowledge or consent."

"I agree with you, young man," said a grave voice, kindly, and Mr. Van Lippe walked slowly from behind the trembling drapery. "I did not mean to listen, young people," he said quietly, "but I entered the hall just as you began to talk and was arrested by the sound of my name. The servant, knowing that Miss Helen was in here and that I was expected—I was about to propose in fact"—with a grim smile—"did not consider it necessary to announce me. So as I removed my overcoat, I heard a portion of Helen's story and my conscience does not smite me in the least that I listened to the rest. On the contrary, I am thankful that I did so.

"I hardly think you could have deceived me into thinking you loved me as a wife should, little girl," turning, with a kindly smile, to the weeping Helen, "but your too sensitive ideas of right and wrong might have caused both you and your lover no little suffering, if I had not happened to hear. Believe me, dear child, I should never have dreamed of asking you to marry me had I known of your ignorance of your mother's promise or suspected the existence of this young man. Forgive me the pain I have already and unwittingly caused you, both of you," extending a hand to each, "and accept my congratulations. I am a lonely old man, but I love you, Helen, as dearly as I loved your mother years ago, as dearly as I love her now, and I wish you every happiness. I think I shall send a card up to your mother now," and with a smile he retreated from the room.

For a moment until the sound of his feet on the stairway which led to Mrs. Grafton's boudoir had grown very faint and far away the lovers were silent. Then Helen turned a smiling, blushing, glorified face toward Philip and he bent to kiss it rapturously.

"How would you like Mr. Van Lippe for a step-papa?" he asked mischievously, and an answering twinkle in Helen's eye pushed Mr. Van Lippe very far into the background of his mental scenery.—Waverly Magazine.

Crowd Poison.

"The body is a factory of poison," said Ch. Bouchard, one of the greatest of living physicians. In other words, the human body in its vital processes forms products which are themselves injurious to it. The retention within the body, or the reabsorption into the body, of poisons manufactured by itself, is one of the principal, according to some the only, causes of disease.

The poisons made by the body are numerous. To mention them all would not be here practicable. There is one, however, so much more insidious and far reaching than the others in its injurious effects that it deserves special attention. This is the poisonous gas exhaled from the lungs, and known as carbonic acid gas, or carbon dioxide. Life of all organized bodies is, in reality, a kind of combustion; and in all combustion we have the destruction of oxygen and the production of carbon dioxide.

If one takes a stub of candle one inch long, lights it and places over it an inverted glass tumbler, the light will burn brightly for a few moments, then will become more dim and finally go out. What has happened? Simply this: The combustible elements of the candle in the change producing the flame use up the oxygen in the tumbler and produce in its stead carbon dioxide. After a time the proportion of carbon dioxide becomes so great that the air can no longer support the combustion—that is to say, there is no more oxygen to burn—and so the flame goes out.

This is chemically very much what happens to the man who is drowned. The flame of life goes out because it is choked by the carbon dioxide of its own producing.

It is easy to accept the statement that the human body makes poison. But it is a surprise to many people to realize how much poison the body produces. It is a surprise to realize, for instance, that every year a ton and a half of material passes through the human body; that a large proportion of the ton and a half so passing out of the body is matter which was once the body; that the human body is not a fixed solid thing, but a flowing thing; that it is not like a lake, but like a cataract.

And it is equally surprising to realize that each day there passes in and out of the lungs as much air as would fill a room of moderate size, and that each breath which leaves the lungs contains two cubic inches of carbonic acid gas and contaminates five thousand cubic inches, or nearly half a barrel of air.

And this carbon dioxide is "crowd poison," a tasteless, odorless, invisible poison that lurks in the crowded sweatshop and the sumptuous drawing room. The schoolroom, the theater, the church, the shop, the office, the public conveyance, the stores—all are infested by this deadly crowd poison. Other poisons can be avoided. They can be seen, tasted, smelled; we can avoid the places where they are found. But crowd poison is everywhere. He who meets his fellow men in professional intercourse, in business, in society, or for intellectual diversion, must face this hydra-headed foe of humanity.

A peculiar fact which adds to the danger of "crowd poison" is the fact that one soon grows accustomed to it. Then it ceases to cause inconvenience,

although the deadly effect is quite the same. A simple experiment is sometimes shown to demonstrate this tolerance. A mouse or guinea pig is placed in a small air-tight glass receptacle. For a while he is quite comfortable; then his life flame, like that of the candle, begins to flicker. Still the animal body is so complex and resourceful that in spite of some embarrassment the life processes go on. In medical terms we would say that special toleration had been established. If at this stage of the experiment we introduce into the receptacle another small animal it will promptly die, while the one first placed therein continues to live for some time. The first animal lives on because during the gradual increase in the carbon dioxide in the air it was breathing it became accustomed, "tolerant" of the poison. The second animal, having had no such preparation, and being unaccustomed to withstand the poison, promptly succumbs.

So one re-entering a crowded theater on a cold night is very apt to be momentarily oppressed, perhaps sickened, by the heavy, dense atmosphere. In a short time, however, toleration is established and he ceases to feel any inconvenience. The vital organs, however, are suffering, and the subsequent headache, nausea, depression or "cold" are the direct results of the tonic action of "crowd poison."—Health Culture.

Gentleness.

"Talk to your cow as you would to a lady." There is a world of common sense in it. There is more; there is good sound religion in it. What else is it but the language of the Bible applied to animals: "A soft answer turneth away wrath." A pleasant word to a horse in time of trouble has prevented many a disaster where the horse has learned that pleasant words mean a guaranty that danger from punishment is not imminent. One morning a big, muscular groom said to his employer: "I can't exercise that horse any more. He will bolt and run at anything he sees." The owner, a small man and ill at the time, asked that the horse be hooked up. Stepping into the carriage he drove a couple of miles, and then asked the groom please to station along the road such objects as the horse was afraid of. This was done, and the horse was driven by them quietly, back and forth, with loose lines slapping on his back. The whole secret was in a voice that inspired confidence. The man had been frightened at everything he saw that he supposed the horse would fear. The fear went to the horse like an electric message. Then came a punishing pull of the lines, with jerking and the whip. Talk to your horse as to your sweetheart.

They were dining at the hotel where they have music and had reached that part of the repast when the preserves —the "sweets"—come on. His was cherries in maraschino—new to him—and she was devastating ice cream and ginger squares. Finishing the contents of his glass saucer, he looked up and said to her as if announcing a discovery:

"It's maraschino!"

Just then the orchestra stopped.

"Yes," she said, "I know it; I heard Sousa's band play it once."

Statistics show that more people live to be one hundred years old in warm climates than in northern countries. In Mexico there are many centenarians, for in towns not forty miles from the capital are not a few men and women beyond the one-hundred-year line. Germany reports 778 centenarians, France 213, England 146 and Spain 401, and the population of Spain is relatively small.

A father, fearing an earthquake in the region of his home, sent his two boys to a distant friend until the peril should be over. A few weeks after the father received this letter from his friend:

"Please take your boys home and send down the earthquake."

SHORTHAND taught thoroughly; by mail; my demand more than supply. Miss M. G. Barrett, 302 Montgomery St.

Domestic Hints.

To Prevent Ink Molding.—A few cloves put into the ink bottle will prevent mold.

To Remove Tar.—To remove tar, put soft grease on the spot, rub it thoroughly with the hands, and wash off both grease and tar with warm soft water.

A Substitute for a Corkscrew.—A convenient substitute for a corkscrew when the latter is not at hand may be found in the use of a common screw with an attached string to pull the cork.

Farina Blancmange. — For farina blancmange heat a quart of new milk to the boiling point, sweeten and flavor to taste. Dissolve a tablespoonful of moss farina in a little cold milk and stir into the hot milk, which should be cooked in a double boiler. When smooth and thick, turn into small molds or cups or emptied eggshells and set in the ice box. When ready to serve, turn out of the mold or peel off the eggshells, arrange in a glass dish surrounded with a border of berries or jelly and serve with whipped cream.

White Fish Salad.—Boil sufficient white fish for your salad. When ready take out of the water. Boil gently in the same water half package gelatine and whites of three eggs. Strain and set aside to cool. Remove the bones from the fish and pick it to small pieces; place in a layer on a platter with some sharp gravy poured over it. Next a layer of beets, pickled cucumbers and hard boiled eggs, all cut in thin slices, then fish with gravy, and so on. Continue until all the fish is used, the last layer being gravy. Garnish with capers, pieces of the fish jelly and pickled beets.

Herring Salad.—Soak two good salt Dutch herrings in water twenty-four hours; remove the bones and cut in small dice; chop fine an equal amount of cooked meat of any sort and half the amount of boiled potatoes, apples and beets. Mince one tablespoonful capers and four hard boiled eggs, yolks and whites separately. Set apart a little of each kind for the trimming of the salad, and mix all the best carefully, so as not to mash it, with three tablespoonfuls sweet cream, two of sweet oil, two of vinegar, and pepper, sugar and French mustard to taste. Cut a few boiled potatoes and beets in thin slices and make figures with a vegetable cutter. Rub a form with sweet oil and cover the bottom and sides tastefully with these figures. Pour in the salad carefully and press it down. Now turn the form upside down on a platter and let it rest awhile, until the salad is settled. Then garnish with the white, red and yellow of the eggs, potatoes, apples, beets and herrings. Make a gravy of cream, oil, vinegar, sugar, pepper and mustard to taste. Salt salmon may be substituted for the herring.

Hints to Housekeepers.

Egg stains on spoons are easily removed with salt. Dip a damp cloth into some dry salt and with it rub the bowl of the spoon, which will soon be as bright as ever.

To clean all sorts of brass ornaments, wash them all over with strong ammonia, using a brush to scrub the embossed and otherwise wrought parts. Rinse in clear water, wipe dry and polish with a leather.

An egg that has been boiled soft and becomes cold cannot be cooked again and made hard, but a soft-boiled egg that has not had the shell broken may be heated by cooking three minutes in boiling water, and it will taste as well as if it was freshly boiled.

Finger marks and other slight soils may be removed from light-colored book covers by rubbing over them a little powdered pumice stone (sifted) with a piece of wash leather. Use another piece of the leather to take off any trace of the powder when the stain has been removed.

A hearthstone which should be white but has become discolored with age may be greatly improved by being treated with an application of whiting made into a paste with skim milk, to which a little washing soda has been added. Apply with a paint brush. This will not crack off as paint does.

Scouring an enameled saucepan with powdered pumice stone will remove its stains, but prevention is better than cure, and the easiest way to keep them nice is to boil them out frequently with water containing a little chloride of lime. In this way they may be always kept clean and nice.

In putting rugs away for the summer be sure to roll them tight, as they are always kept in stores, and stand on end to make sure that nothing will be placed on top of them. Then wrap in tar paper and put in a dark, dry closet, to make sure that moths will not be found in the nap when they are taken out again for use.

When starching toilet covers or anything that has fringe trimming, double the cover into four and gather the fringe tightly into the hand, hold it firmly while you dip the middle of the cover into the starch. When dry shake the fringe well, comb carefully with a large toilet comb, and it will fall as softly and prettily as when new.

To make glue that will last for years, break some pieces of glue and place them in a bottle with some whisky. Cork tightly and set aside for a few days, during which the glue will dissolve. This should be ready for use at any time except in very cold weather, when it may be necessary to place the glue bottle in hot water for a few minutes before using its contents.

To brighten a shabby carpet, sweep the carpet carefully to remove all dust, then go over it carefully with a clean house flannel, dipped in a pail of warm water, to which a cupful of vinegar has been added. The flannel must be wrung as dry as possible before it is applied to the carpet, which must not be more than damped in the process. If possible, let the carpet dry thoroughly before walking upon it.

The smell of paint, which is so injurious to health, is easily removed from a room by standing in it a pail of water containing a large handful of hay or a cut-up onion or two. The water alone would answer the purpose, but not so quickly as with the addition of the hay or onions. Leave the pail in the room for some hours, and then if the painty smell still lingers, throw away its contents, fill as before, and leave it again to finish its work.

Green tomatoes, cut in halves, rolled in flour and fried in drippings are delicious for breakfast. After the tomatoes are fried pour all but a very little of the drippings out of the pan, add a dessertspoonful of butter, and add slowly half of three-quarters of a cupful of rich milk. Pour this sauce over the tomatoes. Broiled ham accompanies this dish.



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The Markets.

San Francisco Produce Report.

San Francisco, August 30, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	$ 80⅞@ 86⅝	82½@ 82½
Thursday	81¼@ 80	82⅜@ 81⅝
Friday	80⅝@ 79¾	82@ 81⅝
Saturday	81 @ 79½	82½@ 81⅝
Monday	79¾@ 79½	81½@ 81¼
Tuesday	79⅝@ 78½	81¼@ 80⅝

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53⅜@53½	43⅞@43⅞
Thursday	54½@53½	44@43⅞
Friday	54⅜@54⅛	44@44
Saturday	54@53¼	44@43⅝
Monday	53 @53	43¼@43⅛
Tuesday	53 @53⅛	43⅛@42⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 35⅝@1 33⅞	$——@——
Thursday	1 33⅝@1 32½	——@——
Friday	1 34½@1 32⅝	——@——
Saturday	1 34¼@1 32½	——@——
Monday	1 32½@1 31⅛	——@——
Tuesday	1 31⅝@1 30¾	——@——

Wheat.

There is somewhat weaker feeling in wheat and the spot market is beginning to show signs of neglect. Only the choicest grade of California No. 1 will bring the quotations, while Oregon Club has suffered a decline of 2½c per cental owing to large offerings of new wheat crop in the North. There is little life to the trading in futures, the price of December option having fallen off three or four points, some contracts being made as low as $1.30¾ per cental, owing mainly to large offerings from the North and to advices from that section which state that the wheat yield in most sections where harvesting is not completed is without precedent this year both as to quality and quantity, some of the wheat running as high as sixty-four pounds to the bushel. Reports from the Northern wheat sections of the Middle West state that the yield will be 200,000,000 bushels of wheat in that section. If the weather continues good it will go considerably over that figure. The Red River valley, where a poor crop was expected, is good for twelve to fourteen bushels per acre.

California Milling	$1 55 @1 65
Cal. No. 1 shipping	1 50 @1 55
Oregon Club	1 47½@1 52½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.30⅞@1.30.

Flour.

The market is steady, with prices a shade weaker, though quotably unchanged. Millers concede that there will probably be a sharp decline as soon as the large Northern crop is fully harvested and on the market. At present prices are not allowed to drop, as there is very little spot wheat on hand of quality suitable for milling purposes, though the quality of the new crop in Oregon and Washington is said to be excellent in most sections. Milling companies in the North have been notified to cancel all shipments of flour to Hongkong and other Chinese ports. The refusal of the Chinese to take their flour will not seriously affect their business, as new markets are being developed.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

The market continues firm, prices ruling steady as quoted. Good bright lots of feed barley are in demand, and are easily bringing top quotations. Off grades are moving slowly, and though very little strictly good to choice is to be had, the off grades are not much sought after. A slight advance is noted in Chevalier in both choice and common stock, mainly on account of the scarcity in the market. Advices from the grain sections of California say barley threshing is now in full blast in most districts and the crop in general is turning out well.

Feed, No. 1 good to choice spot	$1 02½@1 05
Feed, fair to good	95 @1 00
Chevalier, No. 1 to choice	1 15 @1 20
Chevalier, common to fair	1 05 @1 10

Oats.

Choice red oats are very scarce and are firmly held at the top quotations. The bulk of the stocks are light and are only of feed varieties. Heavy milling oats are also scarce. A few California white oats are coming in and are being held at $1.60 per cental. Black oats of a good quality are very scarce and there is a good deal of inquiry for such oats of a quality suitable for seed, but few lots are to be had. Samples of new crop black oats brought into this market are of rather poor quality, being rather light in color.

Black oats	$1 45 @——
Red, choice new	1 30 @1 45
Red, fair	1 22½@1 27½

Corn

Stocks are now of good size, owing to several large receipts during the current week. The holdings are mostly in the hands of the mills, however, and no movement of a jobbing character has as yet developed either in spot or futures. Advices from the corn belt of the Middle West are all very favorable to the growing crop.

Large White, good to choice	$1 40 @1 42½
Large Yellow	1 40 @1 42½
Small Yellow	1 50 @1 60

Rye.

The local market is a little easier, as there is only a small local demand and no shipping demand whatever. Receipts are light, being just sufficient to keep prices as at present quoted. The stocks on hand in this market are light, it being estimated that one vessel for export would clean up the visible supply. No export trading could be done, however, at present prices.

Good to choice	$1 45 @1 50

Buckwheat.

There is no trading of a jobbing character in the local market, as the supply on hand is very limited. A few sales of choice have been made to growers for seed at about $2.25. The quantity left on hand is barely sufficient to supply the mills.

Good to choice	$1 75 @2 25

Beans.

Reports from the bean growing districts are to the effect that the weather was very favorable during the current week for the growing crop, and barring unforeseen disasters a good crop should be secured. Bayos are now cleaned out of the local market, with the exception of a few small holdings of damaged stock. Blackeyes continue firm, though the general demand is lighter. Little trading is being done and little is expected before the new crop comes in. Quite a large proportion of the Lima bean crop has already been contracted for and a number of contracts have also been made on Blackeyes and Bayos, so that the price on these varieties will probably hold up firm, at least, for early shipment.

Small White, good to choice	$—— @3 60
Small White, damaged	1 50 @2 75
Large White	2 50 @2 85
Large White, damaged	1 50 @2 40
Pinks, damaged	1 50 @2 25
Bayos, good to choice	—— @——
Bayos, damaged	3 50 @4 00
Red Kidneys	3 50 @4 00
Reds	5 50 @6 00
Limas, good to choice	5 50 @5 65
Black-eye Beans	3 75 @4 00

Dried Peas.

Quotations on Eastern peas are now coming in and it looks as though the market would be ruled to some extent by them. California green peas are being held at $1.85 at the growing price, quotations for the same in this market being $2.10 for choice basis. Trading has been light, but owing to extremely light stocks and small arrivals prices are being maintained at quotations. The crop of Salinas peas promises to be large and the first shipments are expected to arrive soon in this market.

Green Peas, California	$1 85 @2 10
Niles	1 75 @2 00

Hops.

The market still remains in dull condition, due to hesitancy on the part of dealers in buying at present prices in the face of favorable reports for the new crop coming in from all sections. But little business has been done in spot goods—a few hundred bales having been taken at 15c within the past week—but most growers are not inclined to sell at this reduced price. Conditions are not encouraging, however, for a change for the better. Contracting can be done at 13c to 14c, but dealers feel not disposed to engage any even at these figures. Harvesting is general in Sacramento hop sections. Mendocino county will begin harvesting about September 1 and Sonoma county will not be general before September 10.

Good to choice 1904 crop, nominal	15 @ 18

Wool.

On spring wools the market is now practically cleaned up, all quotations now given being for fall wools. Early fall wools are moving slowly, having started at prices which dealers consider too high. Very little contracting is now being done, as most commission firms have withdrawn their buyers from the country, and will make no attempt to handle the clip until prices settle to a point somewhat nearer the ideas now prevailing in the Eastern market. Prices remain the same as the closing price for spring wools, with the exception of San Joaquin and Southern free and Nevada, which open at a somewhat lower figure.

FALL.

Humboldt and Mendocino	24 @27½
Northern, free	23 @26
Northern, defective	20 @22
Middle County, free	20 @25
Middle County, defective	17 @21
San Joaquin and Southern, free	12 @15
San Joaquin and Southern, defective	9 @13
Oregon, valley	25 @27½
Eastern Oregon	16 @22
Nevada	17 @21

Hay and Straw.

Shipments of hay during the past week amounted to 4900 tons, in comparison with 4500 tons during the week preceding. Large quantities of alfalfa and other lowland hay have come in and are still coming by water. Reports from the country show that some districts are now pretty well cleaned up, but that in other places shipping is as yet hardly well begun. Heavy shipments both by water and by rail may be expected throughout September, unless early rains damage the hay now in the fields. It is now generally believed that the Government contract, amounting to 2500 tons for Manila, will be let at Seattle. Alfalfa is weaker for poorer grades, but is still fairly firm on choice. Arrivals of straw are light and barley and oat hay shipments have ceased.

Wheat, good to choice	$ 9 50 @ 14 00
Wheat and Oat	8 00 @ 12 00
Tame Oat, fair to choice	7 50 @ 11 00
Wild Oat	5 00 @ 8 00
Barley	6 50 @ 9 00
Clover	6 00 @ 9 00
Alfalfa	6 00 @ 10 00
Stock hay	5 00 @ 6 50
Compressed	10 00 @ 13 00
Straw, ₱ bale	30 @ 50

Millstuffs.

The local market is still very firm, this being especially true of bran and middlings. Shorts is still in good demand, though there is now a sufficiently large visible supply to eliminate all danger of a scarcity. Cracked corn is also in good request, but the receipts of corn are large enough to prevent prices from ruling higher.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	21 00 @ 22 50
Middlings	28 00 @ 30 00
Shorts, Oregon	22 00 @ 24 00
Barley, Rolled, choice	22 00 @ 22 50
Cornmeal	30 00 @ 30 50
Cracked Corn	32 00 @ ——
Oilcake Meal	33 50 @ 35 00
Cocoanut cake or meal	21 00 @ 22 00

Seeds.

There has been very little trading in seeds during the current week and prices remain quotably unchanged, though the market in the main is easier. Flax is, however, an exception, being somewhat scarce and a little firmer in price. Mustard harvesting is now on in the Lompoc valley, though no mustard seed of any variety has yet made its appearance in the market.

Flax	$2 75 @ 3 00
Mustard, Yellow	2 85 @ 3 00
Mustard, Trieste	4 00 @ 4 25
	Per lb.
Canary	6½@ 7
Rape	2½@ 3
Hemp	3½@—
Timothy	5 @ 5½

Honey.

Honey is now a drug on the market and is moving off very slowly. Receipts are coming in freely and are of first-class quality, running very light in color this year. Prices on all varieties show a slight weakening, owing to an extremely sluggish demand, it having been thought that some of the large holdings might be moved at a slightly lower figure.

Extracted, Water White	4¾@ 5
Extracted, White	4¼@ 4½
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax.

Quite a lot of beeswax is now being received by local dealers and is meeting with a fair demand. Prices are slightly lower, owing to the unusual size of the receipts, the same having been much larger than anticipated and very light in color.

Good to choice, light ₱ lb	26 @27
Dark	25 @26

Live Stock and Meats.

The market is now somewhat firmer on first quality dressed beef than it has been for some time past, probably due to the approach of fall and cooler weather. Second and third quality are moving slowly, with but a small local demand. Prices are quotably unchanged.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4 @ 5¼
Beef, 2nd quality	3½@ 4½
Beef, 3rd quality	3 @ 3½
Mutton—ewes, 6@6½c; wethers	7 @—
Hogs, hard grain, 130 to 200 lbs	5¾@ 6
Hogs, large, hard, over 200 pounds	5½@ 5¾
Hogs, small, fat	5½@ 5¾
Veal, large, ₱ lb	5 @ 7
Veal, small, ₱ lb	8 @ 9
Lamb, spring, ₱ lb	8 @ 8½

Hides, Skins and Tallow.

It is generally considered that the hide market has reached the top and that the edge of the very high prices is off. Reports from Chicago indicate a slight weakening, though quotations are still at the previous high figures. The close of the Oriental war may have some effect on the demand for leather and indirectly on the demand for hides, but it is not thought that the effect will be very marked for some time to come. It is held that 13c is a good average price for heavy steers in the San Francisco market.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11¼@—	10¼@—
Heavy Cow Hides, over 50 lbs	11¼@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		2¼@3¼

Bags and Bagging.

The market continues firm with a slight stiffening in the price of bean bags, owing to the fact that bean growers are being warned by former experience and are getting in their orders early. Grain bags are scarce and high, being very hard to secure even at quotations.

Bean Bags	$ 5¾@—
Fruit Sacks, cotton	7 @7¾
Fruit Sacks, jute, as to quality	6 @7½
Grain Bags, Calcutta, 22x36, spot	7½@7¾
Wool Sacks, 4-lb	23 @—
Wool Sacks, 3¼ lb	30 @—

Poultry.

Receipts of all varieties and grades are fairly liberal and the market opens up a trifle sluggish. However, indications favor a more active market later in the week, but no decided variations in price are anticipated. Young stock and usually all fancy stock shows a considerable decline in price, while the off grades are ruling steady at quotations. Pigeons both young and old are wanted in the local market.

Turkeys, choice Young, ₱ lb	$ 21 @ 23
Turkeys, live gobblers, ₱ lb	19 @ 20
Turkeys, live hens ₱ lb	20 @ 21
Hens, California, ₱ dozen	4 00 @ 4 50
Hens, large	5 00 @ 6 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	5 00 @ 6 00
Fryers	3 50 @ 4 00
Broilers, large	2 50 @ 3 00
Broilers, small to medium	2 00 @ 2 50
Ducks, old, ₱ dozen	4 50 @ 5 00
Ducks, young, ₱ dozen	4 00 @ 5 50
Geese, ₱ pair	1 75 @ 2 00
Goslings, ₱ pair	2 00 @ 2 25
Pigeons, old, ₱ dozen	1 25 @ 1 50
Pigeons, young	1 25 @ 1 75

Butter.

The market is ruling firmer for strictly fancy goods. All intermediate grades are moving slowly as they are coming into direct competition with storage stock.

Creamery, extras, ₱ lb	23 @25
Creamery, firsts	23 @23
Creamery, seconds	20 @21
Dairy, select	20 @21
Dairy, firsts	19 @—
Dairy, seconds	18 @—
California storage	17 @18
Mixed Store	17 @18

Cheese.

Strictly fancy mild cheese is firm at advance noted. Other grades are moving slowly and the market is rather weak on the same.

California, fancy flat, new	11 @12
California, good to choice	10 @10½
California, fair to good	9½@10
California, "Young Americas"	11½@13½
Eastern, new	15½@18½

Eggs.

Fancy eggs are moving slowly, stocks having a tendency to accumulate under heavy receipts brought in by the recent advance in price and by the fact that the market is drawing largely from fancy Petaluma storage stock which is of good quality, for storagae, nd sells at considerably less money than the choice grades.

California, select, large, white and fresh	28 @30
California, select, irregular color & size	25 @27
California, good to choice store	18 @22
Eastern firsts	20 @22
Eastern seconds	17 @19

Potatoes.

The market is somewhat easier on Salinas, owing to the fact that the demand for export shipment was only for River

Burbanks, the consequence being that the Salinas have been neglected. A decline may now be looked for in Burbanks, as all orders for shipment on the Australian steamer, which leaves August 31, have been filled.

Cal. Early Rose, ₱ cental	50	@	60
River Burbanks, ₱ cental	50	@	70
Salinas Burbanks	85	@	1 10
Chile Garnet, ₱ cental	50	@	60
White Rose, ₱ cental	65	@	75

Vegetables.

A much improved condition of the vegetable market is the rule this week, both as to quality of receipts and condition of market. Favorable weather is largely responsible for the improvement. Summer squash is stiffer in price. The onion market is in good shape and on other kinds of vegetables a similar condition prevails, though prices remain quotably unchanged.

Beans, Lima, ₱ lb	7	@	—
Beans, String, ₱ lb	2	@	4
Beans, Wax, ₱ lb	3	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	50	@	1 00
Egg Plant, ₱ box	70	@	85
Garlic, ₱ lb	4	@	5
Onions, New Yellow Danvers, ₱ ctl	80	@	90
Peas, Green, ₱ lb	3	@	3½
Peppers, Bell, ₱ box	35	@	40
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	50	@	60
Tomatoes, ₱ box or crate	75	@	1 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The market is firmer, and may now be said to be in a fairly active state. All kinds of fresh fruits now in season are coming into the market in large quantities, and the good weather keeps the quality up to a high standard of excellence. A brisk demand is maintaining prices well at quotations given. Figs, grapes and peaches have advanced in price. Cantaloupes in pony crates and small boxes are out of the market. Plums are stiffer in price and so are watermelons.

Apples, choice to select, ₱ 50-lb bx	1 00	@	1 25
Apples, good to choice, ₱ 50-lb. box	60	@	85
Apples, fair to good, ₱ 40-lb box	40	@	50
Blackberries, ₱ chest	2 00	@	3 00
Cantaloupes, pony crate	—	@	—
Cantaloupes, ₱ box	25	@	50
Crabapples, ₱ small box	—	@	—
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	1 00	@	1 50
Grapes, Seedless, ₱ crate	1 00	@	1 15
Grapes, ₱ small box	—	@	90
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ large box	1 25	@	1 75
Peaches, ₱ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	—	@	1 25
Plums, large, ₱ crate	—	@	90
Plums, ordinary, ₱ box	30	@	50
Raspberries, ₱ chest	6 00	@	8 00
Strawberries, Longworth, ₱ chest	8 00	@	10 00
Strawberries, large var., ₱ chest	5 00	@	6 00
Strawberries, Santa Clara, ₱ chest	6 00	@	7 00
Watermelons, ₱ doz	1 50	@	2 50
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The dried fruit market is somewhat weaker than at last quotations, dried apricots selling at 7c to 7½c. Prunes are selling on a 3c basis to the growers. While there have been some sales as high as 3½c, it was made by short sellers among the small packers and it is very doubtful if this price can rule to the growers. The packers are operating at full capacity on prunes. Deliveries are falling short of the contracts in nearly every instance, as is usually the case in a short crop. Peaches are weaker in the local market, and apricots also are moving somewhat slowly, most orders having been already filled. The market is also much weaker on dried apples on account of the large number of dryers who are engaged in the drying business this year, the number being much larger than usual.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes	6	@	6½
Apricots, Royal, good to choice, ₱ lb	7	@	7½
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	5½	@	6 2½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	7½	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	8½
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2½@2¾c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

The market is in a state of inactivity pending the decision of the Growers' and Packers' Combine in regard to the price of futures. The spot market is well cleaned up and jobbers say that there will be little or no carry over to affect the coming price situation. That prices will be higher for the new crop than are now being asked for such of the old crop as is still on hand is generally conceded, as it is known that the crop will be somewhat short, though just the extent of the shortage, and just how far it will influence prices, is problematical, as the whole situation is practically in the hands of the combine, and their prices will not appear much before the middle of the month.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	——
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	——	@	1 30
Dehesas, 20-lb box	——	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4½		c

Citrus Fruits.

The only oranges now coming into this market are Valencias, receipts in these being light and prices ruling firm. The warm weather of the past few days has sent the price of lemons up to a considerably higher figure, choice grades easily bringing the maximum quotation of $5. Limes are somewhat weaker, but a continuation of the hot weather will bring an advance in price. The market generally is in a good healthy condition and the outlook for the coming crop is excellent, estimates of a large increase over last year's crop being general.

Oranges, Valencias, ₱ box	2 00	@	4 00
Lemons, California, select, ₱ box	3 00	@	5 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 50	@	2 00
Limes, ₱ box	4 50	@	5 50

Nuts.

New almonds of all descriptions are now arriving and the size of the arrivals would indicate that the crop is even a larger one than had been expected. The quality of the receipts is also very fine. Local dealers predict that the market will be very low on account of the large crop. Advices from the walnut growing sections state that during the current week the crop has improved quite materially. The following quotations given on almonds are prices being paid for new crop almonds in this market:

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½
Almonds, IXL, ₱ lb	—	@	11
Almonds, Ne Plus Ultra, ₱ lb	—	@	10½
Almonds, Nonpareil, ₱ lb	—	@	11½
Almonds, Languedoc, ₱ lb	—	@	8
Almonds, Golden State, ₱ lb	—	@	8
Hard Shell, ₱ lb	—	@	5½

Wine.

There is still very little movement in native wines, as there is a general tendency to wait for the result of the coming vintage. On the whole, the grape crop is not large and the quality, from the winemaker's standpoint, is poor. It is understood that the coming crop will not yield as many gallons to the ton as usual. The California Wine Association is paying $16 per ton for grapes in Sonoma and Napa counties and $12 per ton in other counties. Muscat grapes are quoted at $12 per ton for firsts and $11 per ton for seconds. Wine prices are firm. Dry wine, coopered, is quoted at 28½c f. o. b. common shipping points, though some houses are quoting 30c. Sweet wine is held at 37½c in San Francisco and 35c at the wineries.

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Pacific Coast Scenes.

The similarity of Pacific coast mountain scenery from California northward into the British possessions is strikingly illustrated by the picture which appear upon this page. These pictures all show British Columbia scenery and yet they remind one forcibly of what he has seen in the Sierra Nevada in this State during his summer outings.

An End-Dumping Wheelbarrow.

Written for the Pacific Rural Press by Matt. W. Alderson.

As a remedy for the difficulties in side-dumping the writer has used a wheelbarrow so arranged as to dump conveniently on the end instead of at the side. This contrivance, illustrated here-



End Dumping Wheelbarrow.

with in all its crudity of construction, is a wooden-framed wheelbarrow in which the construction has been changed so the bed of the barrow is raised till it is 20 inches above the floor. The bed is also turned, so the ends of the barrow are forward and back instead of to the sides. The wheel is set so as to be under the barrow, the front of the wheel being in line with the end of the tray—not much farther forward, as in most wheelbarrows. The legs are 22 inches apart at the bottom. The handles are short —36 inches in all, from hub of wheel, and 26 inches apart at the hand holds.

It will be understood that this barrow, when loaded, is top heavy and one needs to exercise care in loading and handling it. It is well in loading to lay large pieces across the front of the scoop, thus preventing fine stuff from falling off onto the track. One needs a clear track over which to run the barrow, as it dumps so easily that a piece of rock on the track the size of a hen's egg will overturn it. But it is a great convenience. One easily runs the dirt out from the face, piling it up along the track to a depth of 18 inches to 2 feet. The best way to unload the barrow is to give it a quick forward thrust instead of dumping.

THE VETERINARIAN.

Answers to Queries.

By E. J. Creely, D. V. S., Dean of San Francisco Veterinary College.

AN OPERATION NEEDED.

To the Editor:—Will Dr. E. J. Creely please tell me through your columns if there is anything I can do for my saddle pony? Several weeks ago she received a heavy blow, probably a kick in the forehead just between the eyes, a little to the left of the center, and it has left a dent nearly an inch deep and five inches long. It does not seem to affect her appetite, but when ridden or if the least excited the mostril on the same side as the dent bleeds. It does not bleed badly, but continues for some time. She also has a bad, hacking cough which seems to bother her in the mornings and evenings and sometimes causes her nose to bleed. Any advice which you can give me will be gratefully received.—A Worried Mistress, Santa Clara.

The bones of the head are fractured and must be immediately operated upon by the best veterinarian in your part of the country. I am surprised that blood poison or lockjaw has not already set in. The bone is broken in pieces and no doubt the surrounding tissue is already involved. I would recommend Dr. Spencer or Dr. Defoe of San Jose.

A Yuba City special to the Sacramento Bee, Aug. 22, says the peach season for the year 1905 is fast drawing to a close. Yesterday the local plant of the C. F. C. A. closed its doors and turned away several hundred employes. The cause for the shut down was scarcity of fruit. There was not enough to run both the Yuba City and Marysville plants, so the head management saw fit to close the Yuba City plant and finish the season at Marysville. The Sutter Preserving Co.'s plant will have work for several weeks. Besides quite a run yet on peaches they will can tomatoes, and expect to run at least four weeks on tomatoes, beans, etc.

California's New Inland Sea.

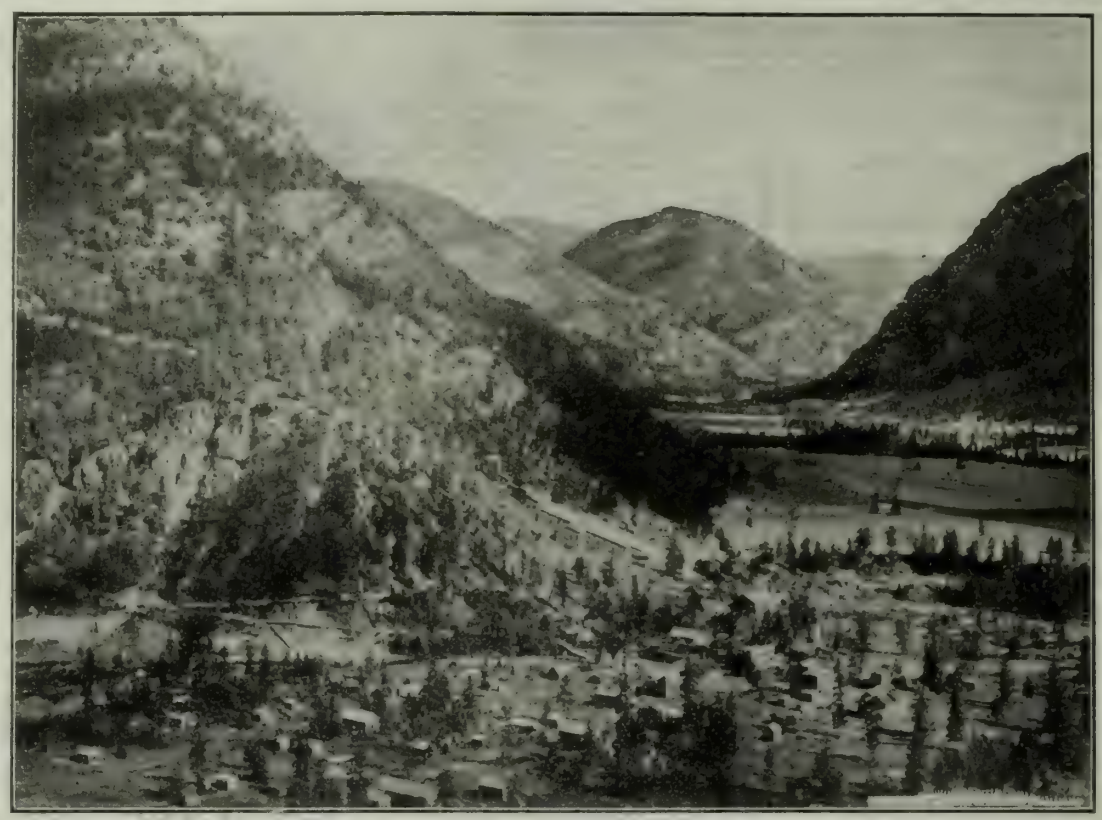
For several months past the Colorado river has been pouring a vast flood of fresh water into the depression in San Diego county, Cal., known as the Salton Basin. This basin or sink is below the level of the sea, being about 260 feet below datum at the lowest place — the salt marsh near Salton station. There are in the world only half a dozen places where the surface is below the level of the sea. These are the Salton Basin in San Diego county and Death Valley in Inyo county, Cal., the Valley of the Jordan in Palestine, where the noted Dead Sea is nearly 1300 feet below sea level; two small areas in the Sahara desert of Northern Africa, and the largest, by far, of all, and exceeding them in the aggregate area — the valley of the Caspian sea in Western Asia — which is 86 feet lower than the Black sea.

At one time, in recent geological age, the Salton Basin in California was connected directly with the Gulf of California. The Colorado river, flowing with a sinuous but generally southerly course, emptied into this broad, shallow sea. Its great volume of sediment, upon reaching deeper water, settled to the bottom, gradually filling up the channel, and spreading out over a large area. In time a spit was built at the west side of the stream, which gradually extended out into the Gulf of California, eventually forming a complete barrier and cutting the Salton Basin off from the Gulf. This required many years in its accomplishment.

In periods of low water the river fell below the level of the sand spit and in time of flood cut crevasses through it, newer additions being made to the natural embankment until it became a broad levee, completely shutting off the basin from both the river and the gulf, and only at times of unusually high water did the river breach its banks and overflow into the basin. This has occurred repeatedly in past years, though at long intervals, the last time being in 1891–92, when the river flowed through a cut in the bank made by high water, and the water reached the salt works at Salton; but, the river receding, the supply of fresh water was cut off and the newly formed lake rapidly disappeared by evaporation, and no great damage was done.

In the spring of 1905, however, an irrigation canal was cut for the purpose of irrigating lands about Imperial, a town which had grown up in the heart of this desert wilderness.

In this work a breach was made through the levee, but the mistake was made of not providing the necessary head gates. Soon after connection was made between the canal and the river, the summer flood of the river occurred, due to the melting of the snows in the Rocky mountains where the Colorado river takes its rise, and the unusually heavy rainfall increased the volume of the river until an irresistible flood poured into the basin. Many square miles of the basin are now under water, and if it is not checked, without doubt the basin will fill in time, to the level of the inflowing river, when a spit will again be built by nature across the crevasse and the stream continue on its way to the Gulf as before.



The Village of Hedley, B. C., Showing Adjacent Valley and Hillsides.



Scene on One of the Ridges Near Hedley, B. C.

Spanish Almond Trust.

Consul Birch of Malaga, Spain, reports that a syndicate which will probably control the almond market has been formed by the seven principal Malaga exporters. "Compania Almondrera," the corporate name of the "trust," is a limited liability company and will operate under a Spanish deed, just signed. The shares are 200 in number and are divided among the following mercantile houses: Bevan & Co., Garret & Co., Rein & Co., T. Casado S. en C., Federico Gross & Co., Cumming & Vandulken and Fermin Alarcon en Liq.

The syndicate will have to do only with the purchase of the almonds from the growing districts and will not intervene with respect to the ultimate sales to American and European buyers. Each local exporting house will retain its identity and business will be conducted along lines followed in past seasons. The purpose of the trust, its organizers frankly admit, is to reduce first-cost prices and to eradicate certain alleged abuses heretofore practiced by local speculators and brokers.

Roberto F. Bevan and Thomas K. Geary, composing the firm of Bevan & Co., are to be the salaried managers of the company. They will buy the almonds, either direct from the growers or through brokers, and store them in their warehouses. These will then be subject to the demands of the members of the syndicate, to whom the almonds will be sold at a price contingent upon the exigencies of the situation.

Prices of almonds, cost and freight, New York, for the season beginning next month will not be materially affected by the new arrangement, say the managers, though the selling price of the different houses is likely to be more uniform than in other years. The Spanish almonds of commerce are the Jordan and Valencia brands. The ordinary crop of the former is about 70,000 boxes, while the yearly yield of Valencias usually numbers more than double that figure. Malaga is the exporting center, and, as no competitors are in sight, it is likely that the Compania Almondrera will handle the entire business. The agreement is for five years and the capital listed at 1,000,000 pesetas ($140,000 U. S. gold). The only other officer besides the managers is the secretary, Fermin Alarcon.

Destroying Insects by Electricity.

The Electrical Magazine, according to German papers, describes a series of experiments for destroying insects injurious to the products of the soil, which experiments are said to have been successful. An engineer at Monaco was the first one to have his attention called to it, while he worked with an electric machine in the open air. He observed that metal rods, which were put into the ground and were then connected with a dynamo of 110 volts, made insects in the vicinity leave their hiding places in the ground. He argued that electricity might therefore be used on a large scale to kill these insects, which all came in great haste to the surface. It is probable that for the killing of various kinds a different voltage should be used. Further experiments must be made to this end.

An apparatus is mentioned, invented by a Russian, for killing injurious insects by electricity. A dynamo is so placed upon a hand car that no electricity is engendered while the car is standing still.

When in motion the current passes into the ground through the iron wheels of the car upon one side, and upon the other through the points of brushes of copper wire, which are fastened in the rear of the car so as to be a few inches above the ground.

The result is said to be that all insects in the vicinity of the copper brushes are killed as if by lightning.

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Nowlin, S. D., Dec. 2, 1904.
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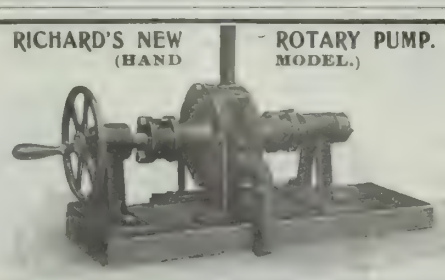
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BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Schlmeyer; L., Geo. Schlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail. 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham. 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec ; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. D. Magnon.

Parcels Post in London.

TO THE EDITOR:—Through the good offices of Lord Avebury, I was "personally conducted" over the London Sorting Office of the Postal Department. The office is situated at Mount Pleasant, near Farringdon Road, and was completed in 1900, though parcel sorting has been carried on there since 1887. It is needless to say that from the earlier date the business has increased by leaps and bounds.

The floor space is between 6 and 7 acres; the length of the sorting tables a mile and a half; the number of employes over 4000; the articles dealt with each week between 13,000,000 and 14,000,000 (13,000,000 letters, newspapers, and circulars, of which 6,000,000 are dealt with on the evening duty, between 4 P. M. and 8 P. M., and 600,000 parcels); the total weight of the mail matter handled in a week exceeds 1500 tons (long), and the number of mail vans calling over 10,000.

More than 100,000 registered letters and 7000 registered parcels are received weekly. In the same time 52,000 letter bags are dispatched to, and 54,000 received from, other offices; of this last number 9000 are for transmission to other offices. The number of parcel receptacles (chiefly huge hampers of wickerwork) dispatched is 27,000 per week, the number received from other offices is 24,000, including 2000 from places abroad. My mentor pointed out an immense stack of these basket receptacles under a shed, saying they were already being gathered for use next Christmas, when the stacks of full baskets would be larger than the present stack of empties, proving what an impetus parcels post gives to holiday trade.

Over 10,000 letters and newspapers either unpaid or insufficiently prepaid are dealt with every week. The surcharges received on these amount to over £50 sterling.

More than 1300 parcels received each week from abroad are assessed for customs duties, which foot up $230,000 annually.

One of the first things that caught my eye in the postoffice was a notice that evinced the care of the authorities for the health of the workers. To check the spread of the "white plague" (tuberculosis) no spitting is allowed in corridors or rooms.

Another announcement oft reiterated in very large capitals was "Parcels must not be thrown," and another "Handle parcels carefully."

Goods of the most miscellaneous description are sent by mail. I ate yesterday Devonshire "clotted," or "clouted," cream from Torquay by parcels post to this place. Those of your readers who never tasted the article may at least recall the line from the Song of the Holy Friar:

After supper of Heaven I dream,
And that is fat pullets and clouted cream.

So that, though like Lowell:

I'm not one of them that much expect
Millennium by express tomorrer.

I find I can here get heaven by parcels post; of course, I mean the friar's heaven — "fat pullets and clouted cream."

How soon shall we attain heaven so easily in America?

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Brighton, England, August 7.

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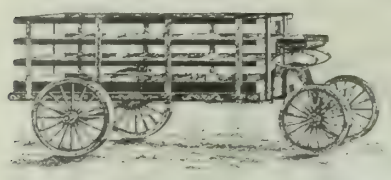
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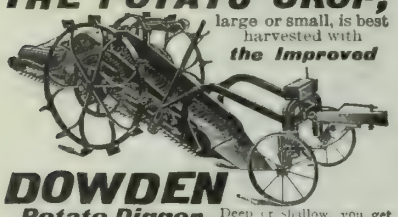


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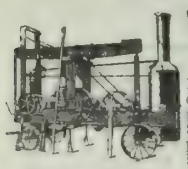
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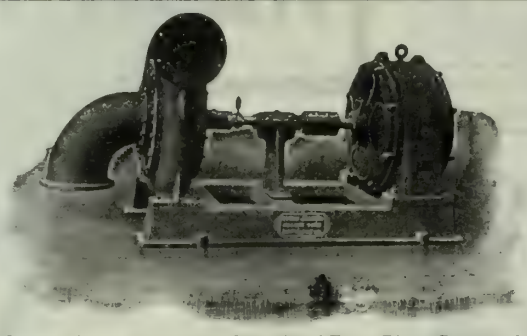
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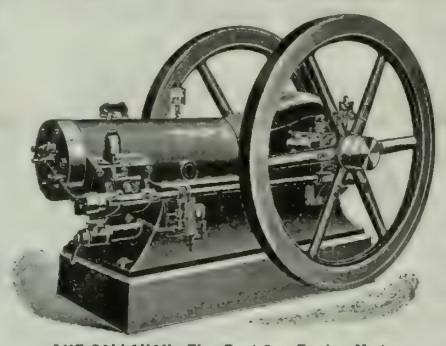
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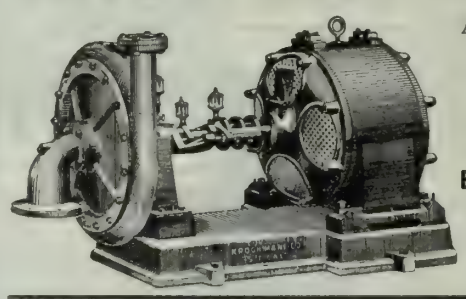
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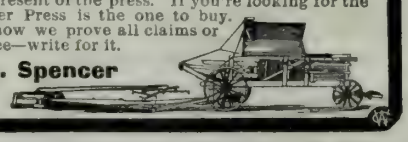
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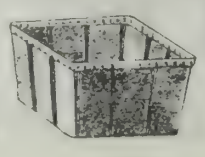
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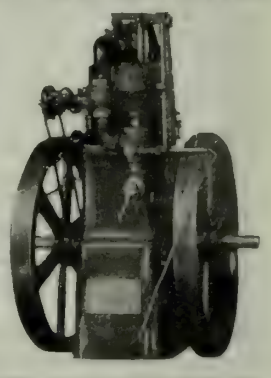
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Vol. LXX. No. 11. SAN FRANCISCO, SATURDAY, SEPTEMBER 9, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Restraining Mining Debris.

The restraint of mining debris set free by the washing down of hills from destroying agricultural lands below, and ruining the rivers into which it is carried, has been a question of great vexation on the east side of the Sacramento valley for a quarter of a century. The most deplorable destruction has been wrought. Can the old deposits be held back, and can farther pursuit of hydraulic mining be made innocent, are questions which extend in their influences from the foothills of the Sierra Nevada, along our greatest rivers, to the bar in the ocean beyond the Golden Gate. There is naturally a great variance of opinion as to whether the situation is remediable It must be admitted, however, even by those most disposed to take the extreme agricultural and navigational sides of the question, that the co-operative effort now being made by the State of California and the United States is the greatest and most promising that can be practically undertaken and whatever be the opinion of its efficiency, a knowledge of its features is important. We give on this page some impressive pictures which indicate what masses of material are disturbed by hydraulic mining and how great are the engineering undertakings to hold it in the new places to which the water has brought it. There are also shown the dams by which it is hoped to prevent future hydraulicking from sending its debris to the main rivers. Upon another page of this issue is an interesting description of the work now in progress to which the reader's attention is invited.



Bank of Hydraulic Mine Showing Great Depth of Excavation.



Barrier No. 1, Ready to Turn Yuba River Over the Dam.



Barrier No. 1 Completed; Yuba River Flowing Over It.



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SAN FRANCISCO, SEPTEMBER 9, 1905.

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The Week.

The State Fair is on at Sacramento this week and the directors rejoice in ample interest and patronage. The attractions are many and the combination with the Native Sons and Native Daughters proves a strong one. If we can get the younger race of Californians generally behind the State Fair, it is fair to expect a renewal of the old-time interest and enthusiasm which ruled when the now passing generation was itself young and courageous and venturesome. Like all other enterprises, the State Fair must re-form itself upon an up-to-date basis, and there is now so much life and business in our agriculture that there ought not to be difficulty in advancing this exponent of it. It is well, therefore, not alone for the present, but for the future, that this year's fair will make a good financial record and thus take the first step toward greater development and popularity in the future. The results of the competition in agricultural lines we shall have in a later issue.

Wheat on spot is steady, although offerings are large and values are expected to hold for a time. Futures are less confident and there seems reason for this until the features of coming supply are a little more definitely disclosed. Fine feed barley is strong and active with scant supplies. Futures are also quite steady. Black oats are scarce and sought for and other kinds are also in demand. Good rye is now in and selling well. Bayo beans are cleaned up and other kinds in request. Limas are, however, weaker. Bran is higher and middlings firm. Hay receipts are increased again and much more expected. Meats are going well at an advance, except hogs, which are weaker. Butter is higher for fancy creamery, while stored butter is weakened by the amounts coming out. Cheese is doing a little better. Eggs are in good call for fancy fresh and lower grades less active. Poultry supplies are reduced by holidays this week and prices are well maintained. Potatoes continue to improve, but onions are weaker. Valencia oranges are scarce and firm; pomelos are higher. Lemons also do well, though limes are easier. Tree fruits are a little off this week except apples and pears, and berries also have taken a higher range. Dried fruits have receded a little, but prunes are strong and the outlook for the new crop good as to price. Raisins are looking up and a high range of Association prices is expected. Almonds are waiting until a price is fixed and walnuts are expected to bring good prices. Honey is still unchanged, though supplies are accumulating. Hops are still in doubt, with a strong bear pressure on reports of the European crop, and wool is very quiet, because supplies now arriving are held above buyers' views.

Speaking of hops, it seems as though the movement toward an effective combination of growers was taking definite form. The Sacramento and Yolo growers are getting together, and it is quite likely that strong local units may be the best material to make a general association of when the time comes. The plan of this two-county combine is given in the Sacramento Union in this way:

It is not to be a stock company, and each producer is to handle his own product, but the association is to open a central office where buyers may contract for part or all of the output of the hop ranches represented in the organization, the prices to be regulated by the quality of the individual offerings. The main object is announced to be the placing of the hops of the region upon the market in such a way that buyers may not be able to "play one grower against another," and thus grind down the price below the valid valuations in the general market. The idea is to deal directly with consumers as far as practicable, to the exclusion of brokers, where that can be done, and in this way to get a fair price for hops and at the same time protect consumers from the efforts of those who would seek to corner the market.

It ought not to be hard to do that much, and that much may be very effective. It is the plan upon which the New York dairy boards of trade began, and others in Elgin and other points were modeled after them. There are things in the local hop trade which need just such an organization, and its protective features may be very valuable. It is usually easier to do this than to attempt to concentrate—and there is less risk in it. It assures the receipt of correct market value, and growers certainly ought to work together successfully that far.

The machinery for the improvement of the great central rivers, and of the adjacent lands, is getting into place. The last Legislature provided for the election of a Board of Drainage Commissioners, to be elected in the several districts, and choice has been made in several counties as follows. The commission will consist of nine members: Two from Sacramento county, one from San Joaquin, one from Solano, one from Yolo, one from Colusa, one from Sutter, one from Yuba and Placer, jointly, and one from the counties of Glenn and Butte. The Board shall have an office in Sacramento and shall elect a chairman, who shall have great power and receive a salary of $6000 a year. It shall be the duty of the Board to employ competent engineers, mark out a scheme for the reclamation and drainage for the million and more acres of swamp land along the Sacramento river, and have power to levee taxes upon the lands in the district for reclamation work, which will include a rectification of the river channel and the levees along the stream. We shall soon have the full membership of the Board and the beginnings of its work. It will have a great influence upon the development of the central part of the State.

Bartlett pears and lemons are the overland sellers this week. A straight carload of Bartlett pears, from Medford, Oregon, containing 332 boxes No. 1 Bartletts and 151 boxes of No. 2 Bartletts, sold for $2084, the average for all grades, including the No. 1 and No. 2, being $4.30 per box. A carload of lemons from Los Angeles county containing choice and standard lemons, all grades, averaged $6.50 per box, and total for the car $2489. This is a phenomenal sale, considering the fact that the lemons were only choice and standards. Evidently the fruit business is not dead yet.

A reader from far away in Florida takes the trouble to write us that the trouble in the Department of Agriculture to which we alluded in the Pacific Rural Press of August 5 is due to the fact that the Secretary of Agriculture is over 70 years of age. He says all employers of labor cut out employes when they are 35 years of age, and the Government ought not to be kept full of old heads easily worked by designing people. This discovery is worthy of its origin. It discounts the Baltimorean doctor who advises chloroforming at 40. Evidently Ponce de Leon left his footprints in Florida and our correspondent has fallen into one of them.

QUERIES AND REPLIES.

Moving Large Palms.

To the Editor:—Please give me the information in regard to moving palm trees. I have two large palms twenty-five years old—one is a Yucca, the other a fan palm, that I wish to move in my yard about 20 feet. Can it be done successfully?—Enquirer, Oakland.

Palm trees are easy to transplant even when they get considerable size, because of the numerous rope-like roots which they make. Palms much larger than yours have been moved considerable distances, as, for example, two palms which were moved from San Jose to Menlo Park a quarter of a century ago, and which have grown thriftily since that time, were perhaps fifty years old at the time of moving. The way to move large palms is to lay off a circle about 2 feet from the base of the trees and trench around outside of that line, removing plenty of earth so that a man can work handily without destroying the inner circle. Cut off cleanly all roots encountered and dig down to a depth of about 2 feet or farther if many roots seem to be running deeper than that. Then cut under the ball with sharp spades all around until you have reached pretty near to the center. The ball can then usually be tilted a little and cut under completely so as to sever all roots. Then there are two ways for handling this heavy mass of earth; one is to slide under pieces of plank the length of the ball and nail to them side pieces, making a sort of a box, and by sliding chains underneath and using a strong derrick with hoisting pulleys, the mass can be lifted out of the hole upon a truck and then transported any distance. Where large palms are to be moved only a short distance and the soil is easily handled, it is easier to dig a trench of the width and depth of the ball from the point where the tree stands to the point where it is to be newly established; then, after the ball is cut free, tilt it sufficient to push under a sort of sled made of plank, something like the old-fashioned stone boat. The ball is then tilted so as to throw the weight wholly onto the stone boat, horses are hitched and the palm is hauled along the bottom of the trench to the new place. This method avoids lifting and lowering the mass, both operations requiring considerable power and increasing the danger of cracking the ball. An old palm has so many rope-like roots that it usually holds the mass together. It is a good time of the year to undertake this, because evaporation is less and the rainy season coming on.

Alfalfa in Orchards.

To the Editor:—I notice on page 165 of the third edition of "California Fruits" that you mention the probable use that may be made of alfalfa as a cover crop for orchards. I should like very much to know if there has been any further development in the use of this crop in orchard management, and what the results have been. I have thought for some time that we might use this crop to good advantage, and have even advocated its use a little. I never noticed what you had to say about it until to-day.—Reader, Colorado.

Although we have intended to look into the use of alfalfa as a cover crop for orchards ever since the preparation of the third edition of "California Fruits," to which you allude, we have never accomplished it. For that reason we cannot state exactly what the present developments are. Two localities have announced success with that recourse to alfalfa, one in Kings county, around the town of Hanford, the other in Modoc county, near Alturas. These are both localities in which there is a great amount of water available for irrigation, and, of course, that is essential to the success of the method, because nothing but ample irrigation can satisfy the thirst of the alfalfa plant and prevent it from robbing the trees of moisture. There were recently a number of fruit growers around Phœnix, Ariz., who advocated the growing of alfalfa because its shade of the ground during the summer time reduced the soil temperature and prevented sunburn by reflected heat. Their method was not to feed the alfalfa, nor to take away any hay, but simply to cut the plant and allow it to desiccate in the hopes of turning its contents to the soil in that way. We are sorry that we have not definite statement of results of such practice up to the present time, and shall be glad to hear from any reader who has tried alfalfa among orchard trees and reached conclusions about its desirability.

Willow Sprouts—Watermelon Disease.

To the Editor:—I thank you for your suggestions in reference to killing willows and tomato and watermelon blight. You say if you cut willows and other trees at the height of their activity in immediate summer you can often kill them outright. Can you give me any idea or sign that I can go by so I may know when is just the right time to cut them down? I have already cut a portion down, one year about the 2nd of July, another year I cut about the 1st of August, but I missed it each year.

I am very much interested in tomatoes and watermelons. I send a small green fly with black head; there are many on my vines and I would like to know if they suck the juice or eat the foliage. I am inclined to think they have something to do with the vines turning brown. The vines don't act like they do with the melon wilt, where one-half of a vine will die, or perhaps a few runners, or may be the whole vine. I have had them die in a night. But these will turn brown and then a new growth will come on and bear lots of nice melons. Now the tomato vine when it is diseased dies and that is the last of it. This year I put out my watermelons and tomatoes on new land, and the blight on my tomatoes is greater than those I have put out on land where I have grown them for years. But my neighbor has a patch of tomatoes about 200 feet away that are badly blighted; it may be they have something to do with mine being blighted.

I send you a leaf or two of my melon vines so you can tell me if it is caused by the green fly or some other insect. I noticed a good number of striped bugs, the same as are on the squash and mushmelon vines; they have been working on the vines very much. Of course I may be too late to remedy it this year, but would like to know how to prevent it another year.—Grower, Monterey county.

In our answer in the issue of August 19 to your previous letter we did not know that you understood so fully the subjects about which you wrote. From your experience one would have to judge that willows are rather an exception to the rule about midsummer cutting, for certainly during the month of July is the time when the cutting would seem to be most effective. The time which is generally prescribed is just when the first growth for the season has been finished; that is, the new shoots stop in their extension and the buds begin to form in the axils of the leaves; that is the time at which cutting is believed to be most dangerous to a deciduous tree, but there are some trees so hardy that they seem to be able to stand this setback without fatal results. We are sorry we cannot tell you more about it.

As to the behavior of tomatoes and watermelons, it does not seem as though the insect, which you mention but which we cannot find in the samples sent, could cause the injury, but it must be rather due to a fungus, which, however, may be distributed by insects. We should experiment with the Bordeaux mixture, making the application just before the time when the disease generally appears, or as soon as you see first signs of it. This treatment ought to check its progress.

Sweet Clover.

To the Editor:—Under another wrapper I send you to-day a plant the name of which I would like to know. Please also state, if you know, where in this State it grows. When growing it can not be told from alfalfa by its looks, though it grows more luxuriantly. It has a peculiar odor and is very bitter to the taste. Is it worthless and can it be eradicated? —Farmer, Crows Landing.

The plant is sometimes called sweet clover, sometimes sour clover. It is known to seedsmen as Bokhara clover and its botanical name is Melilotus alba. It is a pestiferous weed in alfalfa fields and, unfortunately, it is hard to find alfalfa seed that does not also contain this seed. It is not acceptable to stock on account of its bitter taste and rank odor, the latter being communicative to the hay in which the plant is found, also to grain when it grows in wheat fields. It is of some account for bee pasturage and is also commended as a winter-growing leguminous plant for plowing under. It can be eradicated by pulling, or by continuous cutting, which prevents spreading of the seed.

Onion Growing.

To the Editor:—Please give me your opinion or advice as to the best time to plant onion seed, and which variety you think most profitable and successful in this part of the State. Do you think now is a good time to plant seed for transplanting in November or December? What kind of soil do onions require?—Beginner, Lake county.

The details of onion growing are fully stated in our book on "California Vegetables." It is certainly possible if your land is moist enough to get a start from seed for transplanting in November or December, but that practice does not generally prevail. Although transplanting onions is undoubtedly successful in California, the plant grows so well from the seed that little transplanting is done. Onions do best upon a medium loam, one which is easily cultivated and not disposed to crack or bake very compact. The variety which is most generally grown is the Yellow Danvers, except that some Red Wethersfield are grown because they mature early and sell well until the yellow onions appear. Although the onion is quite hardy, almost everywhere during the California winter, there are places which are almost too frosty and some places where the moisture is so continuous that it is almost impossible to keep the weeds down. Under these conditions the spring sowing is more satisfactory.

Commercial Flower Growing.

To the Editor:—With a view of embarking in the business of floriculture I should like to have you send me at the present time any treatise that may be available for the purpose required.—Amateur, Oakland.

We have no publications bearing on the business of floriculture in California. There are many Eastern books, but they do not apply here, nor has it ever seemed that a California book on the subject would pay the cost of publication. The business of floriculture must, therefore, be learned by experience and by personal inquiry. One way to begin would be to ascertain from the florists in San Francisco what flowers they would buy which it would be possible for you to produce. Sometimes, for instance, the Trumpet Narcissus is quite profitable, and some women in the lower part of Alameda county have made quite a little income from bulbs of this sort, but the demand is usually limited, and it is unwise to undertake investment in planting without knowing where your market is to be and how much it will take at a profit. The same thing would be true of violets and other flowers. Our observation is that scores of people undertake work in this line and abandon it soon afterwards because of the difficulty of making it pay, and most people have an exalted idea of the returns from efforts of this kind. We generally tell our correspondents who write in this line that if they can learn to produce poultry and eggs they stand a far better chance of profit, because the demand for these articles is so large and constant.

Root Rot of Fruit Trees.

To the Editor:—Will you kindly inform me what is the matter with a fruit tree whose roots turn black and appear to be slimy with a white mold, and how to remedy the same?—Gardener, Marin county.

Your fruit trees are affected with root rot, and this condition may come from several causes. It is liable to occur when the water stands too long in the soil during the rainy season, and in that case the remedy is underdrainage to prevent standing water. Rotten root also occurs when fruit trees are planted on land from which wild trees and shrubs have been removed. In this case the agency is fungus, which is communicated from decaying roots to the living ones. The recourse in this case is to pull out the tree, dig a large hole, clearing out all the rotten roots, possibly filling the hole with new soil and replanting at the proper season. There is another source of rotten root, and that is the growth of the mushroom fungus, which sometimes attacks quite old trees and destroys them; in such a case the large hole, clearing out all decay and planting in fresh soil, is the proper recourse. Sometimes a certain amount of lime may be successfully used in the old holes containing the root fungus; but one has to be careful not to make too generous application, because too much lime will kill even a young thrifty plant.

Supposed Thrips' Injury on Peaches.

To the Editor:—Under separate cover I am sending you some Lovell peaches which are blemished, as you see. Is this caused by fungus? If so, is it liable to spread and become generally prevalent? The trees were well sprayed in the spring for curl leaf and have had the best of care and cultivation during the entire season. They are very thrifty at the present time.—Grower, San Jose.

The fruit has depressed spots or pits thickly scattered over the surface. They have the general appearance of fungous spots, but if closely examined no fungus appears; but the pit is seen to be caused by stopping growth at these points, while the surrounding healthy tissue rose as the fruit naturally increased in size. The arrest of growth at the spot is due to mechanical injury while the fruit was small, and is believed to be abrasion of the skin by thrips. A full account of the work of this insect, so far as known, was published in the Pacific Rural Press of Aug. 12th, page 100.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 4, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Clear weather continued during the week and the temperature was nearly normal. Grape picking and shipping progressed rapidly and the weather was favorable for fruit drying. The grape crop in Sacramento county is much below the average, but the grapes are of good quality. White Adriatic figs are being gathered and the quality of the fruit is good. Oranges and olives at Palermo are developing satisfactorily and give promise of good crops. Salway peaches are being harvested. The almond crop will be large. Hop picking still continues. Beans are filling well and the outlook is good for a large crop. Hay baling is nearly completed, and the grain and hay crops are mostly secured.

Coast and Bay Sections.

Clear and warm weather continued in the interior and foggy nights and mornings in the coast districts. The fogs have caused slight mildew on grapes in Sonoma county, and some injury to hops. Grape picking is progressing rapidly; the grapes are of good quality, but the yield will not be as large as expected and in some sections it will be only about two-thirds of the average. The prune crop will be lighter than expected, but the fruit is of superior quality. There is a large crop of cling peaches in San Benito county. The prospect is good for a heavy crop of apples in Humboldt and Santa Cruz counties. Cloverdale oranges are of good size and a large crop is probable. Hop picking is in progress; at Pleasanton the crop is reported light, but in Sonoma county there will be a large yield. The beet crop in Livermore valley is below average. Bean canning is in progress in Lake county. There will be a heavy crop of beans in the vicinity of San Luis Obispo.

San Joaquin Valley.

Clear, warm weather prevailed during the past week. These conditions were favorable for the maturing and harvesting of all crops. The peach crop is mostly disposed of and averaged from fair to good. Almond harvest is progressing and the quantity and quality are both good. Prune drying is progressing; the crop is light but the quality is good. Olives have set well and promise a good crop. The grape harvest is general and satisfactory progress is being made. Wineries are running, and are working mostly on Zinfandels. Raisin grapes are being picked; the crop is of excellent quality, but in some sections it is reported as light. Shipments of green and dried fruit continue. Oranges are making good growth and promise a large crop. Feed is plentiful and stock are healthy and in good condition.

Southern California.

Abnormally high temperature prevailed at the beginning of the week, the maximum reaching 100° on the 29th in Los Angeles and portions of San Diego county. Warm and clear weather continued through the week. The heat caused some damage to beans and probably injured walnuts slightly, but was beneficial to orchards in the killing of black scale. Brush fires caused considerable damage in the vicinity of Santa Monica. Early grapes are being harvested and the crop is not up to average, though of good quality. Raisin grapes are ripening. Oranges and lemons are in excellent condition and an unusually heavy crop is probable. The grain and hay crops are nearly all harvested. Bean harvesting has commenced in the Santa Maria district; there will be a fair crop. Sugar beets are yielding an unusually large crop.

Eureka Summary.—Continued cloudy and foggy weather along the coast. Interior pastures are dry and feed is getting short. Harvesting is progressing rapidly. Potato digging will commence soon, but the crop will be very light.

Los Angeles Summary.—Extremely hot weather last week damaged beans, corn and garden truck in some places, but extent of injury not yet known. Warm weather favored citrus growth.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Sept. 6, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	.02	.75	48	64	50
Red Bluff	.00	.00	.00	.25	100	54
Sacramento	.00	T	.07	.11	94	52
San Francisco	.00	T	.08	.13	70	50
Fresno	.00	.00	.00	.09	102	54
Independence	.00	T	.07	.17	96	54
San Luis Obispo	.00	.03	.06	17	86	46
Los Angeles	.00	.00	.17	.09	96	54
San Diego	.00	.16	T	.10	88	64
Yuma	.00	.02	.81	.55	108	62

THE VINEYARD.

The Best Varieties of Wine Grapes for California.

By Prof. F. T. Bioletti of the University of California at the St. Helena Meeting of the California Viticultural Club.

The greatest advantage that California possesses as a wine-producing region over the rest of the United States is the fact that the so-called European grape, Vitis vinifera, grows here easily and luxuriantly. This gives us an advantage in cheapness of production. Vinifera varieties yield larger crops than the varieties of any other species. It gives us also a still greater advantage in quality. In spite of the great improvement which has been made in the wines manufactured from varieties derived from the wild American vines, it has not yet been found possible, and probably never will be, to give them the finer qualities of flavor and bouquet which seem the exclusive possession of vinifera varieties.

In order to derive the full benefit of these advantages, it is essential that we make a suitable choice of the varieties to plant. There are vinifera varieties that will not yield half the crop of Concord, and there are others which will make a wine farther removed from Chateau Lafite than the wine of Norton's Virginia.

The importance of the question, "What are the best varieties of vinifera to plant?" is, therefore, evident, and the Viticultural Club could do no more important work than to contribute to the solution of the problem. The problem is intricate and difficult and not to be solved off-hand. It requires years of experience to tell what are the best varieties for any locality, and the solution for one locality may be different from that for a neighboring one. It is usually impossible to say what variety or varieties would be best for any particular vineyard, and even to give a list of those which would in all probability be good requires a great deal of judgment, founded on long experience. The members of this club undoubtedly possess a large amount of information derived from experience and observation, which, if brought together, would be of great use to the industry at large.

I would like, therefore, now to state what seem to me the conditions of the problem in order to provoke discussion, and finally to obtain results worthy of publication, based on the consensus of opinion of practical grape growers, as to which are the most likely vinifera varieties to give good results in our chief grape-growing regions.

It is interesting and generally useful in dealing with a subject like this, which has engaged the attention of many men for a long time, to consider it historically.

Historical.—In the earliest days of grape growing in California there was but one wine grape—the Mission. All wines, dry and sweet, red and white, were made from this variety. This satisfied the simple tastes of the padres and the uncultivated palates of the pioneers. As the country settled and the population increased, a demand for better wines, conforming more to the European types, arose and efforts were made to introduce European varieties of grapes.

These introductions occurred thirty or more years ago and have continued at intervals ever since. The first importation of importance was that of Harasthy of Sonoma, who gave us the famous Zinfandel. Following him in the late '70s and early '80s numerous important importations were made from France and Germany, the chief being those of Crabbs of Napa, Drummond of Sonoma and Charles Wetmore of Livermore. Through the efforts of these pioneers about 600 or more varieties were introduced, of which 300 or 400 were wine grapes. These wine grapes included the chief varieties of the Rhine, Burgundy, Rhone Valley, South of France, Pyrenees, Medoc and Charentes, in fact all the principal wine grapes of France and Germany and a certain number of those of Austria-Hungary and Spain.

Later, considerable importations were made by various nurserymen and growers and by the University of California from Spain, Italy and elsewhere. Varieties by twos and threes were brought in from all parts of Europe and even from Western Asia by immigrants who wanted to see the varieties they were used to growing around them in the new country.

In all probability not far from 1000 varieties of Vitis vinifera have been introduced into California, of which number perhaps two-thirds are wine grapes. It is no small task from this vast number to pick out those which are best or worth keeping. Undoubtedly a large number have been eliminated and have disappeared from cultivation owing to defects which have shown up in practice. We can moreover be guided to some extent by the experience of other countries, and varieties which have been practically abandoned in all other countries need receive little attention from us. Our investigation may be profitably confined to not many more than a hundred varieties which have shown good qualities in some part or other of California.

Quantity and Quality.—During the first period of importing the price of grapes was high, and the importers and experimenters gave little attention to anything but the quality of their varieties. The Cabernets of Medoc and the Pinots of Burgundy were given the first place, because they produced the finest and most high-priced wines of Europe. Large quantities of these and similar varieties were planted and led to great disappointments. Though most of these varieties gave wine of undoubtedly higher quality than the Mission, the growers soon found the extra price received for the Cabernet grapes, which was seldom more than 25%, did not pay for the deficiency of the crop, which was often from 50% to 75%.

This resulted in the almost complete abandonment of all regard for the quality of wine which a grape produced. The only question asked was which variety gave the largest crop. This was perfectly natural from the point of view of the individual grower, but it is open to question whether it was good policy from the point of view of the industry at large. At present a very large proportion of our vineyards are planted with varieties which are defective in some respect. They lack color or acid or flavor, and while with appropriate methods of wine-making they will undoubtedly produce wines superior to those of any varieties derived either wholly or in part from American species, they are unsuited to produce wines that can compete with the finer qualities of European wines imported into the United States. It is in this direction that competition is the hardest for us to meet, but at the same time in which there is the greatest prospect of a large, permanent and profitable trade, for it has been abundantly proved that with the right grapes and the right methods California can produce wines that equal those of any part of the world.

We can hold the trade of the few millions of regular wine consumers of Latin race by keeping the price low enough. But even in this case quality is not to be neglected entirely. An Italian laborer will not pay 50 cents a gallon for fine Cabernet if he can get drinkable Concord for 25 cents. But he willingly pays a few cents a gallon more for a good wine than for a poor one, and any improvement that we can make in the quality of our common wines without greatly increasing the cost of production will make it easier for us to get and keep this market.

It is, however, in supplying the many millions who drink, or may be induced to drink, fine wines, either regularly or occasionally, that quality is of the first importance. A very considerable number of the 80,000,000 inhabitants of the United States could be trained to drink a certain amount of California wine if they could always depend on its being good. The first essential in producing a good wine is to have good raw material to work on. We cannot make a table wine from Mission or Feher Zsagos that will satisfy a man who has tasted good Medoc or Chablis.

To supply the market that simply demands a cheap wine of reasonable quality we are growing grapes which are fairly suitable, though there is still room for improvement even here. Our Carignan, Zinfandel and Mataro are in many localities as suitable varieties as we could find for this purpose. In the interior valleys, especially the San Joaquin, they lack color and character and can be much improved on by varieties which will give equal crops.

For the market which demands a wine of extra quality and is willing to pay an extra price the proper choice of varieties is of even greater importance and requires the greatest care. While there are localities where Carignan and Zinfandel will give fine wines, they are not numerous, and even in such localities other varieties will give better results in most cases.

Selection of Cuttings.—In this connection there is a most important question regarding quality and quantity which has been almost entirely neglected in California, but which I should like to see taken up and investigated by the Club. This is the question of the selection of cuttings. The bearing of a vineyard depends not only on the variety of grape planted, but on the climate, soil, methods of pruning and cultivation and on the selection which is exercised in taking the cuttings to start the vineyard. All cuttings incline to vary in many respects, but especially in this matter of bearing. The variation in this direction is very slight in the case of some heavy bearing varieties such as Aramon and Burger, but even here it is not negligible. With other varieties, such as Muscat and Malbec, it is very great and may make a difference of 100% or more in the amount of the crop.

In nearly all the vineyards of Europe care is taken in the selection of the cuttings to be used for propagation. This care is usually confined to marking the vines bearing a large crop during the vintage and taking cuttings only from these marked vines, for propagation. In South Africa only those cuttings are used which are called "bearers," that is, those made from canes which grow from two-year-old wood. All suckers, laterals and water sprouts are rejected. These measures, almost completely neglected in California, are useful in maintaining the bearing qualities of a variety. But it is possible to do better than this. By marking the vines continuously for a series of years and then only using cuttings from those vines which produce good crops every year, it is possible not only to maintain the fertility of a variety but to increase it greatly. The Cabernet Sauvignon, which gives normally under good conditions only from three to four tons per acre, is said to have been improved in this way in certain Australian vineyards until it has been made to yield as much as nine tons per acre. The same thing has been done in France with Malbec and in California with Merlot and Tannat, all varieties which have a reputation for giving poor crops.

The moral of this is that we may improve the quality of our wines very much while sacrificing little or nothing in quantity, if we choose grapes which we know will produce good wine and then select the cuttings with proper care, to ensure our having only heavy bearing vines. Any vine, therefore, which produces grapes of the quality we want is worth experimenting with, in the attempt to bring its bearing qualities up to a practical standard.

Varieties Best at the Present Time. — In the meantime it is well to know what varieties have given good results in at least some part of California, without waiting for this improvement of promising varieties by selection. I will give, therefore, a provisional list of the varieties which at present seem the most suited for planting in California. This list is necessarily incomplete and defective, but is the result of personal observation in most parts of the State, and is given in order to excite criticism, discussion and the exchange of views.

In order to have some basis for comparison I have taken the Zinfandel as the most widely known and distributed of our varieties as representing the California standard for both quality and quantity. The list of grapes for dry red wine contains only the names of varieties which have given results superior to this standard in some parts of the State.

For dry white wines there is no variety sufficiently preponderant in our vineyards to serve as a standard.

For wines of Port type the Zinfandel can also be taken as a standard, as a great part of our sweet red wines is made from this grape. There is, moreover, no grape which we grow which will give as good results in all the necessary characteristics of crop, color and quality for this purpose as the Zinfandel. By a combination of two or three varieties, however, we can doubtless get very much better results in all these respects.

For sweet white wines of sherry or Madeira type we have an abundance of excellent varieties, most of which are equal or superior in quality and bearing in the sherry districts to the Mission, which may be taken as the standard for this purpose.

In making a list of this kind it would be very desirable to state what conditions of soil and climate are most suited to each variety, for a variety which will do well on a northern slope of the Santa Cruz mountains may fail completely in the alkali soils of Tulare. It is in this particular of the adaptation of varieties to the varied conditions of our widely differing grape growing sections that the experience of the members of the club will be most valuable. In this preliminary list only one distinction has been made, viz., that between the coast region of which Napa and Sonoma may be taken as typical, and the great valley of which Fresno may be taken as a good example. The conditions in the coast region are very varied and the list of varieties of that region is correspondingly long. The conditions of the great valley are sufficiently uniform to make it safe to conclude that a variety which will do well in one part is likely to do well in another.

VARIETIES RECOMMENDED FOR DRY RED WINE.

Coast—	San Joaquin Valley—
Serine.*	Valdepenas.*
Carignan.*	Lagrein.*
Alicante Bouschet.	St. Macaire.
Mondeuse.	Alicante Bouschet.
Tannat.	
Merlot.	
Verdot.	
Malbec.	
Aramon.	
Barbera.	

VARIETIES RECOMMENDED FOR DRY WHITE WINE.

Coast—	San Joaquin Valley—
Palomino.*	Burger.*
Semillon.*	Verdal.
Sauvignon vert.	Aramon.
Sauvignon blanc.	Peverella.
Burger.	Kleinberger.
Johannisberger.	
Clairette blanche.	

VARIETIES RECOMMENDED FOR SWEET WINE.

Red—	White—
Mission (lacks color).	Beba.*
Monica (lacks color).	Palomino.*
Grenache (lacks color).	Mission.
Mourastel (lacks color).	Grenache.
Trousseau (lacks color).	Furmint.
Alicante Bouschet (for color).	Mantuo.
	Peruno.
Beclan (for color).	Mourisco branco.
Tinta Madeira (for color).	

*Most highly commended.

It would take too long to go into detail as to the experience with these varieties and the special adaptations of each, but I have designated four red grapes, Serine and Carignan for the coast region and Valdepenas and Lagrein for the valley region, which can be highly recommended with little hesita-

tion. The four white grapes indicated, Palomino and Semillon for the coast region, and Burger, Beba and Palomino for the San Joaquin, are also worthy of unqualified recommendation.

In closing, allow me to express the hope that the members of the Viticultural Club will communicate their individual experience with any or all of the varieties of grapes in this list in order to improve it by additions and eliminations until we get a list that may be taken as a standard for future plantings.

THE POULTRY YARD.

Turkey Growing.

TO THE EDITOR:—In answer to your recent request for experience with turkeys, I offer the following as my conclusions: Unless one has an alfalfa or clover range, large or small, they should not attempt to raise a great number of turkeys. The first investment should be a woven wire fence about the entire yards and range. The fence should be about 4 feet in height, placed close to the ground, and if the range is fairly large, say several acres, turkeys show no inclination to fly over. The wire is not very costly when purchased in large quantities.

The second investment is coops. Mine are 6x3 feet, 2½ feet high, with 1-inch wire mesh about the sides and 2-inch mesh over the top. An upright opening at one end allows the turkeys to go in and out, and this opening may be closed by a shake, or in rainy weather, a small enclosed "lean-to" coop may be placed against it, openings together.

HATCHING.—Turkey eggs hatch well in an incubator, but it is almost impossible to raise the turkeys to maturity. It is quite difficult to regulate the heat properly for brooding them, and when once stunted they usually fail to mature well. Chicken hens hatch them very well, but should not be allowed to care for the poults, as they are too nervous and cover too much territory in a day, thus tiring the little fellows.

A turkey hen will lay from twelve to twenty eggs the first laying and will then wish to set. She will cover fifteen eggs very well, and they will hatch in four weeks. Some people remove the poults as fast as they hatch. That is probably a good plan. My practice has been not to disturb the hen until the hatch is completed, and I think it will be found that the empty shells help to keep the poults from being crushed.

When the hatch is completed, I dust the turkey hens thoroughly with buhach (this should also be done three times while she is setting) and place her with the poults in a coop which has been previously carried out on the alfalfa. The next day, and each day or so thereafter, I drag the coop onto a fresh patch of alfalfa. That is all the trouble there is in cleaning and changing the coops. The turkeys should not be allowed out of the coops for four days. If the weather is damp, some sacks or a canvas should be thrown over the wire coop and the lean-to coop used, but care should be taken not to keep them too warm, as they are then very liable to catch cold. They should be dusted once a week for three or four weeks with the insect powder. This will keep them free from vermin.

FEEDING.—Don't overfeed! Right here I wish to say that the "half-starved" turkey will grow to be the largest and fatten the best for the Thanksgiving trade. The first feed should be given them twenty-four hours after hatching, and should consist of dry curd, a little black pepper and finely crushed egg shell, mixed. Feed twice a day, very little at a time. They should have plenty of grit and fresh water. After the first feed of curd, my turkeys get nothing but bran and sweet milk, mixed to a dry crumb (not sloppy), with a little black pepper added about once a week, and an occasional feed of curd. On my mixing table I keep a two-quart jar full of lime water, made from about one pint of unslacked lime, balance water. I pour about a pint or two of this lime water into a bucket of water and refill the jar with fresh water. I give the turkeys this lime water two or three times a week.

When feeding the little turkeys, if they fail to "squeal" and devour the food greedily, miss feeding them one meal. They should always be hungry and free from vermin, and there will be no sickness to contend with. When two months old I feed but once a day, in the evening.

The hen will try to hide out with her turkeys the first few nights, but after that they will go to their own coops at night, and they should be shut in to keep them out of the early morning dew. They should be taught gradually to eat rolled barley, and their food should never be changed suddenly. I have never found it necessary to feed them chopped onion, hard boiled egg, bread crumbs, etc., and they should never be given red pepper nor corn in any form until they are about grown. When fed the bran and sweet milk they will be as plump as partridges when ten days old, as the milk is everything to them and the lime assists in making feathers. Without the lime they will droop and often die when getting their third feathers. Should they refuse to eat at this time they must be caught and fed some grit (crushed crockery is best), and wheat or barley, with lime water to drink. A wagon load of gravel costs but little, and placed in one pile where they may have free access to it will furnish grit for 250 turkeys for a season. They should never be fed soured or fermented food.

When the turkeys are well feathered and about as large as a small hen they should have a final dusting with insect powder, and driven with their mother to roost. They will range in the alfalfa in the early morning, coming in about 9 o'clock for grit, water and a rest in the shade. They should be fed a little rolled barley regularly at night, and a few weeks before Thanksgiving be taught to eat whole corn, also beans and pumpkin cooked together. This is the best of fattening food.

I am aware that my method is somewhat at variance with the usual advice, but will say I have lost no turkeys from sickness this year, and my turkeys are larger for their age than any I have seen so far this season. By following a plan similar to the above one person can attend to about 500 turkeys.

Fullerton, Cal. MRS N. FRANK MORSE.

ARBORICULTURE.

Shade Trees in Southern California.

Supplementary to the interesting essay on shade trees by Dr. W. L. Jepson of the University of California, which appeared in our last issue, is an outline of an address by Mr. Ernest Braunton, secretary of the Southern California Floricultural Society, at a recent meeting of the Progressive League of South Pasadena, as reported by the Star. Mr. Braunton spoke strongly in favor of ornamenting streets and highways, and the alignment of these thoroughfares with appropriate shade trees upon a general plan.

In addition to the ornamental purposes, the utility of the trees was pointed out. The speaker alluded to the æsthetic effects and also mentioned the fact that the trees give off moisture, moderating the intense summer heat. Mr. Braunton urged the neces sity of uniformity and system. In reference to this important matter he said:

Most communities are planted with several sorts of trees to each block, of every conceivable size, color, form and degree of desirability. Such planting looks as irrational as an orchard of all sorts of fruit trees hopelessly mixed. Oranges, peaches, walnuts, persimmons, olives and pomegranates—no order, looking much as though the different seeds had been scattered by hand, except they are planted in rows. Prof. Waugh, in his work of landscape gardening, says such street planting reminds him of nine monstrously different buttons in a row down the front of a Prince Albert coat.

William S. Lyon, in his "Gardening in California," says: "There is one feature in the planting of street trees that calls for special mention. This is the rep rehensible practice of planting a jumble of sorts upon the same block. Not only is the effect as a whole bad, but the individual beauty of each is lost in the kaleidoscopic shifting of form and color, that only serves to confuse and bewilder the passerby."

Little can be done toward uniform planting without zealous and well directed co-operation on the part of all interested. There must be unity and intelligence of plan and the work should be carried on by farmers' clubs and improvement associations, those necessary organizations which do not presume to tell the community how it should spend its money, but only how it may get, with efficiency, the greatest amount of sightliness for its money. It is of the highest importance that a plan be outlined on which people of diverse tastes and interests can either agree or effect a compromise. It will not be impossible to find a tree upon which all will agree, for the vast majority of people desire above all things that their neighborhood should be attractive, and will yield somewhat in their opinion in order to obtain desirable results. We must learn to sacrifice some things in order to get others of different tastes to co-operate with us. It is best, perhaps, after a thorough discussion of the merits of the different trees, to put the selection of one or each street to a vote and let the majority rule, not forgetting that this is a matter which concerns the general public more than the individual.

PREPARATION.—One of the greatest mistakes made is the lack of preparation. All holes for trees, no matter in what soil or what the size of the tree, should be dug from 3 to 4 feet deep and of the same diameter. Fill this hole with the best soil to be had, putting the very best at the bottom, below the roots. The trees, finding better food below than above, will develop a deep root system, and you will not then find so many dying trees nor so many heaved and broken sidewalks.

In choosing your stock get free-rooted and vigorous trees, not stunted ones. Better plant a thrifty one 6 inches high, than one as many feet whose roots have been confined for two or three years in a pot or can.

WHAT TO PLANT.—As a rule, too many trees to each lot are planted. Three trees on a 50-foot lot are plenty and the center one should be taken out after a few years. The points to be considered in the choice of a tree are about six in number, as follows: (1) General appearance; (2) drought resistance; (3) cleanliness; (4) amount of care; (5) rapidity of growth; (6) root system.

In some places it is desirable to have deciduous trees and the argument in their favor consists of the fact that they allow a maximum of sunshine in winter and give a maximum of shade during the summer. But in California we can always get plenty of sunshine, and unless the location is such that too much mud or dampness will be produced, I prefer evergreens.

When all nature is gay and every one has cause to rejoice; when the hills and vales are covered with wild flowers and the air is laden with perfume from the orange groves; while the palm and banana are unfolding their wondrous leaf growths, we are rudely awakened from our pleasant contemplation of the beauties of nature by the sight of the cheerless, leafless deciduous tree, forbidding, inhospitable, the very picture of desolation, totally at variance with the beauty everywhere expanding.

On a warm sunny day in winter, when we look forth on waving fields of grain, or citrus groves weighed down with fruit, a leafless tree looks to me nearly as much out of place as would a banana grove in Minnesota or the Dakotas.

The word evergreen is not meant to cover conifers or cone-bearing trees alone, as the word is used in the East, but just what Webster says it means—any tree which retains its leaves throughout the year. Conifera, by the way, are unfitted for roadside planting, except on avenues of unusual width where 20 to 30 feet may be allowed for them, either along each side or through the center. Allow me to quote on this subject from "Gardening in California." The author says: "Conifers are frequently used for street planting, but as language is not strong enough to condemn the impropriety of their use for street purposes no further attention is accorded them here."

Public convenience demands the removal of all lower branches for a height of 8 or 10 feet of trees that align a sidewalk or public highway. As the exquisite beauty of most conifers depends entirely upon the integrity of their lower limbs, the impropriety of planting any tree subject to these requirements becomes apparent. The same may be said of all cone bearers and many others upon private premises. Trees of pyramidal growth should be allowed the whole of their natural support.

LIST OF TREES.—For wide thoroughfares, to those who wish deciduous trees, are recommended the Spanish chestnut, one of the grandest shade trees known; for a medium tree, the pecan; for a still smaller growth, the Texas umbrella. Another first-class deciduous tree of medium size is the oriental plane (Platanus orientalis).

In the list of evergreens, our native live oak (Quercus agrifolia) easily stands first—so beautiful and so perfectly at home that no argument is needed to place it at the head of the list. I have never before placed this tree at the head, because it has been impossible to procure it in the nursery trade, but last week a nurseryman wrote me that he had 1500 fine trees, and I know of others who have large numbers started. This tree is supposedly of slow growth, but in good soil and with a good supply of water for the first few years, it will keep pace with the average tree. The oaks should not be placed too close together, 40 feet being near enough for country roads, and in case of 50-foot lots, one every 50 feet, at the dividing line between the lots, and some smaller growing tree between. The latter could in after years be cut out. A good plan would be to plant between the oaks two fine flowering shrubs, even though they were deciduous, as the crepe myrtle. These could later be moved to the yard. I have been told there is a State law preventing the removal of any such tree, which would defeat such a plan. If such a law exists it should be amended, so as to allow of the rational treatment of our streets.

Next to the oak, in my estimation, stands the Victorian bottle tree (Sterculia diversifolia). It is one of the cleanest of trees, of a bright, pleasing shade of green, the trunk is straight and mast-like, the branches are not far reaching and therefore not liable to injury by wind, and needs little if any pruning; it is a fast grower when well supplied with water, yet noted for its drought-resisting qualities. Its general outline is well-nigh perfect, its carriage graceful; it does not grow so thick as to harbor dead leaves and rubbish, yet enough to cast all needed shade; seldom does one make abnormal growth, and it will not injure the sidewalk by upheaval.

The third best tree is perhaps to be found in the acacia family, though it is doubtful which one of several species should be used. The most common one is perhaps the "blackwood" (A. melanoxion). In some localities we find grand street trees in acacias, decurrens, mollissima, or Retinodes floribunda. The latter at the age of ten years is the finest of the genus.

The carob or St. John's Bread is a tree that is bound to be extensively used in the future. It is a very fast grower and its drought-resisting qualities are of the first order.

Grevillea robusta is a good tree for dry localities

in the country, but for use in cities or towns it is too dirty. It should be pruned at least every other year for six or eight years, for the wood is quite brittle.

There are three species of Pittosporum which would make fine street trees, but they are as yet little known. One of the privets (Ligustrum lucidum) is very showy and soon attains the dignity of a tree. Several eucalyptus are worthy of a place along country roadsides, but for more thickly settled sections I do not like them. The best species are rudis, polyanthema and ficifolia.

Some streets should be planted to palms, to gain variety, and for this purpose the Chinese Windmill Palm (Trachycarpus excelsus) is the best, for several reasons. This palm is known to nurserymen in general as the chamærops. Where the soil is well drained to a considerable depth, the so-called dracenas (Cordyline indivisa and C. australis) are fine for palm-like effect.

Did I have the planting of a townsite, I should certainly plant some streets with flowering trees, such as jacaranda, lagunaria, and the crepe myrtles. The first named would need pruning for the first few years, but the magnificent crop of blossoms would amply repay for such care.

Did I have free sway in the planting of a townsite, I would plant the trees on the property line instead of the outer line of the sidewalk, as is usually done. This would necessitate placing the houses farther back on the lots, but the advantages of this plan are many. Such an arrangement would give more space for root growth, and allow of street trees which require summer watering. The trees would be out of the reach of horses; also away from mutilation of any kind, by cutting of the tops, or endangering the life of the tree by cutting away the roots to allow space for curb or to lower grade of street. Trees are also liable to danger from leaky gas mains when planted on the street line. Such a plan, too, would greatly improve the general appearance of the street, giving it a broader effect.

Now, in closing, let me repeat. It is not so essential to have some particular tree as it is that each street, or each block at least, should be planted with but one sort, and, in carrying out this plan, co-operation is the keynote of success.

Timber Trees for the Farm.

Mr. Herbert O. Stabler of the United States Forest Service is visiting California and making a study of forest trees in the valley regions of the State, with a view to finding out what trees have been planted and what varieties have done well. He will recommend for planting those best adapted for shade, ornament and utility. Mr. Stabler gives the Santa Rosa Republican a sort of preliminary statement about several trees. It is, perhaps, no exaggeration to say that every ranch of ten acres or over can profitably raise its own stove wood. A quarter to a half acre of Eucalyptus globulus, the common blue gum, will furnish the average ranch with fuel. To be sure, the blue gum does not make so good a fuel as the live oak, but those who have given the gum a fair trial claim that it is superior to the white oak and some even think it more satisfactory than the live oak. The man with a large ranch can make no more profitable investment than the planting of several acres to blue gum. Take the case of Mr. Harrison Mecham of Stony Point, 9 miles south at Santa Rosa.

Twenty-two years ago Mr. Mecham began the planting of blue gum, so that at the present time he has 85,000 trees, or about 125 acres. He is now cutting 1000 cords per year, on which he makes a clear profit of $2 per cord—paying $1.50 for cutting and receiving $3.50 per cord, the buyer doing the hauling. Mr. Mecham states that the demand for this wood is growing, and he will be cutting from 3000 to 5000 cords in a few years.

"Let us suppose a man decided to plant ten acres of eucalyptus, the following plan of procedure is suggested: If the ranch is a large one, choose some good fertile land in the valley, and, if possible, have the ten-acre tract in one body, though if the ranch extends into the foothills the plantation may be made in the hills, in which case a north or northeast exposure is desirable. It is proposed to plant one acre per year, and so on until the plantation of ten acres is complete. Break the ground to a depth of eight or ten inches, and work it as you would the planting of any crop. Lay off the grounds eight by eight feet, such a spacing requiring 665 trees per acre. The plants may be obtained from the nursery man at a cost of $12 to $15 per thousand, and can be set out for $2.50 to $3 per acre. On this basis the maximum cost of establishing an acre would be $13, to which must be added the expense of preparing the ground, making in all an expenditure of about $150 for the ten acres.

"The trees must be cultivated two or three times the first two years after planting, after which they will take care of themselves. At the end of ten years the first acre planted will be ready to cut, and a return of 100 cords per acre is a very conservative estimate. For example, Mr. Mecham has just cut a small grove of three-quarters of an acre near his house, from which he got 203 measured cords, and this grove was but sixteen years old. On a basis of a net return of $2 per cord, it is seen that $200 per acre for a period of ten years is a pretty good return on an investment of $15 per acre, even if the money is considered to be invested at 6% compound interest. By such a scheme it is seen that one acre will be ready for harvest each year, and at the time the last acre is cut the first acre will now have at least 150 cords on it, as the resulting sprouts grow much faster than do the plants from the seed. A small expense should be incurred per acre a year after the cutting in thinning the sprouts back to three or four per stump. The stump should be cut as low to the ground as possible, or at least not higher than 10 or 12 inches. Set out plants in spring when danger of frost is past. The above plan is applicable to a plantation of any size. So much for the blue gum, and I think Harrison Mecham of Stony Point will verify any of the above statements.

"The black locust may be grown at a profit if planted on good soil. On the Melone ranch, at Oak Knoll (6 miles north of Napa), I saw 102 locust trees, forty years old, that were 20 to 24 inches in diameter (many of them larger), with a clear log length of 20 feet, for which the owner had refused an offer of $1000. These trees composed the outside rows of four rows, planted along a driveway on the ranch. So this fast growing tree may be made to serve the dual purpose of shade tree and timber tree. Like all trees that sprout at all, the locust grows much faster from the stump than from the seedling. Planted for fence posts, the locust will produce posts 6 to 8 inches in diameter in ten or twelve years, and the wood is as durable in the ground as redwood, which is cheap now, but will certainly be dearer in ten years from now. To one wishing to grow locust, the seedlings may be grown in the garden from seed procured from local trees or from any seed house. Plant 6x6 and cultivate for two years. At the end of the fifth year the plantation should be thinned, taking out every other tree, but the close planting is necessary to assure good height.

"The Eastern black walnut grows very well here and there is a ready sale for logs 20 inches and over. The supply in the East is exhausted and the gunmakers of Germany are experimenting with other woods, but no wood is so desirable for gun stocks as black walnut. The native walnut is very inferior to the Eastern species.

"The forest service of the United States Department of Agriculture is ready at all times to give information to those wishing it on forest planting and will, if the planting be extensive enough, send an expert to prepare a plan for the plantation. For such advice or co-operation, address, The Forester, Forest Service, Washington, D. C."

FRUIT PRESERVATION.

Preserving Fruits for Exhibition.

As it is the season of the fairs, and not only for the fairs, but for permanent exhibits in connection with local development efforts, we comply with numerous requests to give again the formulæ which were used at the St. Louis World's Fair for preserving specimens for exhibition. It must be borne in mind that it is not easy to put up such specimens. It requires much judgment and points that can be learned only from experience. If any one thinks he only needs a recipe he will be greatly mistaken—he must learn how to use recipes and where it is essential to put brains into the process. It must be also remembered, of course, that these fruits are likely to be poisonous and are only to be looked at.

Formulæ for Preserving Fruits in Liquid.—The formulæ here given are recommended by men who have had experience in preparing fruits for exhibit purposes and who have made successful exhibits of fruits in solution. It must be kept in mind, however, that the greatest care is necessary in selecting the fruit, which should be in the best possible condition and without blemishes of any kind or injury from fungous diseases or insects.

In doing this kind of work it is necessary for even the experienced operator to experiment to a considerable extent himself before he can decide on any particular formula. Therefore, the formulæ given are simply recommended as guides, and those attempting to use them are advised to experiment for themselves, using small quantities of fruit.

After the fruit has been carefully selected place it in a receptacle in which it is to be preserved; cover with clean, clear water, and let it stand for six or seven hours, pouring off the water and rinsing the fruit thoroughly in the receptacle with a small hose in order to remove any particle of dirt from both the jar and fruit.

It is difficult to determine just how much glycerine should be used, as different fruits require different amounts, and practically the only way this can be determined is to make a practical test, which can be done by adding glycerine from time to time as it seems necessary to do so.

Use of Glycerine.—The specific gravity of the different fruits and even different specimens of the same variety differ considerably, so that no definite advice can be given. If a fruit is firm and solid it will not require a liquid of the same specific gravity that it would if it were overripe. It is recommended that the preserving liquid be as much lighter than the juice of the fruit as is possible without causing the fruit to crack. If the preserving liquid is heavier than the juice, the result will be that the fruit will shrivel; therefore, there is danger of adding too much glycerine, and practically the only way to avoid doing so is to begin with a small amount and add more if it is found necessary to keep the fruit from cracking.

Formula No. 1 for Fruit.—To every gallon of distilled water add two ounces fresh sulphurous acid. Stir well, pour this over the fruit, covering at least 1½ inch to 2 inches. To this should be added from eight to ten ounces of glycerine for peaches; for plums, six to ten ounces of glycerine, depending altogether on the amount of sugar contained in the fruit.

Set aside in a dark room for thirty days. If any change takes place, such as fermentation or discoloration, pour off the liquid, rinse the fruit and renew the preparation, prepared under the same formula as above.

If after thirty days' trial the fruit still ferments or discolors, it is useless to undertake to carry it through. The only thing to do is to prepare a fresh lot.

If it is desired to be more accurate as to the amount of glycerine actually required, ascertain the density of the juice of the fruit and add sufficient glycerine to the water to make its density equivalent to that of the juice of the fruit.

With this preparation the retention of the natural color cannot be guaranteed. To obviate this bleaching it is suggested to pour off the liquid after it has stood for five or six days; rinse the fruit in clear water and leave it stand for four or five hours, and then renew the preparation, repeating the operation until you are convinced that the color is thoroughly set and the chemical action to destroy the fruit has ceased.

Fruit Must Be Kept in Dark Place.—One of the secrets of keeping fruit under this formula is to keep it in a dark place for from thirty to forty days in a temperature ranging from 40° to 60°.

When placing it on exhibition care should be taken to keep it out of the strong sunlight. In purchasing sulphurous acid be careful that you get the fresh article, and that you get sulphurous and not sulphuric acid.

Formula No. 2 for Fruit.—To each gallon of water add six ounces potassium nitrate, one-fourth ounce formaldehyde, and enough glycerine to make the specific gravity of the liquid the same as that of the juice of the fruit.

Let the fruit stand for seven days in this preparation, provided there is no discoloration or fermentation. In case there is such, pour off the liquid and replace it with a fresh solution. Then at the expiration of seven days, if no adverse action has taken place, pour off the liquid and repeat the preparation, reducing the potassium to two ounces. Place the fruit in a dark, cool place and let it remain from thirty to sixty days. It should then be ready for exhibition, provided fermentation does not set in.

This preparation applies to all stone fruits, such as peaches, apricots, plums, prunes and nectarines, also to pears, grapes and currants, as well as hardy varieties of blackberries and mulberries.

Formula No. 3 for Vegetables.—For the ordinary vegetable, after thoroughly cleansing and removing all dirt, cover with a solution of two ounces to two and one-half ounces of sulphurous acid to one gallon of water, changing the preparation as often as discoloration occurs. This will have to be done every few days for from one to three weeks. The same care should be taken with the selection of vegetables as with fruit.

In the case of green corn, take three ounces of sulphuric acid instead of sulphurous acid, after it has been in sulphurous acid solution for two weeks.

Formula No. 4 for Fruit.—To each gallon of water add two ounces of carbonate of soda, six ounces potassium nitrate, and glycerine according to the density of the fruit juice. Allow the fruit to remain in this solution for ten days, provided no discoloration or fermentation takes place.

Pour off, rinse fruit and replace solution with one and one-half ounce carbonate of soda, according to fruit juice, and potassium nitrate.

Formula No. 5 for Fruit.—To each gallon of water add two ounces sulphocarbonate of zinc, glycerine according to the density of the fruit juice, and six ounces potassium nitrate. Allow the fruit to remain in this solution seven days. Repeat this solution with the exception of two ounces of potassium nitrate.

Formula No. 6 for Fruit—A solution of formaldehyde, sulphurous acid, glycerine and water gives good results in most cases. The formula as usually used is one-half ounce formaldehyde, two ounces sulphurous acid and from eight to ten ounces glycerine for peaches, six ounces glycerine for plums and twelve or more for grapes, to one gallon of water. After the fruit has been in this solution for one month or less time, should it begin to turn dark, pour off the solution, wash the fruit carefully and put on a solution of two to two and one-half ounces sulphurous acid to the gallon of water.

Agricultural Review.

Fresno.

LAS PALMAS SOLD.—Fresno Republican, Sept. 2: Hector Burness, of the Balfour Guthrie Co., has sold the Las Palmas vineyard property to E. L. Rogers of Salt Lake City. The Las Palmas is one of the oldest and most valuable vineyard properties in this county. It consists of 160 acres, 8 miles northeast of Fresno, on both sides of the Pollasky branch of the Southern Pacific. It was planted by Benjamin Woodworth in 1883 and brought by him to a high state of cultivation, so that it has been valued at $60,000, including a country residence. The place is entirely in vines.

Merced.

BEETS FOR STOCK FEED.—Merced Express, Sept. 2: Most of the sugar beets grown in the Merced district this season are being utilized for stock feed. A considerable quantity of the beets matured, notwithstanding the general blight. For this reason the sugar company did not start the factory nor make any arrangements for shipping.

Mendocino.

LARGE MELON.—Ukiah Press, Sept. 1 J. H. Christie was in from his Coyote Valley ranch with another load of his melons. He reports that some of the vines cover a space 27 feet in circumference, and that the foliage is so dense that it completely screens the melons. He broke another record Saturday by bringing in a melon weighing forty-two pounds.

Placer.

BIG SALWAY CROP.—Placer Herald, Sept. 2: There is a tremendous yield of Salway peaches in Placer this year. The past week has been a banner one for fruit shipments. Twenty-four cars went out of Newcastle Tuesday night, and fifteen out of Loomis. Several went out of Penryn and Auburn. On Friday of last week Schnabel Bros., at Newcastle, shipped five cars from their own orchards. Schnabel Bros. are also shipping to the cannery some Phillip clings, raised on their own ranches. Eight hundred cars have been shipped out of Newcastle to date. The total for the season will probably reach 1200 cars. Loomis, Penryn, Auburn and Colfax will ship 1200 more.

Riverside.

RIVERSIDE CITRUS MEN PLEASED.—Riverside dispatch to Chronicle, Aug. 31: The fiscal year for citrus shipments closes to-day for this county. Riverside county has sent East 6180 carloads of oranges at a free-on-board price of $2,900,950, and of lemons 970 cars, valued at $555,145 free on board. The assessed valuation of Riverside county is $30,000,000 and a return from the citrus industry of $3,456,095 is more than 10% of the total investment.

San Diego.

GRAPES SOLD.—Escondido Advocate, Sept. 1: Al Hiriart, M. Luc and T. Capasso of Los Angeles have purchased the entire crop of grapes on the Escondido Vineyard Co.'s vines, and have a force of twenty men picking grapes for daily shipments to Los Angeles. Several tons of grapes go out by express every morning, and will continue to do so until the entire crop is picked.

San Joaquin.

GROWS ASPARAGUS.—Special Stockton dispatch to the Chronicle, Aug. 31: The Empire Asparagus Company, which has filed articles of incorporation in the County Clerk's office, intends to engage in the growing and canning of this vegetable on a large scale. While waiting for the asparagus to mature, vegetables have been put in by the old company at Moorland, on Middle river. The directors are G. L. and Ruth Long of Fresno, A. D. and M. E. R. Barling and C. M. Oliver of Moorland and R. L. Peeler of San Francisco, The capital is $25,000, divided into 25,000 shares of the par value of $1 each. The directors have each subscribed for 4166⅔ shares. The corporation is only a change of form of the syndicate which has already acquired a large tract of delta land on the line of the Santa Fe Railroad, west of the city. They put in a large acreage of asparagus last year, and a number of other farmers in the same neighborhood have planted considerable areas, and will sell their product to the syndicate.

WINE GRAPE PRICES UNSETTLED.—Lodi special to Sacramento Bee, Aug. 30: The three wineries near Lodi have commenced crushing, and from now on it will be a busy season with them. The cooperative winery at Woodbridge will handle a large vintage, but the two wineries of the trust will crush about 11,000 tons, and for this amount it expects to pay to the growers of this part of the county $120,000. Wine-grape prices are unsettled as yet, but the following figures are quoted per ton: Zinfandel, $12; Mission, $11; Black Prince, $10; Petit Bouchet, $15; Prolific, $12; Burgen, $10. The Petit Bouchet is a small black grape, and is now coming into market in fair quantities. Independent buyers, who ship to the small Italian wineries about San Francisco, are already in the field. These men usually pay a dollar or so more per ton than the wineries, but by selling to the wineries here the grower can take his boxes home.

Santa Clara.

FRUIT NOTES.—Mountain View Register, Sept. 1: This week has been fine for drying; hot days and mornings free of fog. If this continues the prunes will be off the trays in no time, and the price of prunes is said to be increasing. Z. T. Croop sold his Muir peaches some time ago for 8 cents. Frank Urban on Giffin road lacked 270 pounds of having five tons of dried Blenheims on four acres. The trees are eight years old and non-irrigated. Z. T. Croop, on the Sleeper tract, off of Grant road, took one and three-eighths tons dried per acre of Blenheims off of each of four acres. Although his trees are irrigated, yet they dried away less than five to one. He realized $750 from this four acres. He has nine acres in this piece of land, the other four being prunes. From the nine acres he will receive between $1200 and $1300. A ton off of seven Crawford peach trees is a pretty good yield. Mr. Croop has just that number, and such was the record this year. Curl leaf is quite a problem with many growers, especially those who have Lovell peaches. In some cases the second growth of leaves came quickly enough to save the fruit, after the first growth was taken with the curl. In other cases the crop was practically destroyed. One grower having about a hundred Mary's Choice peaches lost the entire crop. One having four acres of Lovells took off four tons, where last year he took twelve tons and the year before that twenty-four tons. Spraying with the lime, sulphur and salt solution is the proper way of handling this trouble. Curl leaf is caused by a fungous growth upon the leaves. This spray will destroy that fungus.

Shasta.

FIFTH CROP OF ALFALFA.—Redding Searchlight, Sept. 1: W. J. B. Martin, living in the Churn creek bottom, has raised four good crops of alfalfa this season without irrigation and the fifth crop is now 6 inches high. Should an early rain come, the last harvest will be the best of all. Mr. Martin believes in irrigation and is debarred from using it only by the cost of getting water on his land. However, he is well satisfied with results of his dry farming. A singular feature of this season is that alfalfa should do so well on his place and vegetation should do so poorly.

Solano.

DRIED FRUIT AND ALMONDS.—Solano Republican, Sept. 1: The capacity of the local packing house of the Ernst Luehning Co. is taxed at the present time to meet the orders received for the company's brands, several carloads being shipped each day. In addition to its fruit business this company will this season, as in former seasons, handle a large quantity of apricot pits, the demand for which has become quite extensive since the discovery a few years ago that the kernel of the apricot pit was valuable in manufacture of certain oils. The J. K. Armsby Co. is also handling a large quantity of dried fruit. This company has purchased a large quantity of almonds from the orchardists of Suisun valley and other almond growing districts in central and northern California. With the exception of the Davisville Association, a greater portion of their almond purchases will be handled at Suisun. The old cannery building is now being fitted up for this purpose, including the installation of new machinery, which will be operated by electricity. The last car of fresh fruit for the season from this point, comprising the odds and ends of different varieties, was shipped to the Eastern market by the Alden Anderson Fruit Co. on August 24. Almond harvest is now in full sway. While the yield is not heavy, the crop is fairly good and the quality excellent.

Sonoma.

PACKING HOUSE TO BE DOUBLED.—Healdsburg Enterprise, Sept. 2: Sherriff Brothers will handle 1000 tons of prunes this summer. The large quarters, erected last year, are found inadequate to handle the increased business. The new annex, 60x40 feet, is now being built and will be of the same style as the main building.

NEW HOP KILNS.—Santa Rosa Republican, Sept. 1: Samuel Purrington, a hop grower of the Mount Olivet district, is constructing two new concrete and stone kilns at his yards and these will be completed in a few days and not retard the gathering of the present crop. Next season Mr. Purrington intends to erect some new cooling rooms for his hops. The new kilns are 30 feet square and said to be the most modern in Sonoma county.

Stanislaus.

FINE PEACHES ON CERES RANCH.—Modesto Herald, Aug. 31: The finest peaches brought into Modesto came from W. H. Harter's young orchard in the Ceres district. They were Elbertas and Muirs and were uniformly large and well flavored. Mr. Harter has eighteen acres in peaches—ten of one variety and eight of the other—and he has given the orchard careful attention and intelligent study. The trees are four years old this fall. He has cut them back every year to about three stalks. The fruit this year came from new growth that made as much as 12 feet growth since last pruning time. As a result of this rigorous cutting back the trees are of large and vigorous trunk, and this policy, together with proper irrigation and cultivation, enabled Mr. Harter to place in the Modesto market the finest peaches seen here this year. Mr. Harter will irrigate his older trees in January and will not irrigate again until within ten days or two weeks of maturity. The quality and flavor will then have been established, and he believes that the irrigation at that time will increase the size of the fruit. While sparing irrigation, he will by no means spare cultivation.

SUGAR BEETS.—Modesto Herald, Aug. 31: Within a day or two shipments of sugar beets at the rate of a carload a day will be started from Turlock. The beets will go to the Alvarado factory in Contra Costa county, that concern having taken the Hawaiian Refining Co.'s local contracts off its hands. It is expected that twenty-five carloads will be shipped from Turlock. They come largely from sub-irrigated land, test from 14% to 16% sugar, and are of remarkable purity, averaging 89%. These are first-class sugar beets. The Hawaiian Co. are seeking to induce as many growers as possible who have beets to use them for dairy and stock feed, and in consideration of their release of liability to take the beets will cancel the contracts and obligations incurred for seed, thinning and cultivating. A. Eckstein, a settler on the Garner ranch, east of Modesto, has received a report from Prof. Shaw of the State University of the result of analysis of sugar beets produced by him. They showed 16% sugar and 89% purity, but the yield is not more than half a crop at best—rather less. Mr. Eckstein finds that the beets, fed to his cows, materially augment the quantity and cream content of the milk.

Tehama.

HOP PICKING.—Corning Observer, Aug. 31: Hop picking will begin at the Horst ranch near Tehama next Monday, and will be in full blast by the middle of the week. The crop will be heavy considering the age of the vines. Careful estimates place the yield from the 160 acres at 1000 to 1200 bales. Each bale weighs 180 pounds. Prices are expected to open close to 20 cents. At this figure the value of the crop will run over $35,000.

SHEEP INDUSTRY.—Redding Searchlight, Sept. 1: W. H. Black, one of the most extensive sheep raisers of Tehama county, has his 6000 sheep on summer range at Trinity Center, and has just finished shearing. Mr. Black says that this season has been a profitable one for all sheep men. Wool and mutton have both brought good prices. From his sheep now on summer range near Trinity Center, he has just cut 76 bales of 400 pounds each, or 34,400 pounds of wool, which will bring 21 or 22 cents. Mr. Black has just refused an offer of $3.25 a head for 1500 ewes. He will ship his wool out by Delta and drive his flocks back to Tehama county early in October. It will take twenty days for the sheep to make the journey from Trinity Center to Thomes creek in Tehama county. "Tehama county has more sheep within its borders than any other county in the State," said Mr. Black. "I roughly estimate the number at 400,000 when they are all at home."

Ventura.

BEAN HARVEST APPROACHING.—Oxnard Courier, Sept. 1: At the machine shops it looks as though lima bean harvest is fast approaching. Five new machines are being built—two of these will go to Goleta, in the northern part of Santa Barbara county, and three will be put in operation in this county. These three are for Hyde Chaffee and Charley Simpson (800 sacks capacity), S. R. Thorpe (500 sacks) and Ben Moraga (500 sacks). It will be noticed that the machines building are not of large capacity, the small-capacity machine, it is said, being the more stable and reliable, while very much cheaper to build and to keep in running and repair. Two machines were burned in the county since last season, while one was removed to Santa Monica. So far as is known, there will be twelve machines operated in the county the coming season, and, from the looks of the crop, every one of them will be kept busy from start to finish.

FINE BARN.—Oxnard Courier, Sept. 1: Myers & Abplanalp have completed for Adolph Camarillo, on his ranch on the Calleguas, one of the largest and handsomest barns to be found in the county. The new structure covers a ground space of 72x74 feet, by 24 feet high, and has a cement floor throughout. It is arranged to house thirty-six head of horses, with granary and hay room sufficient to feed them for nearly one year, besides a carriage driveway and a harness and wash room.

Yolo.

BLACKBIRDS EATING ALMONDS.—Davisville Enterprise: A new pest has this season beset the crops of the almond grower east of Davisville, near Putah creek. The orchardists had previously noticed that the blackbirds seemed to hang about the almond orchards, but never suspected their doing damage until they began knocking their almonds, when to their amazement the work of the busy blackbird was in abundant evidence. The Hatch varieties were the chief object of attack. It has now been verified that the blackbirds have done hundreds of dollars' worth of damage, the Nonpareils receiving the most attention from the sharp pointed bills of the little fellows. When the work was discovered the orchardists endeavored to drive them away, but made little progress, as the birds would simply avoid the hunter and skip around over the orchard from point to point, keeping busy all the time. Eli Snider estimates his loss at $400. Stuart and W. S. Montgomery and O. B. Wilbur also report serious loss. This raid of the blackbird is a new one on the almond growers. They say they had never known or suspected anything of the kind.

OREGON.

GOOD PRICES FOR HOPS.—Portland dispatch to Chronicle, Aug. 31: The opening of the hop market for the season of 1905 was noted to-day, with opening prices ranging from 16 to 14½ cents per pound. Five hundred bales of choice hops were sold for England at the top figure, for October delivery. Two hundred and fifty bales of prime brought 14½ cents.

WHEAT CROP IN NORTHWEST.—E. W. Wright, the Morning Oregonian's wheat expert, whose estimates of forthcoming crops have been reliable in previous years, makes the following predictions for the 1905–6 crop of wheat of the States of Oregon, Washington and Idaho. Oregon—Umatilla county, 4,500,000 bushels; Sherman county, 1,500,000 bushels; Gilliam county, 1,100,000 bushels; Union county, 800,000 bushels; Morrow county, 700,000 bushels; Wasco county, 600,000 bushels; all other counties, 3,200,000 bushels. Total, 12,400,000 bushels. Washington—Whitman county, 8,000,000 bushels; Lincoln county, 7,500,000 bushels; Walla Walla county, 4,000,000 bushels; Adams county, 4,000,000 bushels; Douglas county, 2,000,000 bushels; Franklin county, 1,500,000 bushels; Spokane county, 1,000,000 bushels; Garfield county, 1,000,000 bushels; all other counties, 3,800,000 bushels. Total, 32,800,000 bushels. Idaho—Total, 4,800,000 bushels. Grand total, 50,000,000 bushels.

Horse Owners! Use

GOMBAULT'S



Caustic Balsam

A Safe, Speedy, and Positive Cure

The safest. Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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WAKELEE'S

Squirrel and Gopher Exterminator.



The Best Poison in the Market.

Has Stood All Tests for 30 Years.

The Home Circle.

The Cash Account.

I cannot make the thing come out,
  Though I have thought and thought and thought,
And tried to make a careful note
  Of everything that I have bought.
The more I think and think and think
  The more in vain my brain ferments.
Confound the pesky cash account!
  Where did I spend that thirty cents?

Ten cents for car fares—that's all right,
  Three dollars for a new straw hat;
For luncheon, fifty; shoe shine, five—
  Oh, hang it! Yes, I've got all that!
Considering the scant supply,
  The treasury has too many vents.
It's outgo, outgo all the time—
  Where did I spend that thirty cents?

Cigars, four-fifty; grape juice, ten
  (I think it had some foam on top);
Bleachers and peanuts, thirty-five,
  And ten cents more for ginger pop.
But still that haunting deficit
  My deep perplexity augments.
What was it for?—Oh, well, here goes!
  "For foreign missions, thirty cents!"

—Louisville Courier-Journal.

"Ongrateful."

"No, I ain't a-goin' to give ye my wristers!" Ned repeated. "Like it er lump it, Dan Mosher!"

The lads confronted each other angrily. Dan, the larger, lifted his axe in menace; but he thought better of it, and sunk the blade into a log. His freckled face was fiery, and his small eyes snapped viciously.

The other boy, Ned Richards, was quite as excited as Dan, but much more calm. He even smiled in a dry fashion, as he gathered up his wood. Dan saw it, and flamed out.

"You're a mean scamp!" he cried. "I'm a good mind ter lick ye, ye stingy little runt!"

"No, y' ain't!"

"Yes, I be!"

"Well, that ain't doin' it," Ned said, with provoking coolness. "Y' ain't spelled 'able,' nuther."

Dan gave a sort of howl, and dropped his axe. Ned stood on the defensive.

He was not prepared for Dan's next movement, which was to bend to his work again with a troubled sigh; but a heavy step on the snow explained it a moment later, and both boys turned to meet Elnathan Mosher.

"I heerd ye!" the new-comer began, fretfully. "Al'ays a-naggin', aint ye? Why can't ye git along like other boys? What ye fell out about now? What's he been a-doin' to ye, Dan'l?"

"He wouldn't lend me his wristers f'r te wear te Sade Ward's party," Dan answered, glibly. Mr. Mosher groaned.

"Where's my new mittins I let ye take last week?" Ned demanded, in his turn.

"Huh!" Dan seemed embarrassed. He gathered a snowball and rounded it with anxious care, his eyes averted, whilst his father stood looking from one to the other. When the boy did at last prepare to speak, Mr. Mosher forestalled him.

"I'm 'fraid ye're kind o' dog-in-the-mangery, Edward," he said. "Ye hadn't ought to let it grow on ye. Ef Dan'l—"

"'F Dan didn't have no more things of his own 'n what I've got, I guess he'd hang on to 'em!" the smaller boy interrupted." My Sunday school teacher knit me them wristers. Think I'm goin' to let him swap 'em with Jake Day f'r dime novels same's he did my mittins?"

The farmer's jaw fell, and he stared at his son in mingled amazement and horror. Dan wriggled and twisted and fumbled with his axe. Evidently both were glad when a shrill call for "Supper!" gave them an excuse to move.

Mr. Mosher growled and grumbled under his breath as he slouched toward the house. Speech came to him when, in the kitchen, he found that his wife leaned against the dresser, coughing violently.

"There 'tis agin!" he complained. "This 'tarnal hackin' in the house, 'n them boys a-quarrellin' outdoors! I don't git no peace o' my life!"

The woman controlled herself by an effort.

"I'm sorry, Elnathan," she said meekly. She pressed her hand to her side while he mumbled a hasty blessing, and when he forked a half-dozen "flapjacks" into his plate, she could do no more than pretend to nibble at a biscuit. Ned's eyes were fixed on her in dread and pity, and she smiled at him. The gleam of cheerfulness provoked the man to another outbreak.

"It beats all natur'!" he said between mouthfuls. "You don't care nothin' 'bout this boy goin' te fight Dan'l, do ye? Why don't ye grin at Dan'l, 'stead o' that ongrateful—"

"He isn't ongrateful," she interposed.

"Dan's always offerin' to lick me," the boy explained, in the same instant. I wuz jest a-goin te let him try, that's all."

The farmer snorted unbelievingly, but for a wonder let the matter drop. The meal progressed, as meals usually did in the Mosher family, with much sound of eating but none of talk. It was only as Dan pushed away his plate and sat enjoying the full comfort of repletion, that words were spoken. "Goin' te give the minister 'n his wife a chivaree Toosday night," he remarked, indefinitely.

"Who's goin' ter?"

"Oh, the fellers."

"You ain't!" his father said, with all the energy he owned. 'F I hear o' you cahootin' 'round with any sich crowd—a'ter the bringin'-up you've had—I'll—leather ye! 'Sides that," he added, "you'll hev enough to do over 't the sugar-camp."

"Why can't Ned do it?" the boy whined.

"'Cause I'll need him to hum. Now you shet right up, young man!" I heerd ye a-cussin' out there't the woodpile! I'm a-goin' te leave ye more by y'self so's 't ye c'n think o' where blasphemers goes ter!"

Dan choked an impudent rejoinder, and started for the door. The father took his pipe and sat down to smoke.

Ned moved close to the lamp and began to pore over an old arithmetic. The occurrences of the hour had practically passed out of his mind. The peevish father and the sly, brutal and hypocritical son were so many parts of an old story.

When Ned's parents had died suddenly, two years before, their next door neighbors, the Moshers, had offered to "take" him, and the boy had agreed to go with them, as he would then have agreed to anything. When he came to understand his position, discontent availed him little.

There are not many openings in a retired Maine village for a boy of fourteen; and though he had thought of trying his fortune outside, he could not quite decide to leave. He was a quiet boy, "curi's," the people said, and "clus-mouthed," and he never named the reasons for his patience; but somehow, he knew, many of them centered in Mrs. Mosher.

She had been his mother's friend. She had been good to him, and she was dying. All Ned could do was to help the poor woman in unobtrusive ways, to speak gently, to try not to provoke the father and son.

"Pooty hard on ye, Elnathan—with the place not paid f'r," he said.

"Yes, 'n' help's oncommon high 'roun' here," the farmer assented, drearily. "'F she could 'a' hild on till I got that heater-piece cleared! 'N' here's this boy's foolishness on top o' the hull!" he added, more loudly.

Ned's face was toward the wall, but he felt that the men and the woman were looking at him.

"Yes, I cal'late the jestice 'll sock it tew him." The constable's tone was dignified, yet full of professional relish for righteous punishment. "Y' see it's m'licious mischief 'n' trespass 'n' arson," he pursued; "'n' what makes it wuss is that it's perfanin' the sanctooary an' interferin' with the gospil, 's ye might say. Jestice 'll start him f'r Thomaston, I shouldn't wonder. 'F he doos let him off with a fine, it'll be pooty hefty."

"'N' that ongrateful whelp hez hed two suits o' clo'es in two years—'n' all o' Dan's old ones—'n' his schoolin'—'n' his victuals! 'N' I let him go fishin' three times last summer! 'N' ye see how he pays me back!"

Ned turned and faced them, wondering and angry.

"You talkin' about me?" he demanded.

The constable bowed humorously.

"You?" he repeated, jovially. "Why no, sonny! We wuz a-talkin' 'bout the young raskil that rung the meetin'-house bell te chivaree the minister—'n' sot the steeple afire. I cal'late that feller lives over 't the Ma'sh way, somewheres. P'r'aps you know him. You reco'nize these?"

With an awkward attempt at a dramatic jesture, he held up the comforter and mittens that Ned had lent to Dan.

"Why—yes," the boy said, slowly, "they're mine."

"Course they be!" Mr. Mosher put in. In his anger and excitement he talked indifferently at one and the other. "So ch'ice of his things he wuz—nigh fit with Dan about 'em—'n' yit he c'd wear 'em te break inte the meet'n-house—when you wuz sent f'r the doctor—'n' took five hours te pretend te go four mile!"

Ned sat up, white-lipped and wild-eyed; but he made no rejoinder.

"Oh, I don't want no straighter clue, 'f my name aint Veedock!" chuckled the constable. "Aint gut the cheek te deny ye done it, hev ye?"

"Has she heard about this?" Ned asked, suddenly.

"Certain."

"No," said the boy. He hid his face in his hands. "No," he repeated, more firmly, though in a stifled voice; "I don't deny it."

The neighbor shook her head mournfully as she set a cup of coffee in front of Mr. Mosher.

"Don't seem to hev no feelin' f'r them that's took care of him, doos he?" she groaned. Mr. Mosher groaned in unison.

"'S a wonder te me he didn't break his neck, 'stead o' sprainin' his ankles, when that bell-rope give way!" the constable reflected aloud.

"I eenamost wish 't he hed!" the farmer muttered.

Of these last words Ned heard little and heeded less. Leaning against the wall, he hitched himself into the bedroom. The constable followed. The boy's heart was in his eyes as he leaned over the dying woman. When she smiled up at him, he sank to his knees and buried his face.

"I don't believe ye done it, Neddy," she whispered. "Some mistake!"

"I'm awful glad my Danny didn't do it, nuther," the woman went on. Her voice was only a breath, but it had a curious intensity that carried it far. "Him bein' over t' the sugar-camp—course—he——"

"Course he didn't!" Ned's face was still hidden, but his words were firm and reassuring.

"No. 'F he had—I'd 'a'—felt—awful!"

She said no more, and seemed to doze. The boy, still kneeling, rose at the touch of a hand. The constable shouldered him into the kitchen.

"I got te keep an eye on ye, ye see," the constable explained, as the boy once more flung himself upon the lounge. "I'd ought to take ye te the lockup, but I kind o' thought I'd let ye stay a while.

"I cal'late he may 've told that boy o' yourn suthin 'bout the bell-ringin'," he added. "You sent f'r him, Elnathan?"

"Yes. He'd ought to been here by this time."

Ned faced the wall again and shut his eyes. It was not so easy to close his ears to the constable's coarse jokes, to Mosher's muttered reflections on his ungratefulness and worthlessness, or to the heartless comments of the neighbors. They were all ready to believe evil of him, he thought bitterly. No one trusted him, not one—but yes, there was one; and she—

But to get along with Dan was not easy. Arguing the case in his own mind, Ned had decided to take a bold stand against his exactions—to wage a brief war for the sake of a long peace.

The plan appeared to prosper. After the quarrel at the woodpile, Dan was more civil than he had been for a long time. He even recovered Ned's mittens and returned them with a sort of apology. For two or three days quiet reigned indoors and out—except for Mr. Mosher.

On Monday morning, when Dan made ready to start for the sugar camp—it was 5 miles away, and he and the Day lad would stop there for the week—Ned felt almost friendly toward him. He was not unready to respond to Dan's wish that "them mittens was his, them and Ned's comforter, too. 'Tis cold over there, ye know," Dan muttered, sheepishly. "Nights is—'n' mornin's. Marm ain't knit me no comforter this year, 'n' I—I—"

"You may take 'em, Dan," said Ned, freely.

"Say! Don't ye let marm know it, will ye?" the boy urged, holding Ned back from the house. "I—I throwed away my comforter. The fellers made fun of it at Sade Ward's party, 'n I—"

"No, I won't tell her," the other promised. He smuggled the comforter and mittens to Dan, and Dan buttoned them out of sight. Ned stood at the fence and watched the ox team away. It occurred to him that, for a time at least, theirs might be a happier family.

Yet the very next night he roused from his first sleep to find the farmer standing beside him, and a glance told the boy that there was trouble in ne house. He jumped up and began to dress.

"Guess ye'll hev te go f'r the doctor, Ned," the man said, tremulously. "'Cindy's took bad. I'm afeard she's dangerous."

The boy needed no second bidding. He was fairly out in the moonlight before he perceived all that the message involved The doctor was on the other side of the river, 4 miles away. Mosher's horse was lame, and those belonging to the nearest neighbors were still in the logging camps. The roads were so many quagmires.

He caught his breath with a sob as he saw the impossibility of bringing help quickly. Then he took to the untrodden fields.

Here the soft snow clung and hindered, but he drove his way with impatient energy. A wild March wind rioted around him. The fever in his blood made it seem soft and spring-like, but he knew there was chill in it, and he reflected, gladly, that the road would be easier for the doctor. For all the obstacles, he felt that he made good progress. He could afford to laugh mirthlessly when his "short cut" brought him in sight of Little river. He stood still, resting. When he had looked the second time, he rubbed his eyes.

The next moment he had leaped the fence and crossed the road. A white-lettered signboard stared him in the face.

"Danger!" it said.

He gazed beyond it once again, his heart throbbing painfully, his eyes filling with tears. Little river had become great. Rising above the footway, it had swept off the rotten bridge, and now was clutching at the piers, flinging against them masses of ice and driftwood.

The boy tore a rail from the fence. He had an insane fancy that he might lay it on a pier and creep across. Standing at the very edge of the swirling torrent, he strained to throw it forward. It fell short and the river drew it away. Overbalanced, he slipped, and crouched, helpless and full of pain, half in the water.

He could not have told how long he remained there; nor did he know how, dragging a sprained ankle, supporting himself by a chance-found stick, he made his way to the lower bridge, and thence to the doctor's. He only knew that he set his teeth and went on.

There must have been intervals of unconsciousness. After one such, he found himself leaning over the bridge and heard the roar of the swollen river. Again, he was beating and yelling at the doctor's door. Then came the torturing homeward ride in the dim March morning.

When he recovered he was lying on the lounge in Mosher's kitchen.

The farmer sat smoking, elbows on knees, in one corner. Ben. Saunders, the constable, sprawled backward across the table, balancing his stick in one hand. Between the kitchen and the sitting room a neighbor woman wandered, humming, with down-drawn lips, a doleful hymn. The door of the sitting room bed room was ajar. Ned's eyes sought it and lingered.

"How's Mrs. Mosher?" he asked, faintly.

"Dying," the doctor said, with unprofessional abruptness. "Won't live through the day."

Mr. Mosher sighed. The constable spat reflectively at the stove.

"She's gone," the doctor announced, as he came from the bedroom. Ned pressed his face far down in the pillow and flung his arms above his head. He did not hear the complex sounds that attended the clearing of the kitchen. He lay in rigid silence, hardly so much as thinking. After some moments, when he was better able to classify his causes for grief and rejoicing, he lifted himself a trifle. An unusual stir and the mention of a name more fully roused him. He listened eagerly.

"They wa'n't there," the messenger to the sugar-camp was saying. "They didn't do no bilin', yist'day, nuther, 'n' I found this."

Something seemed to pass from hand to hand. After a moment, the constable read aloud:

"Dere father and mother. Jaik an' Mes gon west we will not be taken alive.—Yours truely, D. E. Mosher."

"Wal, that's curi's!" Mr. Mosher muttered.

"I s'picion they've run away," a new voice broke in.

"Hey?"

Ned turned and looked at a man who had entered with the messenger.

"I see some o' this 'ere meetin'-house business," the new-comer explained. "Day's boy 'n' your Dan wuz at the bottom of it."

"Hey?" Mr. Mosher said again.

"I wuz 'long by the meetin'-house when they clumb in the winder. I jest laid low 'n' watched 'em. When I heerd the bell ring, I mistrusted what wuz up, bein' 's I knowed your minister was a-gittin merried, 'n' I—"

"Why didn't you stop 'em?" the constable demanded.

"Oh, cat's foot! You 'n' me 's been boys! I shouldn't a' said nothin' 'bout it 'f they hadn't done no more mischief."

The constable looked at Mr. Mosher, then at Ned.

"Well, young man!" he began, with a doubtful grin.

"I'm glad Dan got away," the boy said, simply. I'm goin', now. I'm glad"—his voice was earnest, though so tremulous—"I'm glad she—I was bound she shouldn't know!"—Youth's Companion.

How to Remove Freckles.

At a luncheon party in the hotel restaurant, the other day, a party of women just back from the country were discussing the subject of complexions. One of them was badly freckled, and consequently in quite an unhappy frame of mind.

"Now look at Mary," she exclaimed in an aggrieved tone. "I don't see a spot of any kind on her skin, and yet she used to freckle just as much as I do."

Mary met the sustained and curious glances of her friends with a smile and hastened to say:

"I don't mind letting you into the secret. It's nothing but a faithful devotion to the soap and water cure."

"You mean face steaming?" asked one.

"Not at all. This is a newer remedy. I wonder you haven't heard of it, for all the complexion specialists are advising it.

"Use water just as hot as your face will comfortably bear. Make a lather of the soap and scrub with the camel's hair brush fully five minutes. Nothing less than five minutes will answer, and be sure to time yourself, or you will imagine the time is up when you have been scrubbing about one minute.

"After the scrubbing rinse off the soap with very hot water, using plenty of it. Then begin rinsing with cold water, and continue that until the skin feels quite cool. That is all.

"To get the best effects the face must be scrubbed both night and morning for several weeks. Lately I have taken the scrubbing only in the morning, but I kept it up faithfully twice a day for nearly three months.

"The trouble with some women is they expect almost instantaneous results and, becoming discouraged after a week or two give up the treatment altogether. Judging from my own experience I am firmly convinced that soap and water is the best complexion lotion on the market, the very best freckle eradicator extant. And I mean to stick to it."

How a California Girl Killed a Wildcat.

Miss Helen M. Gookins, aged 19, lives with her widowed mother on a ranch near Neenach postoffice, in the Antelope valley country, not far from the northern boundary of Los Angeles county, says the Los Angeles, Cal., Times. Wholly unarmed, she attacked a large wildcat, which had crouched as if to spring upon her, and after a desperate fight, during which her clothing was torn by claw and tooth, she killed the dangerous beast.

With her mother Miss Gookins is engaged in raising Angora goats, of which they have a large herd. During the past month or more she noticed that nearly every week several of the young goats were missing. The foothills are infested with bobcats and mountain lions, and the tracks of these animals near the corral told the fate of the kids. A neighbor shot several wildcats near there, but still the raids upon the goat flock continued.

Tuesday Miss Gookins mounted a mule to go to the home of a neighbor, several miles from the ranch house. Instead of taking the road she decided on a short cut across country. As she was going up a hill a short distance from a deserted house in which she and her mother formerly lived, the mule gave evidence of fright and refused to proceed. For a time Miss Gookins could see nothing to alarm the animal, which continued to snort and try to go back along the trail. The daring young woman dismounted, hitched the mule and went on foot to investigate. She did not even have a riding whip.

As she approached a small tree overhanging the trail she saw a wildcat on one of the lower branches. It snarled and spat at her, but did not retreat. Instead of running Miss Gookins made a detour and approached the tree and cat from the hill above. Thinking to frighten it, she hurled a large stone with all the force that her strong arms could exert at the cat. She struck the animal squarely on the head, knocking it from the tree and stunning it for a moment. Then she ran to the abandoned house in search of a weapon. She found an old two-pronged pitchfork, both points had been broken off, and returned. She tried to stab the cat to death with the fork, but the blunted prongs were not sharp enough to penetrate the tough hide.

The animal fought fiercely, but she managed to pin it down by holding the fork upon its throat. She shoved it down hill toward an old gate nearly 200 feet away. Several times the claws of its hind feet struck the young woman's skirt, cutting long slashes. Near the gate she found a bar of iron, and with that she beat the wildcat to death. Then she tied the body of the animal to her riata, and attaching the other end to her saddle, dragged it home.

Domestic Hints.

Sponge Cake with Fruit Sauce.—Cut a loaf of fresh sponge cake into rather thick slices and lay these on a plate. Cook in a rich syrup flavored with maraschino, diced pineapple, or any chosen fruit, and when this is cold pour over the cake. Surround with a border of whipped cream and serve as soon as possible. The cake should not be allowed to get soft or too soggy before it is served. In using strawberries for this dessert, they must not be cooked for more than a minute; indeed, they need not be cooked at all. Cut them in small pieces and stir into the syrup when it is cool.

Lobster Salad in the Shell.—Prepare a lobster salad by cutting the fresh boiled lobster into neat dice. To two cupfuls of this add a teaspoonful of Russian caviar. Mingle all with a good mayonnaise dressing to which has been added a half pint of whipped cream just before it is put with the salad. Serve this in the back shells of the lobster.

Ginger Cakes.—Mix and sift together six cups flour, two tablespoons ginger, one tablespoon cinnamon and one tablespoon soda. Heat one-half cup lard or butter, one cup New Orleans molasses and one cup brown sugar until boiling. Take from the fire, add one cup sour cream and pour gradually into the flour mixture, beating until smooth. Pat and roll out, cut into small cakes and bake in a moderate oven.

Hints to Housekeepers.

Besides the bother in winding worsted for fancy work off in the balls, it is not good for the worsted itself. It stretches it, and removes something of the light surface, making it stringy. It is better to unwind a skein into a very loose round, like a bottomless nest in shape, and holding this on the lap, use from it in working.

It is a mistake to throw away the salt and slush which remain in the freezer after the ice cream has been made. The salt will do perfectly for the next freezing, and if some of it is still slushy and wet use it for the top layer the next time the freezer is filled. The freezing process will be greatly hastened.

The dense pulp and heavy flavor of the banana is sometimes improved by mixing it with other more acid and watery fruits. A can of cherries in which the quantity of syrup overbalanced the fruit was improved recently by straining off the liquid and cooking diced bananas in it until they were transparent. Then they and the cherries were mixed.



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The Markets.

San Francisco Produce Report.

San Francisco, Sept. 6, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.		Dec.	
Wednesday	$ 78¾@	77⅞	80⅝@	79⅝
Thursday	79⅛@	78¼	81⅛@	80⅛
Friday	79⅛@	78¾	81⅛@	80⅝
Saturday	80 @	79¼	81⅜@	81¼
Monday	—@	—	—@	—
Tu sday	80⅞@	79¼	81¾@	81

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53⅝@51¾	43 @42⅝
Thursday	53⅞@52⅞	43⅝@43
Friday	53⅛@52¾	43⅛@43⅜
Saturday	52⅞@52¼	43⅛@43
Monday	—@—	—@—
Tuesday	52⅞@52½	43⅜@43

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905	May, 1906.
Wednesday	$1 30⅞@1 30	$ —@—
Thursday	1 31⅝@1 31	—@—
Friday	1 32½@1 31¼	—@—
Saturday	1 31½@1 30⅞	—@—
Monday	—@—	—@—
Tuesday	1 31 @1 30½	—@—

Wheat.

The spot market for wheat is steady. Trading has not been heavy in the face of large offerings, and stocks have had a slight tendency to accumulate. No change in prices is anticipated by local commission men, as it is known that Northern wheat is now on about a level for export value. There has not been much trading in December option, as there is a feeling among local jobbing circles that the bottom has not been reached owing to the very favorable reports which are coming in from most wheat sections of the country. Reports from the East would indicate that wheat needs support just at present to hold it even for a decorous decline. If it were not for occasional cautions covering by leaders because prices look so low, the decline would be much faster. It is probable that the lowest prices in the Northwest will be seen before the big movement of new wheat starts, just as they were seen in the Southwest. Reports of weather conditions continue very favorable, those from Washington and Oregon stating that those sections are having especially fine harvesting and threshing weather, and that the crop is now about half out of the way.

California Milling	$1 55	@1 65
Cal. No. 1 shipping	1 50	@1 55
Oregon Club	1 47½	@1 52½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.32½@1.32.

Flour.

Mills are just now beginning to grind the new crop, but new wheat is not yet in the market in any appreciable quantity for milling purposes, though such as has come in promises well for the crop, if it may be taken as a criterion. Some northern flour is now coming into this market on account of the falling off of the export trade owing to the Chinese boycott, but it is mostly of an off grade which is fit only for bakers' use. Advices from the north say that, believing that lower prices for flour will prevail, Japanese buyers have practically withdrawn from the market. Offers made by Portland shippers at a continually descending scale of quotations have failed to bring orders. Well-informed flour men believe that the peace agreement will have a strong effect on stimulating buying as soon as prices can be named that are satisfactory on the other side. A letter from Hongkong stated that stocks of flour at that port on August 1st amounted to 185,000 sacks of Oregon and Washington and 50,000 sacks of California flour. This is a small quantity and ordinarily such a condition would be accompanied by liberal buying, but by reason of the boycott business was almost at a standstill at the time the letter was sent.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market continues active and prices are being held steadily as quoted. Good lots are demanding a premium and off grades are moving very slowly. The amount of strictly choice feed barley now appearing in this market is very limited, and it does not look as though there would be any decline in price in the next few weeks. There has been considerable trading in futures, December option having ranged in price from 99c to $1. This extremely close range for the entire week shows the steadiness of the tone of the market. Reports from the grain sections of the coast show a fair average yield of barley.

Feed, No. 1 good to choice spot	$1 02½	@1 05
Feed, fair to good	95	@1 00
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 05	@1 10

Oats.

There are no strictly fancy black oats in this market nor will there be any, if samples now being received by local dealers can be used as a fair criterion of this year's crop. The quotations of $1.45 per cental is on the inferior grade now being offered in this market, but black oats of a good quality would easily bring an advance on these quotations. Choice reds and heavy milling varieties are scarce. Reports from Chicago state that the shipping demand for oats was only moderate, sales having been made in that market to the extent of 140,000 bushels. A falling off in the demand for local consumption has prevented a rise in price, although there are very limited holdings and receipts have been light.

Black oats	$1 45	@——
Red, choice new	1 30	@1 45
Red, fair	1 22½	@1 27½

Corn

The market shows very little change for the current week. There has been some trading in spot goods, but no large jobbing movement has developed. Prices are ruling firm as quoted. There is very little small yellow corn now in the local market, and the market is a shade stronger, though at quotably unchanged prices. A choice lot of large white corn would bring an advance on quotations given. Chicago advices say that the shipping demand for corn continues to rule slow, with sales of only 75,000 bushels reported for last week.

Large White, good to choice	$1 40	@1 42½
Large Yellow	1 40	@1 42½
Small Yellow	1 50	@1 60

Rye.

Plenty of rye of a good quality is now coming into this market from California sections as well as much that is inferior from the Salt Lake belt. The choice grades are easily bringing the top quotations of $1.52½ per cental, some having brought even a slightly higher figure.

Good to choice	$1 47½	@1 52½

Buckwheat.

There is no buckwheat now in the market outside of some very limited holdings in the hands of mills. A few sales have been made to growers at prices ranging from $2.25 to $2.50 per cental. The holdings are not sufficient to justify a quotation.

Good to choice	$1 75	@2 25

Beans.

Bayos are now entirely out of the local market, not even damaged stocks being available. The demand for other varieties has been fair, choice small white beans showing an advance due to largely reduced stocks. There are no good pinks offering in the local market, the last of these having been taken up by growers as seed. Damaged stocks of pinks have been somewhat neglected and are being held now at $1.50 to $2 per cental, only the very best of those now on hand bringing the latter figure. Limas are somewhat weaker and blackeyes are ruling firm at quotations.

Small White, good to choice	$——	@3 75
Small White, damaged	1 50	@2 75
Large White	2 50	@2 85
Large White, damaged	75	@1 50
Pinks, damaged	1 50	@2 00
Bayos, good to choice	——	@——
Bayos, damaged	——	@——
Red Kidneys	3 50	@4 00
Reds	5 50	@6 00
Limas, good to choice	5 25	@5 50
Black-eye Beans	3 75	@4 00

Dried Peas.

Quite large quantities of peas are now coming into this market and would indicate that there is a large crop. The carryovers from last year's crop will also be of goodly size, and so the consequence, it is feared, will be much lower prices. Stocks of strictly choice green peas are still bringing the $2.10 basis, but dealers are of the opinion that they can be bought later at $1.50 per cental in any desired quantity. No Salinas peas have yet arrived, though they are expected within a few days.

Green Peas, California	$1 85	@2 10
Niles	1 75	@2 00

Hops.

Since the last advices there has been no improvement in the local hop situation. In fact, the market shows evidences of a further weakening and a slight decline in the price of spot goods is noted. The latest purchases of spot goods were made at 13c to 15c, but occasionally an extremely choice lot will bring the maximum quotation of 18c. Large stocks have been offered on the local market at these figures, but there has been little buying. Contracts can be secured at 12c to 13c for futures on the ranches. The slump in prices is principally due to the exceedingly fine condition of European crops. Estimates now coming from England state that crops there will yield about 650,000 cwt., against 281,000 for last year's crop, and from Germany and the Continent the estimates are of a crop of 950,000 cwt., against 750,000 for last year's yield. Pacific coast crop prospects are very favorable, indicating that there will be 20,000 more bales than last year. New York State is the only locality where the indications point to a smaller yield than last year's, the estimates being of about 10,000 to 15,000 bales less.

Good to choice 1904 crop, nominal	15	@ 18

Wool.

The local market is very quiet. Fall wools are coming in, but stocks have a tendency to accumulate owing to a small demand and because prices have been held up too high to meet the ideas of Eastern buyers. There has not as yet developed an active Eastern market, and those who have already bought are finding that they bought too high and are finding difficulty in moving their stocks. Fall shearing is not general. The best of these wools come from the north and will not be shorn before September. There is not much snap so far to the demand for fall grades, and it is the general impression that growers will not get as high values as they anticipate at present.

FALL.

Humboldt and Mendocino	24	@27½
Northern, free	23	@26
Northern, defective	18	@20
Middle County, free	20	@25
Middle County, defective	17	@21
San Joaquin and Southern, free	12	@15
San Joaquin and Southern, defective	9	@13
Oregon, valley	25	@27½
Eastern Oregon	16	@22
Nevada	17	@21

Hay and Straw.

Arrivals of hay during the week just ended show a slight increase over the arrivals of the week preceding, and with two holidays to deal with there are naturally some accumulations. Arrivals of alfalfa by water continue to be heavy and this condition is expected to continue as long as the rains hold off. About 1500 tons are yet in stacks in San Joaquin county and Napa and Sonoma counties still have large stocks to be shipped.

Wheat, good to choice	$ 9 50	@ 13 50
Wheat and Oat	8 00	@ 10 00
Tame Oat, fair to choice	7 00	@ 10 50
Wild Oat	5 00	@ 8 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	5 50	@ 9 00
Stock hay	4 50	@ 5 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	25	@ 40

Millstuffs.

Stocks now on hand are of fair size in nearly all varieties and a liberal demand is keeping prices at the former level. Bran is still held only in limited quantities and has advanced 50c per ton in price. Middlings are also firm and cracked corn and shorts are moving rather slowly.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 50	@ 23 00
Middlings	28 00	@ 30 00
Shorts, Oregon	22 00	@ 24 00
Barley, Rolled, choice	22 00	@ 22 50
Cornmeal	30 00	@ 30 50
Cracked Corn	32 00	@ ——
Oilcake Meal	33 50	@ 35 00
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

Flax is still scarce and somewhat higher, good lots being readily taken at the advance of 25c noted. Other stocks are also light and promise to be well cleaned up before the new crops begin to come in. The California canary crop is not materializing as has been anticipated, one dealer reporting that he has been able to secure only 25% of what he had ordered up to date.

Flax	$3 00	@ 3 25
Mustard, Yellow	2 85	@ 3 00
Mustard, Trieste	4 00	@ 4 25
		Per lb.
Canary		6¼@ 7
Rape		2½@ 3
Hemp		3¾@—
Timothy		5 @ 5½

Honey.

The market continues very weak, but prices are being maintained as quoted. Stocks have a tendency to accumulate under normal receipts and a still further reduction in price may be necessary before the honey in first hands can be moved. Receipts are of good quality, the average being much lighter in color than usual.

Extracted, Water White	4¾@ 5
Extracted, White	4¼@ 4½
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax.

A fair amount of trading has been done and prices are being well maintained. Receipts have fallen off somewhat, probably owing to the number of holidays this week having interfered with shipments.

Good to choice, light ₱ lb	26	@27
Dark	25	@26

Live Stock and Meats.

The market is steady at the advance noted for all kinds of live stock and meat, except hogs, which are somewhat weaker. There is now plenty of small veal coming into the market, as well as an abundance of sheep and lambs, but prices are being maintained by a fairly brisk local demand.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4	@ 5½
Beef, 2nd quality	3½	@ 4½
Beef, 3rd quality	3	@ 3½
Mutton—ewes, 6@6½c; wethers	7	@—
Hogs, hard grain, 130 to 230 lbs	5¾	@—
Hogs, large, hard, over 230 pounds	5¼	@ 5½
Hogs, small, fat, under 130 lbs	5¼	@ 5⅝
Veal, large, ₱ lb	5	@ 7
Veal, small, ₱ lb	8	@ 9
Lamb, spring, ₱ lb	8	@ 8½

Hides, Skins and Tallow.

The hide market shows little change from last week, although prices are inclined to be a little weaker. Hides are, however, well cleaned up, and it is hard to see how any very serious drop can come in the near future.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

The market continues active and stocks were still further reduced during the current week. The market is now bare of grain bags entirely, and bean bags are in very large demand as growers are anticipating the largest crop that has ever been seen on the Pacific coast. Bean bags and fruit sacks are very firm and grain bags normal.

Bean Bags	$ 5¾	@—
Fruit Sacks, cotton	7	@7¾
Fruit Sacks, jute, as to quality	6	@7½
Grain Bags, Calcutta, 22x36, spot	7⅛	@7¾
Wool Sacks, 4-lb	33	@—
Wool Sacks, 3¼ lb	30	@—

Poultry.

A steadier market is looked for this week because of light receipts, too many holidays evidently interfering with the regular shipments. There is a special demand for large young roosters and large hens and appearing quotations are well maintained.

Turkeys, choice Young, ₱ lb	$ 21	@ 23
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	20	@ 21
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 00	@ 7 00
Fryers	3 50	@ 4 50
Broilers, large	2 50	@ 3 00
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	4 50	@ 5 00
Ducks, young, ₱ dozen	4 50	@ 5 50
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	2 00	@ 2 25
Pigeons, old ₱ dozen	1 25	@ 1 50
Pigeons, young	1 25	@ 1 75

Butter.

The market remains firm on fancy stock with receipts rather light, necessitating a large drawing from storage stock. Strictly fancy creamery will bring an advance on quotations while storage is a shade weaker. Intermediate grades are moving rather slowly.

Creamery, extras, ₱ lb	23	@25
Creamery, firsts	22	@23
Creamery, seconds	20	@21
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	17	@18
Mixed Store	17	@18

Cheese.

The market is holding its own and prices are being well maintained at last week's advance, with strictly fancy mild cheese in demand and the market on the same a shade firmer. Receipts have been only moderate but of excellent quality. Secondary grades are moving slowly, though prices are well maintained owing to light receipts.

California, fancy flat, new	11	@12
California, good to choice	10	@10¼
California, fair to good	9¼	@10
California, "Young Americas"	11½	@13¼
Eastern, new	15½	@18½

Eggs.

Selected ranch eggs are now in good

demand with other grades dragging somewhat. Receipts have been large and are coming in in very good shape, owing to the continued cooler weather. Prices on all grades remain quotably unchanged.

California, select, large, white and fresh.	28	@	30
California, select, irregular color & size.	25	@	27
California, good to choice store	18	@	22
Eastern firsts	20	@	22
Eastern seconds	17	@	19

Potatoes.

The potato market is somewhat firmer and prices are a little stiffer. River Burbanks show a slight advance and an advance is also noted in the top prices for Salinas Burbanks and Chile Garnets. Receipts have been large, but a good local demand for River Burbanks and a good demand for Salinas for shipment to Alaska have held the price firm and even caused a slight strengthening.

Cal. Early Rose, ₱ cental	50	@	60
River Burbanks, ₱ cental	60	@	75
Salinas Burbanks	85	@	1 15
Chile Garnet, ₱ cental	60	@	70
White Rose, ₱ cental	65	@	75

Vegetables.

The vegetable market is now in very fair condition, prices on most varieties ruling steady, and those varieties which are now nearly out of the market showing an advance on strictly choice stock, the same being very hard to procure. Lima beans have declined 2c owing to an unusually heavy crop and large receipts of uniformly good quality. Wax beans are also slightly weaker for a similar reason. Green corn has advanced, choice lots easily bringing the top quotation of $1.25 per crate. New Yellow Danvers onions are a shade weaker, owing to the falling off of the export trade demand for Australia. Australian brown onions are now quoted in this market at 85c per cental, while all other kinds of vegetables are ruling steady, with tendencies to advance as receipts fall off.

Beans, Lima, ₱ lb	5	@	—
Beans, String, ₱ lb	2	@	4
Beans, Wax, ₱ lb	2	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	75	@	1 25
Egg Plant, ₱ box	50	@	65
Garlic, ₱ lb	4	@	5
Onions, New Yellow Danvers, ₱ ctl.	75	@	85
Onions, Australian Brown, ₱ ctl	85	@	—
Peas, Green, ₱ lb	3	@	3½
Peppers, Bell, ₱ box	35	@	40
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	50	@	60
Tomatoes, ₱ box or crate	75	@	1 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes. about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

There is a slightly weaker tone to the fresh fruit market, owing to the unusually large receipts of nearly all kinds of fruits now in the market, with the exception of apples and pears, the prices of which are being well maintained on account of short crops and consequently light receipts in the local fresh fruit market, most of the fruit having been taken up by buyers and canners on the ranches. Strawberries are becoming very scarce and are ruling very high in price, Longworths being quoted at $8 and $10 per chest. Notwithstanding the short crop reports from some of the heaviest vineyarding sections, receipts coming into the local fresh fruit market are large and of uniformly good quality, which fact, coupled with an only modest demand, has caused a slight weakening in the price of seedless grapes. Bartlett pears are firmer, and choice lots are easily bringing the top quotation of $1.75 per 40-pound box. Large varieties of strawberries and Santa Clara strawberries have advanced $1 for choice, defective grades being held as before.

Apples, choice to select, ₱ 50-lb box	75	@	1 25
Apples, good to choice, ₱ 50-lb. box	35	@	50
Apples, fair to good, ₱ 40-lb box	40	@	50
Blackberries, ₱ chest	2 00	@	4 00
Cantaloupes, pony crate	—	@	—
Cantaloupes, ₱ box	25	@	50
Crabapples, ₱ small box	—	@	—
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	1 00	@	1 50
Grapes, Seedless, ₱ crate	85	@	1 00
Grapes, ₱ small box	65	@	85
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ large box	1 00	@	1 50
Peaches, ₱ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	1 25	@	1 75
Plums, large, ₱ crate	60	@	85
Plums, ordinary, ₱ box	50	@	65
Raspberries, ₱ chest	6 00	@	8 00
Strawberries, Longworth, ₱ chest	8 00	@	10 00
Strawberries, large var., ₱ chest.	5 00	@	7 00
Strawberries, Santa Clara, ₱ chest	6 00	@	8 00
Watermelons, ₱ doz	1 20	@	2 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The market shows some further weakness, but prices have not settled further than at last reports. Prunes are, however, an exception to the general rule and are holding their own well. Stocks of prunes now in second hands are very light, and it is not expected that the carry-over will be large. Reports from the growing and drying sections would indicate that a larger number of prunes will be dried this year than usual, but that they will find a much readier market than usual owing to rather limited crops in foreign prune-growing sections. Oregon prune raisers are shipping much of their fruit East, only the poor grades being sold to driers. It is expected that what is shipped will command an exceptionally high price in the Eastern markets.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes.	6	@	6½
Apricots, Royal, good to choice, ₱ lb	7	@	7½
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	55	@	62½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	7½	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	8½
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7¼
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

Old-crop raisins are out of the market, nearly everybody having made the last clean-up. Choice seeded sold as high as 5¾c. The Central California Raisin Packing Co. will probably announce prices along toward Oct. 1, and the few outsiders that remain will undoubtedly wait for the prices of the new amalgamation. These will be higher without question. The Fresno raisin crop will be comparatively small, but growers are already worrying about the short labor supply.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	——
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	——	@	1 30
Dehesas, 20-lb box	——	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4½		c

Citrus Fruits.

Oranges of all varieties, except Valencias, are out of the market, and these are very scarce and prices firm. Reports from the south continue to favor the growing orange crop, careful estimates placing the yield at a figure considerably higher than last year. Lemons are firm and limes are a shade easier, while grape fruit shows an advance in price.

Oranges, Valencias, ₱ box	2 00	@	4 00
Lemons, California, select, ₱ box	3 00	@	5 50
Lemons, California, good to choice	2 50	@	2 75
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 50	@	2 50
Limes, ₱ box	4 50	@	5 50

Nuts.

Receipts of new crop almonds are heavy and show a good quality, confirming all reports of a large crop which have been received in their market. It is expected that prices will be made this week by the Association, and until that time very little trading is expected to develop, as it is thought that prices will open considerably lower than those now being held for in this market. The prices quoted on almonds are prices now being paid by some dealers in this market for choice new crop almonds. Walnuts have a slightly improved outlook in some districts, though the general impression is that the crop, as a whole, will average somewhat short of last year's crop. There is a fair demand for both walnuts and almonds now in this market.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½
Almonds, IXL, ₱ lb	—	@	11
Almonds, Ne Plus Ultra, ₱ lb	—	@	10½
Almonds, Nonpareil, ₱ lb	—	@	11½
Almonds, Languedoc, ₱ lb	—	@	8
Almonds, Golden State, ₱ lb	—	@	8
Hard Shell, ₱ lb	—	@	5½

Wine.

The market shows but little change this week. Crushing has begun at some places, but a market for the new wine has not yet been established. Sweet wine is still held here at 37½c, with dry wine bringing 28½c.

THE initial step in the fight between the farmers of Benicia and the Selby Smelting Co. has been taken and papers asking for almost $10,000 damages have been served on the president of the company by Frank McGowan of San Francisco. These damages represent the demands made by C. B. Deming, a farmer of Glen Cove, for injury to grain and live stock alleged to have been caused by the smelter fumes. The aggregate amount of damages asked by the farmers of the district is $78,000.

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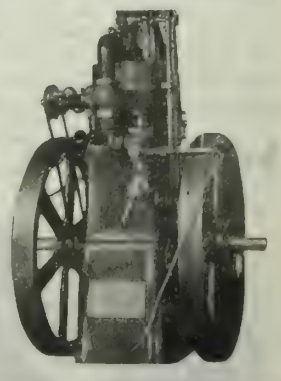
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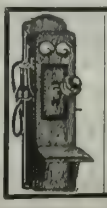
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AGRICULTURAL ENGINEER.

How They Are Trying to Impound Mining Debris.

Capt. Wm. W. Harts, U. S. Corps of Engineers, recently gave in the Academy of Science building, in San Francisco, an authentic account of what had been done and what was proposed to do in holding back mining debris in rivers now being ruined by it.

The first portion of his lecture was devoted to a history of the mining debris problem in California, the situation that gave rise to the creation of a California Debris Commission, and the scope and intent of that body's powers. This was followed by a description of the mining region assigned to the control of the Commission, and estimates of the amount of detritus lodged in the streams, and the duties of the Commission under the federal law. Following this, in speaking of the manner of work done, Capt. Harts furnished considerable further data hitherto unpublished. In the matter of individual dams, he said that various kinds of dams had been tried—those of stone, of earth, brush and rock, log-crib filled with rock, and many others. After twelve years of experience, it has been found that the usual small mine, where impounding dams can be used, will need one of two general types—either log-crib dams or brush dams.

The log crib is the more common type. It consists of a cob-house crib, with the logs of which it is made notched and bolted together. It is filled with quarried rock and chinked against leakage. This type of dam is seldom built over 40 feet high, this being the limit of safety placed by the Commission for the usual case. These dams are very satisfactory for their purpose when well made. As long as they are kept wet they are practically permanent, and in those locations where the logs rot, due to being dry part of the time, the rock being well bedded in gravel will resist erosion long after the logs have failed to bind the dam together.

The brush dam is less used, as it is permitted usually only when the water flow over the dam is small, or when the river is diverted through a spillway at one end, and only when the slope of the canyon above is slight. These brush dams are not permitted over 20 feet in total height.

There is now mined nearly a million cubic yards each year which is stored in the canyons and ravines behind debris dams especially constructed for the purpose.

Another side of the Commission's duty is the study of the rivers of the Sacramento and San Joaquin river systems with a view to the preparation of plans for the treatment of these streams and their tributaries, so that the injurious mining detritus may be kept out of the navigable rivers and the streams restored to their former condition of navigability as far as might be needed.

Yuba River.—It was decided to commence with the Yuba river, as this stream has suffered more from mining debris than any other in California, and if the difficulties here could be surmounted, the methods found best adapted for the purpose would likely be more easily applied to the other streams.

After a study of several years and after extended surveys in which numerous borings were made, a plan was adopted by the Commission and submitted to Congress in 1900.

1. Barriers across the river just below Smartsville, to prevent the addition of coarse detritus from the upper reaches.

2. A cut at Daguerre point through which to divert the river at high stages, with embankments forming a settling basin for impounding fine material during the remainder of the year.

3. Training walls 2000 feet apart, extending from Daguerre point to the Feather river, to confine the flow to a selected channel.

Barriers.—The barriers were to be a system of weirs extending across the river, where the banks are high enough to afford large impounding capacity, the first located a few miles below Smartsville. This dam has just passed successfully through its first high-water season and is the first to withstand a single freshet in the lower Yuba river.

The dam consists of four rows of piles, the two upper intervals between rows being 10 feet, and the interval between the third and fourth rows being 18 feet.

Piles were 6-feet centers in the uppermost row, 12-feet centers in the two middle rows, and 3-feet centers in the lowest row. Every 12 feet the piles in a tier up and down stream were connected at their upper ends with 1-inch galvanized wire cable. A timber bulkhead 3 inches thick was spiked to the upstream and another to the downstream row of piles, and was carried as deep as the water in the river would permit.

Between the first two rows of piles was placed a fill of rock which was brought up to a subgrade, so that when covered by the concrete blocks, 1½ feet thick, the height of the barrier would be 6 feet above the average level of the river bed. Concrete blocks about 10 feet square and 1½ feet thick were built in place over all this fill, connecting by means of a rollerway with an apron 20 feet wide resting on the river bed below the dam.

The upstream slope was protected with an inclined layer of large rock laid in Portland cement mortar. The concrete slabs of the top surface of the dam and those of the apron were separated from each other by tar-paper joints, and, to prevent dislocation by the river currents, were connected in the direction of the stream flow with 1-inch galvanized wire cables, 3 feet apart, imbedded in the concrete. The cables connecting the piles referred to above were also imbedded in a narrow strip of concrete 18 inches square, which helps bind the heads of the piles together in each tier and separates the large blocks.

Excepting these narrow strips, the concrete slabs rest on the river bottom only and are not supported on the piles. They are jointed so that they are free to move vertically, the cables acting as a hinge.

This, it was designed, would permit the concrete blocks to follow down any considerable scour under the apron, should it occur, and thus prevent any serious damage to the dam due to back-lash.

The weak place in all over-fall dams on poor foundations is, of course, the toe. The rollerway and apron it was hoped would protect the river bed from excessive and dangerous scour. In addition, an extension or lip of masonry 6 feet wide was placed below the apron to carry the water farther away from the toe, and if underscoured it would break up, fall in the hole and offer protection against further action. In addition, for about 600 feet the dam at the south end, where the scour was believed to be strongest, was further protected by large rock or rip-rap placed at random.

The south end of the dam was joined to the bedrock of the river bank, but at the north end a concrete abutment was built, founded on piles, to act as a retaining wall for the earth embankment which was later built to connect the dam with the shore. The north shore is composed of compactly cemented gravel, through which it was originally planned to have a spillway constructed to carry the river at all stages except flood. During construction the entire river was permitted to pass between this abutment and the north shore before building the embankment, so that the concrete dam could be constructed entire on the dry river bed. When it came time to close this gap through which the river flowed, it was found to be an undertaking far greater than was anticipated, as there were about 1200 to 1300 cubic feet per second flowing around the end of the dam. This flow had to be lifted upwards of 8 feet over the completed structure.

The first pilework placed to close this gap failed with the pressure of water, and through the serious scour in the bottom which took place while trying to close the opening. Later more piles were placed in the opening, and by the liberal use of brush and sand bags the gap was finally closed.

The first step of the permanent dam having been completed as above described, it is now proposed to build in accordance with the project a similar step 8 feet higher, lying upstream of the present work and connecting with it. Contracts are already let and work has been commenced on this second step.

In the same way it is expected to put a step 8 feet high on the dam each working season. In this way the ultimate height of the dam will be reached by successive steps. This method was found advisable, as the amount of work possible in the river bed during the low-water season is limited and time must be given the river to fill each step with gravel.

The first step, already built, has been filled with gravel to its crest since the first heavy freshet, and gravel as large as pigeons eggs have been rolled over the top of the dam for several months.

It is thus plainly seen that the dam as a whole is a gravel fill dam sluiced into place by the river itself, the downstream slope of which is composed of a layer of concrete blocks having a general inclination of about 1 vertical to 3½ horizontal. The concrete overlies a rock fill held in place by a framework of anchor piles and timber bulkheads.

Daguerre Point Section.—The plans for the treatment of the intermediate section of the Yuba river involve the construction of high embankments across the river in a V-shape, with the apex upstream, the ends connecting, one with Daguerre point on the north, and the other with a high knoll on the south bank.

A diverting barrier connects the apex of the V with the north shore, diverting to the south all water below the elevation of its crest. Through Daguerre point is being cut a channel 600 feet wide and 25 feet deep, through which all the river flow at high stages will pass.

On the south bank, regulating works will admit all the water diverted by the diverting barrier below a limit of about 6000 to 7000 second feet, passing it into a natural depression of about 2 square miles and lying adjacent to the river on the south. These works will exclude all flow above what is considered safe, compelling the excess to pass to the north over the diverting barrier and through the cut.

This plan is simply taking advantage of the natural regimen of the river.

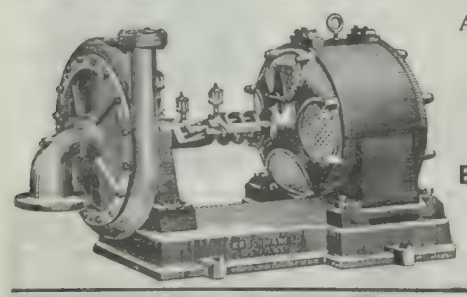
All rivers have their sections of active erosion, usually where slopes and velocities are highest, their sections of transportation where slopes and velocities are sufficient to carry sediment but not to scour, sections of sedimentation where the reduced velocities permit the sediment to fall and form deposits, and the section of discharge.

The construction of the embankments and the use of a large settling basin only increase the natural area of the section of sedimentation. The river is passed into an area where the velocities are checked, although not entirely overcome, so that practically all their load of sediment is dropped. The water passing back into the river at the lower end of the basin is practically clear. At stages of the river occurring for a short time only each year, where the flow of water through the settling basin would be more than could be settled, the regulating devices will exclude the excess, causing it to pass into the cut. This will happen only in such high stages that the velocities are thought to be sufficient to carry whatever fine sediment is in suspension into the Feather and Sacramento rivers, which, being in flood at the same time, will carry the sediment into the tidal currents of the bay and thence into the ocean. The solution of the extreme high water part of the problem is not thoroughly satisfactory, in view of the fact that adequate levees are not yet built on the Sacramento to control its flow; but as the periods of such high water are short, the damage, if any should result, will be limited and will vanish when the Sacramento is regulated—a vast problem now receiving attention.

Bear River.—As stated before, the Yuba river was the first to be studied and the first to be taken up for treatment. The Commission are now planning to take up the work on Bear river, and a survey is authorized and is now being arranged on which to base plans for the future improvement of this stream.

Should the Bear river work be approved by Congress and by the State of California, and funds provided, the work will be extended to the American river and other sediment-bearing streams until the entire problem is solved.

KROGH PUMPS



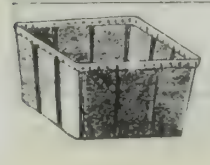
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THE RANGE.

Range Horse Traffic in the Northwest.

Mr. A. B. Clark of Montana says, in the Orange Judd Farmer, that generally the number of horses on the range in large herds has greatly diminished, as is also true of cattle. As an offset to this, the number of owners of horses has greatly increased, but their holdings are smaller than they were years ago. I think the records of our stock association in this State show that in 1904 there were shipped 180,000 horses. This probably is the greatest number of horses that have ever been shipped from Montana in one year. My opinion is that twice this number of colts were branded in the State, and the number of horses in Montana must be increasing.

There is a disposition among horse owners to buy and breed very much better stallions than they have ever owned before. I believe as good a horse can be bred on the Montana native grasses, the blood lines being the same, as anywhere in the world. There is a growing tendency on the part of our ranchmen to care for their horses in the winter time. In a short time we will be raising grain-fed horses which, I think, will compare favorably with any horses in the United States. I think the number of horses sold and shipped out of the State this year will be equally as large as last. Most of the horses sold at Missouri and Mississippi river markets came from Idaho, Nevada, Utah and Oregon, with some from Colorado and New Mexico.

At my sale, June 5, I sold seventy-five branded horses for one owner, at an average of $106 a head. These horses where shipped from the western part of Montana and weighed 1200 to 1500 pounds. A carload of extra good two-year-old colts, sired by a Shire stallion, brought $61. Some Indian ponies went as low as $8, and common scrub yearlings for $15, with two-year-olds at $17 and $18. Matured horses and mares, unbroken, sold at $20 for 850-pound stock, up to $75 for 1200-pound horses.

I consider these prices are about the same as last year. They are unusually good, and as the horses are sold at auction and the prices are made entirely by Eastern buyers who attend, we suppose they must be satisfactory to them. Broke horses sell in this State $5 to $10 per head higher than wild ones. Different divisions of the country prefer different types of range stock. Buyers from Minnesota, Wisconsin and Pennsylvania take good, heavy mares and geldings. Feeders in Iowa, Illinois and Ohio want large framed geldings to fatten for market. Missouri, Tennessee and Kentucky take first-class mares suitable for breeding purposes. Southern dealers purchase a light grade of rangers at lower prices than the corn belt buyers pay. Alabama and Louisiana take great numbers of such animals. We have shipped rangers as far east as Vermont. Lately Montana ranchmen have proved good buyers of stock too thin to go East. This class is fed on grass until mature and ready for market.

THE VETERINARIAN.

Answers to Inquiries.

By E. J. CREELY, D. V. S., Dean of San Francisco Veterinary College.

CURE FOR WORMS.

TO THE EDITOR:—Would you kindly let me know through the PACIFIC RURAL PRESS the remedies for worms? I have a young mare that has been troubled with them since she was a colt.—H. J. SULLIVAN, Suisun.

The following is a dose for an adult horse:

Turpentine, 2 ozs.
Santomine, ½ drachm.
Male fern, ½ drachm.
Raw linseed oil, 14 ozs.

Mix and give all at once after twenty-four hours' fasting.

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THE FIELD.

California Agricultural Statistics.

By Mr. George Robertson, Commercial and Agricultural Statistician.

On several occasions during the last three years I have pointed out in the columns of the Fresno Republican the urgent necessity for reliable statistics regarding the many and varied products of this State in general, and of this county in particular. In a long article on California fruits, published June 15, 1902, and in another written for the Fruit Growers' convention, which appeared in the Republican on Dec. 8, 1903, I gave many facts and figures proving how unreliable published figures now are, and the pressing want of correct returns instead of rough estimates. At last it appears that steps are to be taken to supply this demand, as the Legislature has recently passed an amendment to the county government act, requiring the counties at their own expense to collect certain agricultural and other statistics, and return them by the first of November in each year to the secretary of the State Board of Agriculture, and the board has prepared and sent out schedules to the board of supervisors in each county showing the data required. The value of such figures will depend entirely upon the system adopted to obtain them, no rehash of assessor's returns will be of any use and on this depends the success or failure of the present plan. It will be impossible this year to obtain anything like complete or correct returns in the short time now available.

It is notorious that the assessors' returns in every county in the State are greatly underestimated; some of the best authorities place the difference at not less than 20%. I can endorse that opinion from personal experience, as three years ago I spent two or three months collecting information for a corporation, and among other sources, I examined every page of the assessors' rolls of Fresno, Madera, Kings and Tulare counties. I could give numerous illustrations of omissions, but will only cite a few. On one large estate no vines were returned, although there were 800 acres; in another case only 50 acres were returned, when there were 440; in another, 728 acres instead of 1000; and in a fourth case, 400 acres were given when there were 730 acres. In another county all the fruit trees were returned as non-bearing.

Now take another test and compare the figures of the census bureau for 1900 with those of the assessors' rolls for the present year. Unfortunately it is only possible to take the fruit trees for comparison, as the census gives the number of vines and the assessors the acreage, and as the number of vines to the acre varies it is impossible to show the exact difference.

ORCHARD TREES IN FRESNO COUNTY IN BEARING.

	Census Report. 1900.	Assessors' Roll. 1905.
Fruit.		
Apple	54,945	22,782
Apricot	164,184	72,050
Cherry	5,628	1,545
Peach and Nectarines	924,486	675,876
Pear	213,984	4,468
Prunes	128,153	65,342
Unclassified	22,028	.....
Totals	1,513,408	849,663
Nuts.		
Almonds	12,446	5,675
Walnuts	1,436	2,745
Others	111	.....
Totals	13,993	8,420

SUBTROPICAL FRUITS IN BEARING.

Figs	38,886	52,765
Persimmons	435	.....
Lemons	5,721	5,654
Oranges	78,195	42,350
Olives	30,811	38,765
Pomeloes	101	.....
Unclassified	2,416	.....
Totals	175,545	139,534
Total orchard trees	1,513,408	849,663
Total nut trees	13,993	8,420
Grand total fruit and nut trees	1,684,946	997,617

According to the above figures there are 687,329 fewer trees in bearing now than five years ago, the only two showing any increase being figs and olives. It is true that owing to the pear blight there has been a heavy falling off in the number of these trees, but nothing that could explain the above enormous decrease. In 1902 the number of pear trees in bearing is given in the assessors' reports as 82,370; in 1903, 61,009.

If further proof were wanted to show that the system of depending on the assessors' returns for statistics is unsound, you have it here in these imaginary differences. The same remarks apply to grapes as to other fruits, as, in spite of the large acreage that is known to have been planted in recent years, the actual figures do not show any very striking increase, and are undoubtedly much below the mark:

ACREAGE IN GRAPES IN FRESNO COUNTY.

	Bearing.	Non-Bearing.	Total.
Table grapes	1,270	554	1,824
Raisin grapes	44,090	5,265	49,355
Wine grapes	27,850	5,375	33,225
Totals	73,210	11,194	83,404

The following summary for five years will give an idea of the increase in wine grapes between 1897 and 1901; but the actual increase since the latter year has been much more than here shown:

TOTAL ACREAGE IN FRESNO COUNTY, 1897 AND 1901-4

Year.	Table.	Raisin.	Wine.	Total.
1897	762	38,790	3,244	4,296
1901	1,030	45,030	29,695	75,755
1902	1,213	46,847	30,596	78,656
1903	1,435	46,700	30,737	78,872
1904	1,634	47,690	32,064	81,788

No doubt it is exceedingly difficult, for obvious reasons, to obtain correct returns for taxation purposes, and, considering the limited time in which the work has to be done, the wonder is that the assessors' returns are as complete as they are. The census returns seem to show that farmers and others are ready to give more exact information to an official who is not a tax gatherer. A State bureau of statistics would be the best organization to collect the details required, but even the new plan will result in a great advance on the meager information obtainable.

At the present time energy and money are being expended by chambers of commerce, the State agricultural and horticultural societies, real estate men and others in an active endeavor to advertise the resources and future possibilities of their several counties, and nothing would so assist in promoting this task as the publication of detailed and properly classified statistics issued by official authority.

As matters now stand, if any person wishes to make a separate investigation into the comparative growth or development of any industry, say during the last five or ten years, he finds it almost impossible owing to the lack of information.

We have to study comparative statistics because it is comparative statistics alone that enable us to judge our future prospects. For this reason a uniform system is necessary. It would simplify the returns if the acreage in fruit trees was given in acres, as it is for vines and other crops, instead of the number of trees only. With regard to the shipment of produce, the car load of fruit is becoming each year a less definite quantity—the so-called ten-ton carload no longer exists, therefore the quantity of produce shipped should always be expressed in tons instead of under the misleading head of carloads. The new project is a long step in the right direction, and should receive a hearty welcome and every assistance from every individual who has the welfare of the county at heart, and also for his own interests. But there is no use doing a work of this kind by halves. There should be a county statistician charged with the duty of compiling not only agricultural statistics, but also those relating to minerals, oil, the dairy, irrigation and other matters. In order to keep such a record and make it complete and at all times up to date, it would require a man to devote his time to it all the year around. Such work, to be of real value, could not be compiled in two or three months each year.

The cost of such an office, compared with the value and usefulness of the work that would be accomplished, is not worth considering, not only in the interests of the large and ever-growing population engaged in the fruit and farming industries, but also as one of the surest ways of promoting development and prosperity.

WHEAT, rye, oats and barley are dependent on POTASH for proper nourishment to produce full, heavy kernels of fine milling quality, and strong stalks which do not lodge.

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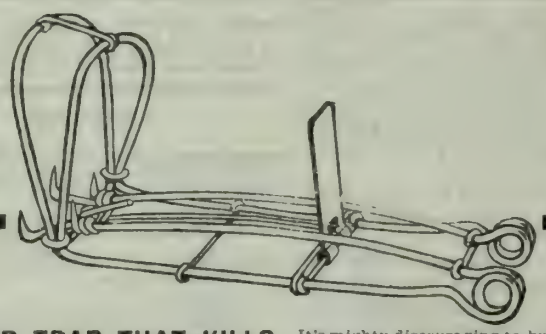
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Conveyances will meet all trains. Lunch will be served. For catalogues send to FRED H. CHASE & CO., Live Stock Auctioneers, 1732 Market St., San Francisco, Cal.



A GOPHER TRAP THAT KILLS. It's mighty discouraging to buy gopher traps that permit the gopher to escape after the trap has sprung. If you have used other traps you know that gophers crawl or are thrown out of them and the gopher that has been caught and got away will never be caught again. If you would take no chances with traps, you should investigate the merits of the

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This is a patented trap, embodying all the latest improvements. It is superior to the Single ring, as well as the Clutch and Claw Traps, for the double ring disables the gopher and holds it securely, allowing no possibility of escape.

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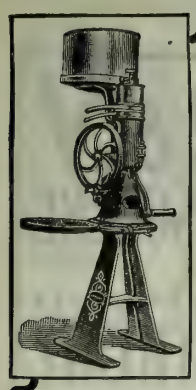
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THE DAIRY.

Summary of St. Louis Cow Test.

Mr. R. M. Gow, a well-known writer on Jersey cattle, makes the following new summary of the results of the famous cow test at the St. Louis Fair, reviewing the records of the four herds that took part in the demonstration. In surveying the records of the thirteen leading Jerseys, but one cow of another breed is encountered in Class A—the butter class—and but two cows of another breed in Class B—the milk class — these cows being Holstein-Friesians.

The entire Jersey herd for the 120 days of the test averaged per head per day as follows: Milk, 41.5 pounds; fat, 1.936 pounds; estimated butter, 2 28 pounds; solids not fat, 3.634 pounds; cost of feed, 24c; net profit, Class A, as butter producers, 33c; net profit, Class B, as milk producers, 45c. The average percentage of fat in the Jersey milk was 4.7; solids not fat, 8.8; total solids, 13 5.

The Holstein-Friesian herd averaged per head per day as follows: Milk, 53.4 pounds; fat, 1.832 pounds; estimated butter, 2.12 pounds; solids not fat, 4 239 pounds; cost of feed, 28⅗c; net profit, Class A, as butter producers, 24⅘c; net profit, Class B, as milk producers, 39c. The average percentage of fat in the Holstein milk was 3.4; solids not fat, 7.9; total solids, 11.3.

The Brown Swiss herd averaged per head per day in pounds as follows: Milk, 44.2; fat, 1.596; estimated butter, 1.87; solids not fat, 3.919. Cost of feed, 27.4c; net profit, Class A, as butter producers, 19¼c; net profit, Class B, as milk producers, 32¼c. The average percentage of fat in the Brown Swiss milk was 3.6; solids not fat, 8.9; total solids, 12.5.

The Shorthorn herd averaged per head per day in pounds as follows: Milk, 34.6; fat, 1.279; solids not fat, 2.979. Cost of feed, 22.1c; net profit Class B, as milk producers, 25c. The Shorthorns were not entered in the butter class. The average percentage of fat in the Shorthorn milk was 3.6; solids not fat, 8.6; total solids, 12.2.

In the various phases covered by the test the four breeds scored in the following order:

Quantity of Milk: Holsteins, Brown Swiss, Jerseys, Shorthorns.

Quality of Milk: Jerseys, Brown Swiss, Shorthorns, Holsteins.

Value of Milk: Jerseys, Holsteins, Brown Swiss, Shorthorns.

Net Profit: Jerseys, Holsteins, Brown Swiss, Shorthorns.

Per Cent Fat: Jerseys, Brown Swiss, Shorthorns, Holsteins.

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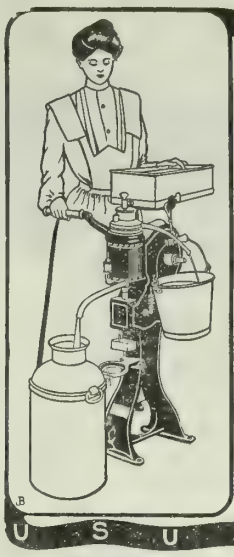
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100.00	deducted for his machine, leaves him
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"H. A. DRYER."

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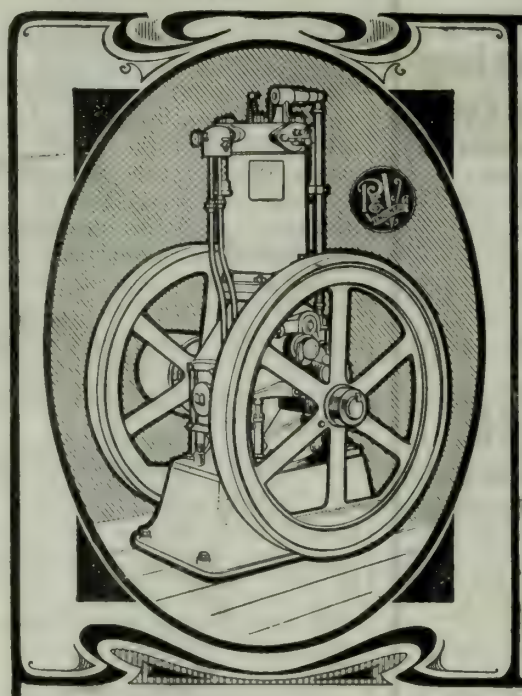


CUT OF SUCCESS SPREADER with left hand rear wheel removed, showing gear drive for running apron. Drum is driven by a steel pinned chain on right hand side. These are features peculiar to the Success alone and add greatly to its long life and light draft.

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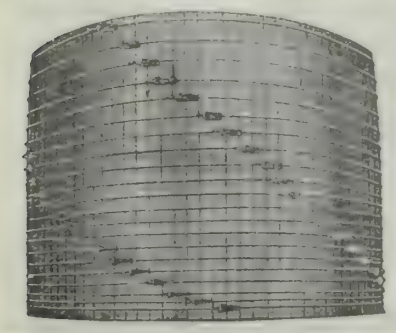
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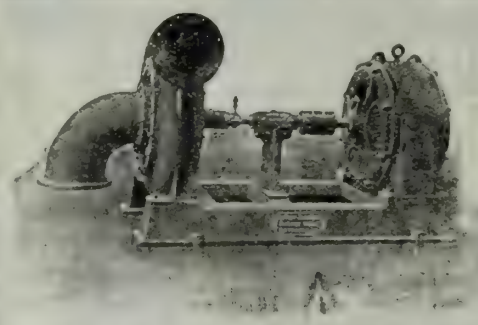
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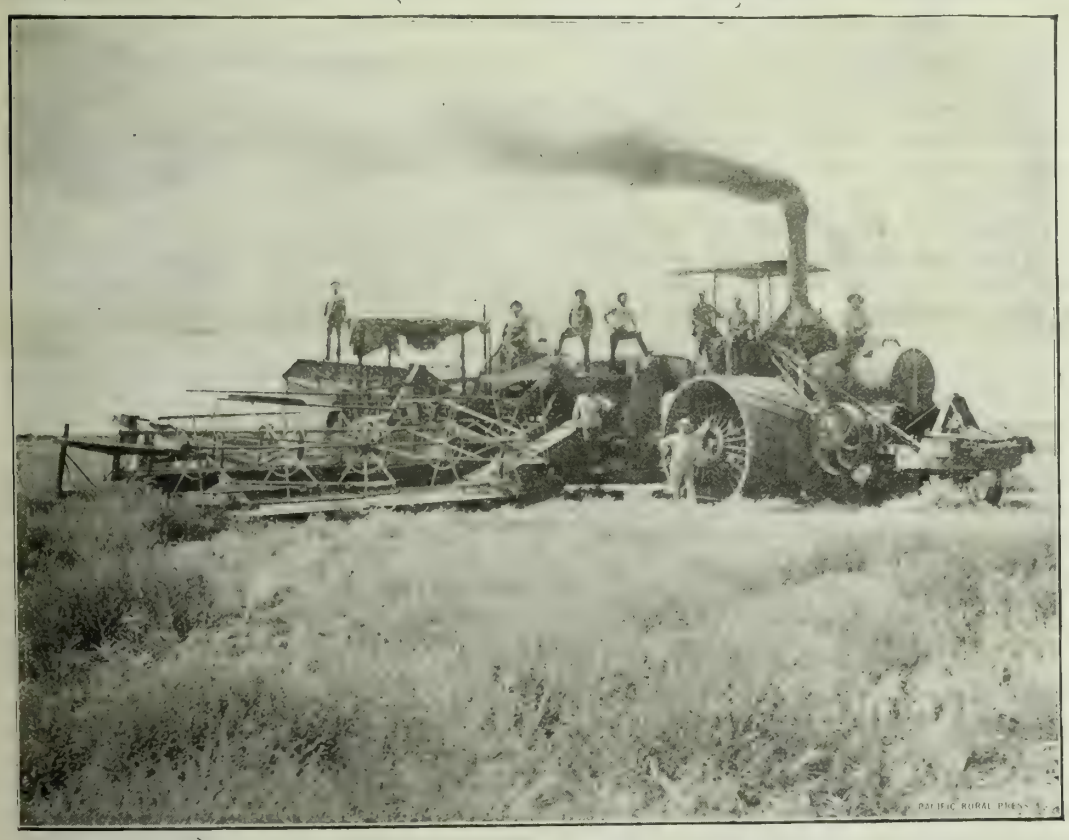
Vol. LXX. No. 12. SAN FRANCISCO, SATURDAY, SEPTEMBER 16, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Steam Farming in Kings County.

Our pictures illustrate a unique system of farming practiced in the great valley of California. The first glance at the group gives one a sort of marine impression, and the impression is not far astray, for there is presented a striking resemblance of these great steam machines to the immense creations for modern naval warfare. It is, in fact, steaming over an ocean of land, formed by agencies which gave it almost a water level, and of such area that, unless the air be quite clear, one can not see its bounding uplands, and the exclamation naturally suggests itself: "In the center of the valley and out of sight of land!"



A Morning Start With the Steam Harvesters in Series.



A Single Harvester Stopping for a Mid-day Rest.



Lake Outside the Levee

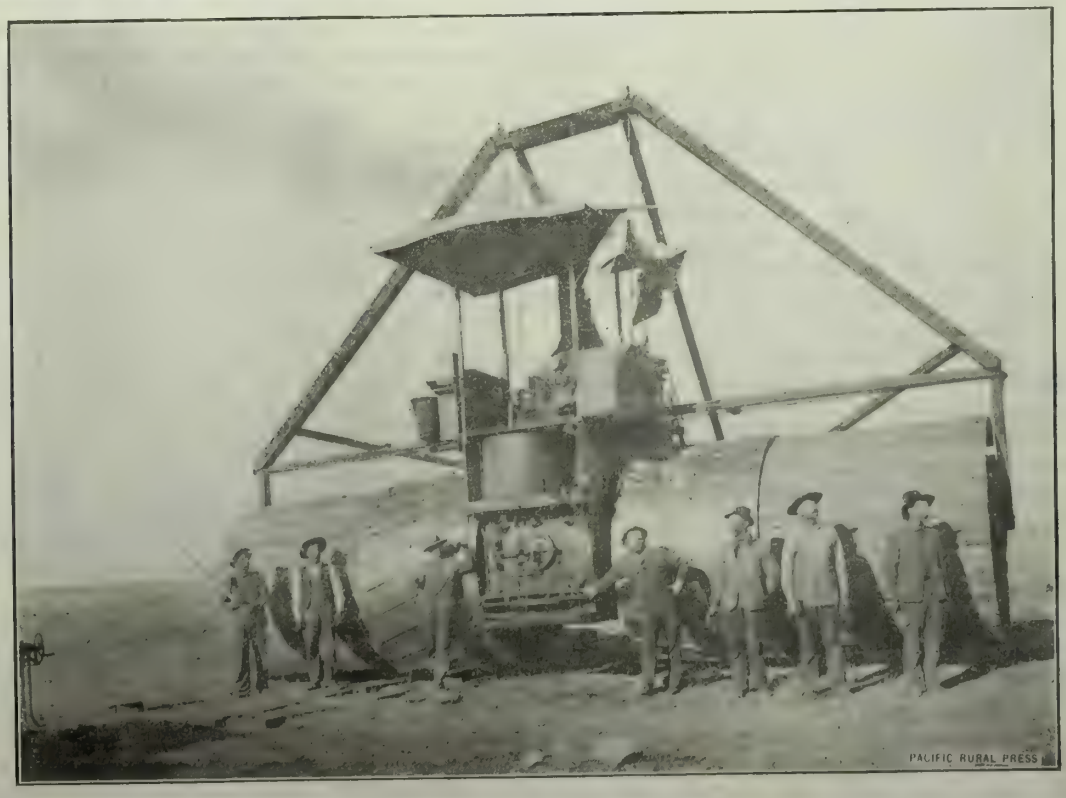


Land Inside the Levee.



Harvesters at Work Near Ditch Bank.

These pictures are from recent photographs taken on the lands of Barbour & Clawson, on the old Tulare lake bed in Kings county. Upon another page there is an interesting special article giving interesting facts about these great California farmers, the lands which they are farming and the great capacity of the machines which they are using. It is a notable fact that in taking out the water from the great rivers of the San Joaquin valley to make certain lands productive, another vast body of land was brought into production.



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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, SEPTEMBER 16, 1905.

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The Week.

There has been just enough rain in the bay district to effect an atmospheric change, but not enough to effect the dust nor to endure an hour of sunshine. It was change enough to influence some forms of life. It is wonderful, for instance, how susceptible the large snail (Limax maximus), really is. When we went out early in the morning, and while the feel of the shower was still in the air, these great black-embroidered beasts were moving out from all shelters to reach the new clover on the lawn—the first time we had seen them for months, although grass and earth were frequently wet from hosing. According to our observation, these creatures are cleaner observers of the weather than many of the higher organisms which are credited with prophetic power. We take their activity as indicating that the season has turned to rain, although common moisture-measures do not catch any. Fortunately, however, the turn of the season does not mean an immediate drenching. It comes first as a warning to advance work as fast as possible, and to be ready to cover anything which cannot be brought in from under the sky.

Our observation from various pilgrimages abroad in the State is that fall work is, as a rule, well advanced, though there is much value still exposed and much also that has not quite reached its harvest. Farmers are very busy and it will be several weeks yet before they can take a brief rest before the late fall and winter work will be pressing.

Wheat dealers are still apprehensive of the quantity of northern which may come this way, and are buying but little. The California crop is unquestionably small, and we shall need bread from the outside. Barley is doing something at full prices, although there is too much poor barley and it goes low. Futures in barley are active. Seed oats, both black and red, are rather scarce and corn is little called for. Rye is coming more freely and a good California article is selling well. Beans are quiet and in small supply. Hay receipts are decreasing, but supplies are large enough to depress all but the choicest. Bran and middlings are not abundant and are steady. Beef and mutton are a shade better, and lamb is also higher, while small veal declines. The butter market is higher, and lower grades doing better. Eggs show a considerable advance. Cheese is steady and unchanged. Poultry is coming in freely, but selling well owing to less amounts of Eastern stock. Potatoes are doing well and shipping demand good; onions are just the other way. Oranges are higher, lemons lower and grape fruit steady. Orchard fruits are in good supply, but the quality is good and the market active. Dried fruits are in good shape and prunes and raisins advancing. Nuts are also very promising. Honey is unsettled, buyers and sellers being wide apart. Hops are in much the same shape and growers are quite confident of their side of the issue. Wool is being subjected to a strong bear movement, but buyers hold that rates are still too high to suit them.

The State Fair closed at the end of last week with a better showing for interest and patronage than was expected. The Sacramento Union says that during the seven days there was a larger attendance than during any twelve days' session in the past five years. The daily average attendance was about 4500. There was also a larger percentage of paid admissions, the expenses were much less, and the profits were correspondingly greater. This is a good basis upon which to work for future improvement and extension which we hope will be made. The directors are to be congratulated upon what they have done under this year's disadvantages.

The stock display was the greatest agricultural feature of the Fair, and the attitude of the breeders confident and expectant. The greatest meeting at the Fair was the convention of the Breeders' Association, which was full of interest all along the line from practical breeding to advancement of California educational interests. This Association pulled the stroke oar in the race which ended with the attainment of a new farm for the Agricultural Department of the University of California, and it is ready to exercise a directing influence until the farm is located. It is certainly very promising for the cause of technical education when men of affairs, as most of the members of the Breeders' Association are, take such an active interest in educational progress.

Another important topic at the Fair was that of cereal improvement. The widest interest was taken in a large collection of various kinds of wheat which a Sacramento county farmer has grown this year with the idea of attaining varieties which will show high gluten under California conditions. The exhibitor was Mr. F. McMillan of Fair Oaks, Sacramento county, and he has been pursuing wheat tests for seven years. He inclines now toward a class of hard wheats, which the Union comments upon as follows:

Mr. McMillan exhibits seventeen varieties of Durum or macaroni wheats. Three of them come from the Agricultural College at Berkeley and fourteen from the Washington Government. Those from Berkeley are of Dakotan parentage. In every instance the improvement of the California grown is wonderful. Perhaps the Berkeley seed has produced the better results, but there is such an improvement in both classes that the difference is not worth mentioning, except in one or two cases where the Government seed did not do so well as expected. One remarkable fact is proved by Mr. McMillan's record, namely, the Government Durum or macaroni wheats matured in 110 days from the time of planting, were fully ripe in 110 days and ready for harvesting. Another thing about these wheats, they are so strong in the head that though left on the stalk the heads do not thresh out. Mr. McMillan believes these to be the coming wheats for California to plant along with its starchy wheats.

There is, of course, much still to be learned along this line, but Mr. McMillan's experience is of importance. There is special work now being done at two wheat stations provided for by the last Legislature, where most careful and systematic effort is being made to ascertain what wheats are best to secure strength, increase of crop, etc. California has not entered upon this work too soon.

QUERIES AND REPLIES.

Bisulphide and Fertilizers for Potatoes.

TO THE EDITOR:—Does the bisulphide of carbon treatment to kill worms in potatoes injure the potatoes for human food? I wish to give my land a liberal addition of acid phosphate and muriate of potash for potatoes. How much, when and how should it be applied? I shall plant in February or March. How much wood ashes would it require to take the place of the muriate of potash?—FARMER, San Diego county.

Bisulphide of carbon treatment does not injure potatoes for food. As soon as the potatoes are opened to the air the bisulphide, which is exceedingly volatile, escapes at once and completely. The application of acid phosphate and muriate of potash for potatoes is generally applied at the rate of 400 pounds of acid phosphate and 200 pounds of muriate of potash to the acre. As these materials are quite soluble, they should be applied just in advance of planting in a district where the rainfall is not apt to be great enough to leach them out from the soil. February is usually a better month than March for potato planting in southern California. It is not possible to state how much wood ashes would take the place of muriate of potash, because wood ashes are exceedingly variable in composition. As, however, muriate of potash contains about 50% of actual potash and wood ashes contain from 4% to 7%, it would probably require on the average a ton of wood ashes to be equivalent to the amount of muriate mentioned above.

Fern Land in Mendocino.

TO THE EDITOR:—I have a lot of land in the mountains of Mendocino, which land is free from stones; soil rather deep but light colored, although some of it is black, having a little tendency toward being sticky, which keeps it from washing. Also, this land generally lays in "flats." It is covered to a degree that is astonishing with ferns of the kind generally called "brakes." How will I get rid of these ferns, and what is the value, usually, of land that carries these—i. e., to what purpose should a person generally put such land? Can I get rid of these ferns by grazing the ground, and, if so, what stock should I have? Can this be accomplished best by burning the land over in the month of January, when everything is so wet that the fire would not spread?—OWNER, San Francisco.

Judging from your description, the Mendocino soil of which you speak must be quite desirable for field crops suited to the local climate, and to the introduction of pasture grass also. The killing of the ferns is rather a difficult operation. They can be grazed by goats and the land cleared up in that way, provided you think it is worth while to invest in this kind of stock and hold it on the land long enough; otherwise by your plan of burning over and then turning up the soil with a breaking plow, cutting out as many roots as possible, allowing it to lie fallow and continuing the operation of plowing and harrowing up roots, you ought to be able to get it into condition for grain the following year. Continued grubbing will keep the ferns under subjection, although they will have a disposition to start for a number of years. If you can use the land to advantage for a cultivated crop like corn or potatoes, its clearing will be much more speedily accomplished.

Root Trouble, Must Have Specimens.

TO THE EDITOR:—My tomato vines have died down gradually after a most vigorous growth and prolific yield of but short duration. Upon examination I find the roots are thoroughly diseased, having a warty growth throughout the entire system of roots. This growth renders the roots spongy and extremely bulky in appearance. Melons, squash, beans, carrots are likewise affected. All have made a vigorous early growth and abundant first yield. Water for irrigation is furnished by well and has a decided saline quality. Can you furnish information relative to the nature of this plant disease, also cause and means of treatment?—AMATEUR, San Diego.

Water containing an excess of saline matter will certainly destroy plants, but from what you say of the appearance of the roots it would seem that other agencies are involved. This cannot be determined without specimens. If you care to send samples we would be pleased to make an examination. It is not necessary to send particularly large roots, but smaller ones which have the warty growth which you mention as particularly characteristic. Such a package can come readily by mail, and we would be glad to pursue the matter further.

Sour Sap and Apricots.

To the Editor:—I own twenty acres of gray adobe land planted to fruit trees, now nearly five years old. The land directly adjoining the hills is planted to apricots on their own roots. What I understand to be sour sap has done increasing damage these three years in that part of the orchard. During May and June limbs wither and die back, involving more or less of the tree and killing some entirely. The sap breaks out on the affected parts. This sap smells somewhat sour when fresh. The trees look and evidently are very thrifty until this trouble overtakes them. Some few scattering apricot trees well away from this locality also suffered badly from the same disease. I dug up a few of the most crippled trees last winter and found the roots—unless the tree was entirely killed—looking much better than the top. There is a permanent spring a little ways above my place. The lay of the land would probably carry an underflow from this spring to the locality most affected; but no indication of such a flow is to be seen on the surface, and a pit 10 feet deep, sunk some years ago fairly within this locality and having affected trees right beside it, never had standing water in it. It may be well to mention, however, that water does not penetrate through this soil rapidly, and once wet down from the winter's rains, a little extra would go a long ways. I do not like to plant other varieties of fruit there, as it is a favorable place for apricots. Should I replant on other root, such, for instance, as Myrobolan plum root?—Grower, San Jose.

The symptoms are those of the trouble generally known among fruit growers as "sour sap," and this is due to standing water in the soil. The apricot root is particularly susceptible to it, and it generally occurs from heavy winter rains coming so continuously that the water can not escape by natural drainage through the soil. It also occurs from soil saturation in springy places; but, from what you say, it is possible that the evil can not be traced to the spring of which you speak. It is seldom due to that cause, because, unless the spring is a very large one, the water moves continuously through the soil, and under these conditions it is not generally injurious. The cure for the situation would be under-drainage sufficient to draw off the surplus water during the winter time and prevent it from standing in any place. The Myrobolan root will endure much more standing water than the peach or the apricot root, and it has been used considerably for apricots during recent years where such troubles as you describe have been encountered.

California Climate Must Go With California Methods.

To the Editor:—Have you any books for sweet violet culture and how to prepare hot beds for winter flowers, culture, etc.? If so, would be very thankful for any information on same.—Violet Grower, St. Louis, Mo.

There is no California book on violet growing, and as we do not grow our violets in hot beds and under glass in the winter, but grow them in the open air without special preparation of soil, or provision of protection, California experience will be of little value to you unless you can take over some California climate also. You can get a satisfactory book on Eastern violet growing entitled "Commercial Violet Culture," by B. T. Galloway. It is a comprehensive treatise on the commercial culture, growing and marketing of violets for profit and also contains much information of interest to the amateur who desires to grow violets in Eastern situations. The price is $1.50 postpaid and it can be ordered from the Pacific Rural Press.

Not an Olive at All.

To the Editor:—I send you by this mail some leaves and fruit of my olive trees, and wish to ask you if they are an edible variety. I bought the seed last year to plant for bee pasturage, and it is good for that; there is so much difference in leaf and fruit between mine and that shown in pictures of California olives that I am in doubt as to whether mine are edible. I bought them as the "Palestine olive tree."—Enquirer, Texas.

You are the victim of a seedsman who has more imagination than conscience. Mr. H. T. Hall, assistant botanist at the University, recognizes your specimens as being the sweet cassava (Manihot aipi). This plant is a long way from the olive, being in no way related to it. Instead of the fruits and seeds being edible, they probably contain prussic acid, which is extremely poisonous. The stems and leaves also contain this poison, but it entirely disappears after exposure to the sunlight for a few hours, and they then form an important food for stock. Furthermore, starch is often made from this plant, but it is not so valuable for this purpose as is the bitter cassava, the plant from whose roots tapioca is made.

Banana Growing.

To the Editor:—I desire information on the subject of banana culture, as I have a frostless, well protected plot in the foothills. I desire to put into bananas and desire information as to variety best adapted and care of same. You may know of parties who are pioneering with this fruit and acclimating same. I will join in this experimenting when I get such information as to what succees has thus far been made and what variety is best and later I would be pleased to report as to the success obtained. I have seen good sized bunches with large bananas; but I need all the information I can get to go at it intelligently.—Reader, Los Angeles.

Nothing has ever been done except in an amateur way, although many plants are growing in your immediate vicinity; for instance in the Cahuenga valley, in the Whittier district, and in other thermal situations. Twenty-five years ago there was a banana boom on and much confidence was expressed in the successful growth of bananas in the region about Florence in the lower lands of Los Angeles county, but that was entirely snuffed out by the low temperatures of 1888. You will, therefore, have to get track of any more reasonable enterprise by inquiry into your own vicinity. As for varieties which show most promise, you can get them from southern California nurserymen who have given particular attention to tender exotics for many years and have a stock of most promising varieties for sale.

Experience With Alkali in Colorado.

To the Editor:—I am interested in the matter of the treatment of alkali soil with gypsum, and want to ask you for literature upon the subject. We have hundreds of acres of alkali, and more or less of the hardpan which accompanies it, upon every ranch on the western slope in the State. One hundred and thirty acres of my 200-acre ranch, most of which used to grow good crops of alfalfa, will not now germinate a kernel of any kind of seed (except weeds, which grow 10 feet high) on account of alkali. There are orchards of forty acres in which there are spots of from a few rods square to one acre where a tree will not grow on account of the hardpan, which is as dry as a brick or a wet soggy mass. I have fifty acres of this kind of land in orchard ten years old, in which I planted (reset) 1000 of the trees four times on those hardpan spots and then gave it up. I have just made a location upon an, apparently, large body or deposit of stuff which I take to be gypsum. How can I cure alkali with it?—A. L. Kali, Colorado.

The University of California publications on alkali are out of print and it will be some time before they can reproduce them; for that reason we are not able to comply with your request for alkali literature. We may, however, say in a general way that no cure of alkali salt by gypsum alone is practicable. The function of gypsum is to form black alkali into white, which is a less corrosive form, but white alkali too is destructive to plants in any considerable quantities and, therefore, the material must be actually removed from the soil. The only way known to accomplish this is to arrange for underdrainage and then, by the use of fresh water in ample quantities for surface irrigation and giving the surplus free escape through drainage below, the alkali is washed out of the soil and its fertility established. As for the particular conditions which you describe, we have thousands of acres in California in the same condition. The alkali has risen with the water and been deposited near the surface by evaporation of the water. This condition must be changed by carrying the alkali down and out in the way mentioned. Our experience is that fruit trees will not grow on hardpan of the character you describe, unless you can practically break through this hardpan and furnish drainage. The recourse to gypsum, then, is really only palliative, and thorough and effective drainage is the only real remedy.

Alfalfa Growing.

To the Editor:—Kindly indicate any literature you have regarding the sowing and cultivation of alfalfa; also, as to the best varieties.—Beginner, Los Angeles.

There is no California book on the growing of alfalfa, as this subject is constantly under discussion in our agricultural newspapers and everything known about it comes to public attention in that way. The best collection of such information is contained in a report of the State Agricultural Society for 1900, a copy of which you may obtain by addressing the Secretary, Albert Lindley, Sacramento. There is practically only one variety of alfalfa in cultivation. Other varieties from Asiatic points are under trial, but no definite conclusions yet reached.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 11, 1905.

Alexander McAdie, Forecast Offical and Section Director.

Sacramento Valley.

Clear and warm weather continued most of the week and conditions were favorable for all farming operations. Grape harvest is progressing and considerable shipments are being made; the yield is much below early estimates, but a fair crop is being gathered in most places. Fruit picking is nearly completed and drying is progressing rapidly. Almonds will yield a very good crop. Oranges continue in excellent condition and give indications of a large crop. Olives are doing well. Hops in the Wheatland district are yielding an excellent crop, generally above the average; picking will be completed this week. Beans are looking well. Farmers are preparing to dry seed their summer-fallowed land. Feed is plentiful and stock are in good condition.

Coast and Bay Sections.

Warm weather prevailed most of the week, with fogs in the coast districts and generally clear in the interior. Light showers fell in San Francisco and vicinity Sunday night and Monday morning. Grape harvest is progressing and in some sections the yield is very good. Prunes are nearly all gathered and on the trays; the fruit is of good size and quality, but the yield is lighter than expected. Apples are of very good quality and the yield is excellent, especially in the vicinity of Hollister. Pears are below average. Cling peaches are yielding a good crop. Hop picking continues; the yield is about the same as that of last season. Beans are doing well and the outlook is good for a large crop. Grain sacking and hay baling are nearly completed. Sheep shearing is in progress in Sonoma county. Dry feed is still good and cattle are doing well.

San Joaquin Valley.

The weather was clear and warm during the week and conditions were favorable for all kinds of farm work. Raisin making is progressing rapidly; the yield of raisin grapes is reported considerably below average in some sections, but the percentage of sugar is above the average. Large quantities of grapes are going to the wineries and markets. Fruit drying and canning are in progress, and the almond crop is being gathered. Olives give indications of a good yield. Oranges are in excellent condition and prospects are good for a heavy crop. Large shipments of dried fruit, potatoes and hay are being made. The fourth crop of alfalfa is nearly ready for harvesting. Dry feed is plentiful and stock are in good condition.

Southern California.

Normal weather conditions prevailed during the week, and good progress was made in farming operations of all kinds. The heat of the preceding week caused considerable injury to beans on lands not plentifully irrigated, but no other damage has been reported. Grape harvest is progressing and heavy shipments are being made; the yield is below average in some sections, but the fruit is of excellent quality. Walnuts will be of good quality, but the crop will be somewhat lighter than last season's. Guavas are yielding an enormous crop, much above the average. Apples are in excellent condition and give promise of a large crop. Oranges have had a very favorable season and the outlook continues good for one of the largest crops ever raised. Harvest is progressing on beans and sugar beets. Grain thrashing and hay baling are still in progress.

Eureka Summary.—Cloudy and foggy along the coast; unusually dry and warm in the interior. Thrashing oats practically finished. Peas fair; potatoes light; other vegetables abundant. Apples are being marketed in moderate quantities.

Los Angeles Summary.—Much cooler week benefited crops. Citrus fruits are progressing nicely. Some dry plowing is going on. Thrashing is about finished; in some localities the yield is good. Irrigation water is plentiful.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Sept. 13, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	T	.02	.75	76	64	48
Red Bluff	.00	.00	.00	.43	94	56
Sacramento	.00	T	.07	.21	90	52
San Francisco	T	T	.08	.23	68	52
Fresno	.00	.00	.00	.15	100	56
Independence	.00	T	.09	.21	88	54
San Luis Obispo	.00	.03	.06	29	76	50
Los Angeles	.00	.00	.17	.12	80	52
San Diego	.00	.16	T	.11	72	58
Yuma	00	.02	.81	.59	106	62

CEREAL CROPS.

Colossal Farming on the Old Bed of Tulare Lake.

Written for the Pacific Rural Press.

The illustrations given on the first page of this issue are from the Barbour & Clawson ranch, located on the old Tulare lake bottom, about 20 miles south of Hanford, Kings county, Cal. This ranch, consisting of over 18,000 acres, only a few years ago was entirely covered by water. Barbour & Clawson, together with a few others, in 1899 and 1900 went to this lake and reclaimed in the neighborhood of 10,000 acres, since which time other districts have been formed. Stated in round numbers, there are now about 60,000 acres of this lake reclaimed.

The past year Barbour & Clawson farmed something in excess of 18,000 acres, which, up to the time rust struck the grain, bore the promise of a crop that would have probably been the record breaker of the State, as it promised twenty to thirty sacks per acre; but in this locality, as in nearly all sections of the State, rust cut down this yield to about one-quarter.

In harvesting this grain the past season the largest harvesting plant in the world was used, consisting of six of the Daniel Best Manufacturing Co.'s steam combined harvesters, and two of Holt Bros.' These machines cut, thrash and sack from 500 to 1000 sacks per day each, each sack containing about two and one-third bushels.

The crop the past season, owing to rust, which was prevalent throughout the western coast, as just stated, was quite disappointing. Nevertheless, Barbour & Clawson harvested something in excess of 70,000 sacks, which, as we understand it, was the most grain harvested on any one ranch in the State of California the past year.

Tulare lake thirty to forty years ago was the largest body of fresh water west of the Mississippi river, at which time it was 70 miles long and 40 miles wide, but has gradually been filling up with sediment, which is carried into it by its inlet—Kings river. In the past twenty years there have been numerous ditches taken from this river, and since that time the lake has been gradually growing smaller, until at the present time it barely covers to exceed two townships during the wet season, and this water is only from a few inches to 2 feet deep. The soil, being a sedimentary deposit, is without doubt as rich as any to be found in the world, and, being very level and varying not to exceed from 5 to 20 inches per mile, it is ideal for large-scale agricultural operations.

The levees around the above described ranch are 6 feet high and 30 feet wide, and are considered ample to prevent the water from encroaching upon this land. Barbour & Clawson and Mr. Blakeley several years ago also took out ditches, and at the present time own the controlling interests in these ditches, which are used to irrigate the lands.

As an illustration of the plant that is necessary to carry on such extensive farming, it would give one not acquainted with the machinery an idea to state that these harvesters cost $8300 each, besides which the water tanks, the oil tanks, the cook houses, plows, harrows, drills, etc., cost a great deal, and it is hardly necessary to say that a large capital is necessary, and that this season Barbour & Clawson had from 50 to 200 head of horses and mules constantly employed, with a force of from 25 to 100 men; that work never stops throughout the year; that as soon as the harvesting is over and the grain drawn to the warehouses ditch building, levee building and sowing for the next season begin.

FRUIT MARKETING.

The British Fruit Imports.

As an importer of fresh or raw fruit the United Kingdom (Great Britain, Ireland and outlying islands), says the Crop Reporter of the U. S. Department of Agriculture, ranks first among all the nations of the world. The growth of this trade has been little short of marvelous. From an insignificant quantity thirty years ago, it has steadily grown until in the calendar year 1904, it amounted, not including the recently rapidly increasing trade in bananas, to the enormous quantity, re-exports deducted, of 774,259 tons of 2000 pounds each; the value at the British ports of discharge, including cost, insurance and freight, was estimated, in terms of American currency, at $38,926,179. Add to this the imports of bananas, amounting net to 3,887,774 bunches, valued at $6,678,580, and the total value of all varieties of fruit, as laid down for consumption in the United Kingdom in 1904, was $45,604,759. The magnitude of this trade can perhaps be better realized when one reflects that it is equivalent in weight to about 26,000,000 bushels of wheat, and that it represents a value greater by a few million dollars than the entire annual foreign fruit trade of the United States, that is, than the export and import trade combined. The proportion of these imports supplied by the United States, though increasing rapidly, is not extraordinarily large; in 1904 all kinds from that source amounted to only 106,984 tons, less than 14% of the total quantity imported, exclusive of bananas; or as estimated by values, of the $45,604,759 worth of fruit of all kinds imported in 1904 only $5,110,453 worth came from the United States. The following statement shows the quantities, in 100-pound hundredweights, and the values, expressed in American dollars, of all kinds of fruit imported for consumption in the United Kingdom during each of the past five years, together with a statement of the proportion that has been furnished each year by the United States:

NET IMPORTS OF FRUIT INTO THE UNITED KINGDOM.

Calendar Year.	Quantities.*	Values.	Quantity from United States.
1904 ..... Cwt.	15,485,177	$45,604,759	13.8%
1903	16,202,428	47,286,058	17.2
1902	14,751,338	42,279,291	12.0
1901	12,129,755	35,414,795	7.4
1900	12,208,654	34,465,559	8.6

*Bananas included under values but not under quantities.

The kinds of fruit imported in greatest abundance are oranges, apples, bananas; the three kinds combined represented in 1904 almost 60% of the value of the total trade. In the order of their quantitative importance the bulk of the remaining imports consists of lemons, grapes, almonds and other nuts used as fruit, pears, plums and cherries; and the magnitude of the trade in these last-mentioned products is seen in the fact that in no case do the imports fall short of $1,000,000, and in some instances, as in grapes and nuts, they exceed $3,000,000 a year. As smaller features of the trade, over half a million dollars' worth of currants and gooseberries are imported annually; France and Holland ship in about a quarter million dollars' worth of strawberries, and there is a lesser trade in peaches and apricots, a very small proportion of which come from California. Miscellaneous fruits of divers kinds are also imported to the value of $1,000,000 to $2,000,000 a year.

Oranges.—Oranges are consumed in the United Kingdom to the extent of $10,000,000 annually; whether quantity or value is considered, they constitute, on the whole, the most important single item of the import fruit trade. The function of supplying this valuable market is monopolized largely by Spain, whence comes regularly from 85% to 90% of the annual supply; a few other countries of southern Europe furnish the bulk of the remainder. Oranges from the United States are luxuries upon the English markets. Practically no Florida oranges are shipped hither, and the supply of California navels—though these are strikingly superior in size and attractiveness of appearance to oranges from European sources—is very limited, and they are usually held at prices prohibitive for the average consumer. However, the demand for California oranges, though small, is rapidly increasing; in 1900 the imports were only 4258 hundredweights, valued at $14,122; in 1904 they amounted to 13,223 hundredweights, with an estimated value at British ports of $53,225. The total consumption of oranges in the United Kingdom for the past five years, as indicated by the imports from all sources, less the small quantities re-exported, is shown below in hundredweights, of 100 pounds each, with values, including cost, insurance and freight, expressed in American dollars:

NET IMPORTS OF ORANGES INTO THE UNITED KINGDOM.

Calendar Year.	Quantities.	Values.
1904 ..... Cwts.	6,277,294	$10,166,999
1903	6,536,490	10,408,558
1902	6,870,286	10,771,005
1901	5,641,645	9,761,235
1900	5,399,100	9,653,403

Apples.—Apples, though imported in smaller quantities than oranges, are increasing much more rapidly than the latter fruit in popular use. Within six years the British consumption of foreign apples was trebled; from 3,432,228 bushels (1,716,114 hundredweights) in 1898 imports grew almost steadily until in 1903 they were 10,051,230 bushels (5,025,615 hundredweights). And the decline in supplies in 1904 was due not to weakened demand, but to a large crop in the United Kingdom. Weight for weight apples represent higher values in the United Kingdom than do oranges; as laid down at the British ports their respective average values for 1904 were $2.18 and $1.61 per hundred pounds; and, though consumption of the former fruit was less by 2,000,000 hundredweights than that of the latter, in value it amounted to practically the same, or nearly $10,000,000.

Apples imported for consumption in the United Kingdom during each of the past five years have been as follows, quantities being given both in hundredweights of 100 pounds each and also in 50-pound bushels, and values (including cost, insurance and freight) being expressed in units of American denominations:

NET IMPORTS OF APPLES INTO THE UNITED KINGDOM

Calendar Year.	—Quantities.— Cwts.	Bushels.	Values.
1904	4,082,220	8,164,440	$9,915,868
1903	5,025,615	10,051,230	13,263,612
1902	3,151,392	6,302,784	9,227,901
1901	2,026,084	4,052,168	5,661,243
1900	2,364,133	4,728,266	5,894,702

For foreign apples the English people are dependent almost wholly upon four sources of supply, the United States, Canada, Continental Europe and Australia. The trade, though not monopolized, is largely controlled by the two first-named countries, from 80% to 85% of the total supply being shipped annually from these sources. The United States does the larger share of the business; of the foreign apples consumed in the United Kingdom during the past three years about 51% have been drawn from the United States and 33% from Canada. The bulk of the remainder was furnished in proportions of 8% and 6%, respectively, by Continental Europe and Australia. This heavy trade of the United States and Canada represents the only fresh fruit of any kind consigned to this market in at all important quantities by either of those countries.

American apples—the general designation for all apples from the two great producing countries of the Western Hemisphere—begin to arrive in quantity in early autumn and practically supply the market until the following April, meeting with little serious competition during the important apple-consuming season from either native or other foreign fruit. Excellence of quality, regularity of supply and an abundance of different varieties enabling dealers to fill orders satisfactorily and promptly, have been the chief factors in building up and giving stability to the trade. In recent years, cold storage has also contributed much to an equable distribution of the fruit, thus preventing breaks in prices from gluts of the market.

Apples from other foreign sources come upon the market at a different season of the year. The Australian varieties—mostly from Tasmania and not picked until January or February—reach the market in April and continue coming in until July, a period, it may be noted, when apples from other sources are in very limited supply. Fine in flavor, rich in color, of good sizes and well liked, this fruit commands high prices, generally being ticketed on retail fruiterers' stands as "Australian," at from 4 to 6d (8 to 12 cents) per pound; but these prices are of course largely due to scantiness of supplies at this season of the year from competitive sources. The Australian varieties are all "dessert," as distinguished from "cooking" apples. They come over in boxes of about a bushel capacity, very neatly and compactly packed. The supply, though not large as compared with that from America, is growing fast. From the small quantity of 98,278 hundredweights (196,556 bushels), valued at $552,080 in 1900, it had increased in 1904 to 374,034 hundredweights (748,068 bushels), valued at British ports at $1,638,945. Immediately following upon the marketing of the bulk of the Australian crop arises the demand for the apples of Continental Europe—for early varieties chiefly from Portugal, France, Belgium and Holland; these serve to supply the market until home-grown apples again begin to appear. The first English apples—of cooking sorts and partially ripe—usually come upon the markets the latter part of July.

It may be of interest to add that on the wholesale fruit markets, of which the Covent Garden market in London is by far the most extensive, all fruit is sold by the package without guarantee of measurement or weight, that is, apples by the barrel and box, oranges by the box, berries by the basket and crate, etc.; but at retail, excepting rural districts where customs vary greatly, fruit of all kinds is sold by the pound, excepting only oranges, lemons and bananas, which are sold by count.

Bananas.—Next to oranges and apples the kind of imported fruit that appeals most strongly to English taste is the banana. The consumption of this fruit, though not yet one-seventh that in the United States, is rapidly increasing. The supply, which a few years ago was drawn almost wholly from the Canary Islands, has now been augmented by an almost equally heavy consignment from Costa Rica and the West Indies. This is the only fruit imported into the United Kingdom the receipts of which are not obtainable in terms of weight. Below is given a statement showing the total number of bunches imported for consumption during each of the past five years with c. i. f. values, as expressed in American currency:

NET IMPORTS OF BANANAS INTO THE UNITED KINGDOM.

Calendar Year.	Quantities.	Values
1904 ..... Bunches	3,887,774	$6,678,580
1903	3,063,768	5,763,770
1902	2,791,988	5,124,205
1901	2,221,054	4,241,048
1900	1,276,806	2,641,453

Evidently the great increase in the demand for fruit in the United Kingdom directs itself largely to apples and bananas. This is apparent from all points of view. From figures given in this article it may be seen that the increase in the national bill for oranges from 1900 to 1904 was only $513,596, but, to satisfy the rapidly growing taste for apples and bananas, there was necessary meanwhile an extra expenditure, respectively, of $4,021,166 and $4,037,127. Looked at from another view point, the quantity of oranges consumed in 1904 was greater than that in 1900 by only 16%, while that of apples increased by 72%; and the number of bunches of bananas in 1904 exceeded that four years before by 204%. Moreover, the same general conclusion holds good when all kinds of imported fruit are taken into consideration; there was an increase from 1900 to 1904 in the total consumption of fruits

of all kinds amounting in value to $11,139,200; and of this $8,053,293, or upwards of 72%, represented the advance in the combined consumption of apples and bananas alone.

Other Fruits.—In fruits other than oranges, apples and bananas, there is an import trade that is now worth annually from $18,000,000 to $20,000,000. This consists largely of products from the south of Europe—grapes from Spain and Portugal, lemons from Sicily and Spain, and almonds and other nuts from France, Spain and Italy; lesser quantities of cherries, currants and gooseberries are also shipped in from the northern latitudes of France, Belgium and Holland. The following statement shows the quantities and values of these products imported for consumption in 1904, quantities being given in units of 100 pounds each, and c. i. f. values in American currency:

NET IMPORTS OF VARIOUS FRUITS INTO THE UNITED KINGDOM IN 1904.

Fruits.	Quantities.	Values
Lemons, limes and citrons.....Cwts..	1,083,144	$1,942,775
Grapes	858,434	3,604,553
Almonds	113,951	1,737,788
Other nuts	708,455	2,419,565
Pears	599,170	2,446,863
Plums	552,765	2,558,772
Cherries	292,010	1,556,423
Currants	130,914	700,693
Gooseberries	40,561	102,313
Strawberries	38,667	241,112
Apricots and peaches	14,900	156,423
Other fruits	692,692	1,376,032
Totals	5,125,663	$18,843,312

Of the $18,843,000 worth of fruit above enumerated, only the small quantity of $265,341 worth came from the United States. Of this $175,310 worth consisted of pears, $56,189 worth of plums, $4812 worth of apricots and peaches; the small balance was made up of nuts and miscellaneous fruit.

French and California Fruits in France.

Consul Thackara, writing from Havre, sends a timely report on the fruit outlook in France. He says there will be a good demand for apples and apricots, and that careful packing and honorable dealing are sure to secure for American fruit dealers a large part of French trade. He writes:

It is somewhat early to make an accurate prediction as to the bulk and quality of the coming French fruit crop, but it may be of interest to the growers and exporters of American fruit to learn what are the prospects at this time for securing an outlet for the sale of their products in the Havre market. Unless there should be unusually unfavorable climatic conditions during the next six weeks the chances are that the French prune crop will be above the average, as all reports from the growing districts are satisfactory. The large sizes, however, are not abundant, and there may be some business done with the United States in 30–400 and 40–500, provided the American prices become lower. They are too high at present to compete with those of the native grown fruit.

Prices of French and American Prunes.—In the following table are shown the prices at which French prunes of the 1905 crop were offered to grocers July 31 last, with the parity of American prices—that is, American grades that under existing conditions would have to be offered so as to compete with the French grades set over against them—and sizes obtained by deducting from the French prices the customs and other charges, and the prices of American prunes f. o. b. Havre, which were quoted on July 31. The prices are for 100 kilograms (220.46 pounds):

French Prunes— Sizes.	Value.	American Equivalents— Sizes.	Value	American Prunes— Sizes.	Value.
50–55	$16 98	40–50	$13 51	30-40	$16 31
60–65	12 74	50–60	9 65	40-50	14 42
70–75	10 81	60–70	7 72	50–60	13 32
80–85	8 88	70–80	5 79	60–70	12 35
90–95	7 72	80–90	4 825	70–80	11 39
100–105	6 56	90–100	3 86	80–90	10 42

The difference in the classification of the sizes of the French and American prunes is owing to the fact that the French prunes are sized by the number of prunes in a French pound, or half a kilogram, which equals 1.1 English pound, and the American prunes according to the number of prunes in an English pound.

From the above table it will be seen that the local importers, in order to compete with the present prices of French prunes, would have to purchase the American fruit f. o. b. Havre, 40–50's for example, at $13.51 per 100 kilograms, while the price quoted by the American exporters July 31 last was $14.42. In the smaller sizes the difference in prices is still more marked.

Comparatively large stocks of prunes have been left over from last season. Accurate statistics are not available, as most of the fruit is stored in private warehouses, but reliable merchants estimate the amount of American prunes in Havre at the end of July at from 15,000 to 20,000 boxes, mostly of the crop of 1903. It is supposed that the producers, merchants and brokers in the interior of France are carrying over large stocks of native prunes of the 1904 crop.

Apricot Crop Promising.—The prospects for a good French crop of apricots are favorable, but owing to the low prices of the American fruit now ruling in the United States purchases have already been made for importation into France, and there will probably be a fair demand for American apricots during the coming season. There are no stocks of apricots left over in Havre from last year. The prices for American apricots f. o. b. Havre, on July 31 last, per 110.23 pounds in 12½-kilogram (27.55 pounds) boxes f. o. b. Havre, were: Choice, $16.21; extra choice, $17.37, and fancy, $19.30 for August and September deliveries.

Imports of Dried Fruits.—In the following table are given the imports of fresh and dried apples and other dried fruits into France for consumption during the first six months of the last three years. The bulk of the dried fruit was of American origin. The figures represent pounds:

Fruits.	1903. Pounds.	1904. Pounds.	1905 Pounds.
Fresh apples and pears	10,895,000	7,629,000	4,211,000
Dried, for table use (evaporated)	1,005,000	3,156,000	315.000
Chopped apples, for cider making	11,740,000	16 496,000	1,908,000
Dried prunes	17,090,000	20,165,000	91,900
Other dried fruits, mostly apricots	4,573,000	5,477,000	4,181,000

Advice to American Shippers.—It will be readily seen from the above table that, owing to the unusually abundant fruit crops in France last year, the importations of all American dried fruits showed a great falling off, especially those of dried prunes.

Light-colored apricots, technically called "bright goods," are those most wanted in the French market.

Care should be taken that the boxes in which prunes and apricots are packed are of sufficient strength to stand the handling they receive while being transported to France.

Those Fruit Box Brands.

The Supreme Court, sitting in San Francisco, has declared as unconstitutional the law which provided that all packages of shipped fruit must bear in inch-high letters the name of the county and immediate locality where the contents were grown.

The provision was ostensibly aimed at stopping the shipment of bad produce from localities famous for excellent products, but was really in the interest of certain sections that have won good reputations without necessarily having surpassed other parts of the State in producing ripe fruit.

The Court holds that the law is unreasonable, and in rendering its decision against the State says:

"It has come to be well recognized that the liberty and the pursuit of happiness in which the individual is protected by the Constitution of the United States and of the State applies fully to his right of contract, his right to follow a legitimate vocation, untrammeled by unnecessary regulations, as it does to the freedom of arrest or restraint of his person."

THE IRRIGATOR.

A Railway King's Views on Irrigation.

By Mr. James J. Hill, President of the Great Northern Railway, at the Irrigation Congress in Portland.

A common and natural error of those interested in the great work of irrigation is the belief that there is little further need of popular instruction on the subject. The practical steps have been taken. The first great campaign of education, which those who took part in it remember so well, the struggle to awaken and stir to activity the national sense of need and of opportunity, have been carried to a successful close.

The Irrigation Act stands upon the statute books of the nation and not a hand would be raised to-day to strike it thence. Subject only to such amendment as may render it more effective, it outlines a national policy that is to bless and fructify through generations.

The splendid fund has been accumulated and additions to it are being made through the wise provisions for its replenishment. The engineer corps are in the field, surveys are being made, dams are rising, ditches are being opened, and already the wilderness is becoming a storehouse of natural treasure. What need, then, that the friends of irrigation should take note of the hour, should continue their efforts, should meet as they have done here to-day, to take counsel together as if there were still a hostile or ignorant public sentiment to conquer and a road to be hewn to the national desire?

Work Still to Be Done.—The work still to be done, its necessity as well as its beneficence when all of us who are gathered here shall have passed beyond, is the unintermitted presentation of the value of irrigation, of the need of it, of its unexplored possibilities, of its relation to national growth and individual life, until this shall have been made a permanent part of the common stock of knowledge; not the possession of a band of enthusiasts or a picked body of scientists and specialists, but as generally disseminated as the familiar plowing and reaping that have been done by man since immemorial time.

Of all the actual or suggested activities of our time, of all the wide aims that workers and lovers of their kind have in view, none will take precedence of the reclamation of those vast spaces of our country now closed to productive activity. None is better worthy of the labor and the resources set at its disposal.

Era of the Severely Practical.—We are already entered upon an era of the severely practical. The speculative rage has wrought a certain measure of disenchantment. Industries and ideas are being established upon a rational basis for industrial propagandas and economic theories. A glowing prospectus is no longer sufficient enticement for a liberal investment, nor are people mad to rush upon the sword point of poverty or disgrace for some abstract theory.

What the friends of irrigation propose is something more definite and not less impressive than that which has carried the great explorers, discoverers, adventurers of the world through innumerable perils. The discovery of America could by no means have meant as much to the world of the century of Columbus as the addition to our heritage of homes and means of maintenance for 10,000,000 people not now endowed with an acre of soil. Yet that would be a mean and insufficient measure of what may easily be accomplished. The miracle is within reach.

Soil Unfailing Source of Wealth.—The need of this new era for home-building is immediate and pressing. There lies the great source of wealth which alone may be and must be drawn upon without intermission for man's needs. The forest falls, the mine is depleted of its precious contents, even the seas might, if searched too severely, cease to give tribute; but the soil is the last, unfailing resource. The man who is drawing from the earth food for himself and others is the foundation of all advancement, as well as all prosperity. Make way for him.

The need of more land space for the homebuilder is created by the rapid settlement of the country, and precipitated and aggravated by the insane policy of land laws which tend toward the exhaustion of the public domain by the land monopolist and the speculator.

Except in a few selected spots where the influence of the railroad companies as colonizers has been exercised to secure actual settlement upon their lands, the influx of actual settlers is so small as scarcely to be reckoned with. Those who go upon Government land in our day for the purpose of making homes are a handful.

Doubtless Congress will consent to amend the land laws by the repeal of those employed now solely to increase the holdings of the dishonest man and to give rise to such scandals as have lately thrown shame upon the American name, but if the future is to be judged by the past, this access of wisdom and of honesty will come only when there is no longer any land left that is desired by the lumber king or the cattle baron.

The density of the population in the whole country from the Missouri river to the Pacific is scarcely three to the square mile. In the irrigated lands of Utah there are 300 persons to the square mile supported in a comfort that leaves little to be desired.

Capacity for Millions.—If we leave old world standards and disregard also the most desirable sections of California, where there are as high as 500 persons to the square mile prospering on irrigated farms, if we say 250 persons to the square mile, a density that will soon be reached in some of our Eastern States, and assure that 100,000 square miles have been made cultivable by irrigation, we have a capacity for 25,000,000 people additional, all supported by land now regarded as outcast, and all contributing by the conditions of their life as much to social advancement and industrial improvement as to the aggregate of our wealth and the volume of our trade.

Viewed in another aspect, our national development must look to irrigation for succor from submergence. It has been seen that available land areas are constantly dwindling. The population of the United States has doubled at the rate of about once in thirty years.

Desirable as it is that the agricultural element of our population should be reinforced, it is equally obvious to those at all familiar with the facts of our national growth and commerce that there is no other resource for the incomer, even if he were otherwise minded, than the farm. Until national policies shall have been reversed there is no opportunity for any considerable expansion of markets for our manufacturing industries.

Trade Relations With the Nations.—Already our workshops are occupied by those whose prevailing rate of wage will not permit their product to come in competition with the product of other nations in the markets of the world. How shall we add 1,000,000 or more annually to their numbers and dispose of their product in a market where, to put it mildly, we are not at present gaining ground and where the alertness of our rivals and our own insensibility to the necessity of cultivating trade reciprocity threaten to surround us with a narrowing circle.

Where irrigation prevails agriculture knows three admirable conditions—certainty, abundance and variety.

On the social side, a typical community on irrigated land describes itself with pride, not by measuring the

size and wealth of its cities, for it has none, but by saying: "With a rural population of between 6,000 and 7,000 people, living upon 35,000 acres of irrigated lands now in cultivation, we support 15 churches and 32 schools, all modern and thoroughly up-to-date in their equipment.

Farms Should Be Small.—The irrigated farm should be small; the best limit of size under ordinary conditions being 40 acres, the maximum that should be allowed anywhere, 80. The feature of the Reclamation Act which permits holdings of 160 acres should be changed. It was a concession originally to the ideas that have become fixed by our public land policy in the past, where a quarter section was the unit. It was also, perhaps, consciously or unconsciously, a concession to the desire to accumulate more acres than can be tilled profitably, which has injured agriculture in this country immeasurably. Because of the size of the farms, intensive cultivation is a thing almost unknown, and effort is shorn of half its reward because it is scattered over too wide a surface.

The important works to be done, then, by irrigation advocates seem to be these: Insist that the Government go forward conservatively but steadily in the path marked out.

Vicious Land Laws.—To hasten unduly the reclamation of the arid area, to spend immense sums in advance of the spread of general knowledge and appreciation of irrigation and its benefits would be only to lead the way to the exhaustion of this, our last and most precious resource, by a careless disposition of them to the first comer. Keep on demanding the repeal of the vicious and fraudulent land laws still in force, by which all our lands are dissipated; by which the pressure of population is more severe and by which a large quantity of lands that might be irrigated later will be found to have passed into private ownership.

Inculcate everywhere the gospel of the small farm. The "get rich quick" feature is just as objectionable in farming as in a real estate boom or in banking.

To the transportation agencies of the whole country, and especially to those of the West, the subject is one of great importance. They were quick to realize this and to act upon it. The great railroad companies were pioneers in the campaign of education out of which emerged the first law to be passed by an American Congress in aid of irrigation.

Railroads and Irrigation.—The railroad of today which is managed with intelligence and efficiency sees in the promotion of settlement the assurance of its own prosperity. The mere moving of an already existing tonnage, complicated as that may be, is a small part of the problem.

Broad and strong and deep are the foundations that we are laying here to-day if we but cement them with sincerity and with courage. Not by the term "new empire," which we so often borrow from the vocabulary of an unworthy ideal, but as a "new republic" shall we speak of the land of homes that is prefigured wherever hammer is ringing on the masonry of dams, and flumes are racing from the mountain to the plain, and the water is glancing in the long canal as it speeds toward the handful of earth that has waited its coming for millions of years in order that the most wonderful and beautiful of all miracles, that of the growth of life, may be repeated and continued forever.

THE BOTANIST.

Answers to Inquiries.

By Mr. H. T. Hall, Assistant Botanist of the University of California Agricultural Experiment Station.

BURGRASS—LIKELY TO BE A PEST.

To the Editor:—Herewith I hand you a specimen of a grass that is making its appearance along the ditches and from there spreading to the alfalfa fields of this vicinity. I regard it as a serious menace to the farming interest, and should like to know what it is, its habit and what measures to adopt to exterminate it. The sharp spines on the seed burrs would be dangerous, I should think, if mixed with hay and fed to stock. It is a new pest in this locality and I think a very dangerous one.—L. S. Harman, Kern county.

The plant is burgrass (Cenchrus tribuloides), a native of Mexico and South America and a common introduced weed in the Mississippi valley and East, but is rare in California. It is also known as hedgehog grass, cockspur grass and sand bur, these names referring to the spiny heads which part readily from the stem and cling to clothing, passing animals, etc. In wool-producing districts these burrs get into the wool and greatly reduce its value. In farming districts generally it proves itself a nuisance in pastures and especially by getting into hay. Since it is now only getting a start in Kern county, every effort should be made to eradicate it. It has probably been brought in by imported sheep or by the railways, and is to be looked for in sandy places along streams, ditches, ponds, etc. The only method of eradication is by pulling or cutting (the root is annual) and burning, or, if possible, burning where it grows when it becomes dry. In case it gets a start in fields, cultivated or hoed crops should be grown.

THE STOCK YARD.

Alfalfa-Fed Beef.

Alfalfa feeding to both cattle and sheep is becoming quite a feature throughout Colorado and the West, says a writer in the Breeders' Gazette. We have been experimenting in feeding steers for eleven years and have discovered that the locality in which the alfalfa is grown has a great deal to do with the results. The climate and soil, it appears, have also much to do with it, and last, but not least, the time that it is cut and the manner in which it is put up. We are thoroughly convinced that when alfalfa hay is fed without grain the only kind of steers to feed are aged steers. By this I mean three-year-olds and up. The younger steers do not fatten as fast while growing and to get the results on the latter some grain is necessary.

The kind of steers that have given the best results are well bred, fleshy three and four-year-olds (in fact, just as fleshy as possible—the more flesh they carry the better will be the results) fed for from 200 to 240 days. These steers when shipped have been weighing between 1400 and 1500 pounds on the river markets, and have sold evenly with the corn-fed natives. In 1902 in the month of June we sold 100 steers on the Denver market for $6.55 per hundredweight, weighing 1434 pounds. In 1904 in the same month we sold a trainload in Kansas City for $5.45. This year on the 31st of May we sold two carloads of the same kind of cattle in Denver on a bad market for $5.25, weighing 1487 pounds, all coming four years old. I do not think that these same results could be obtained in all localities, as the alfalfa in our section seems to possess greater feeding qualities than in the majority of localities.

As an experiment, in 1904 we fed three long yearling steers taken right off grass and fed for 100 days on corn chop and alfalfa. These steers averaged 10 pounds of corn chop and about 15 pounds of alfalfa per day. They sold in Denver the latter part of February, 1904, for $5.12½ per hundredweight and weighed 1430 pounds. The best steer dressed 65% after deducting 2% from farm weight, the next 63¼% and the youngest 60¾%. These had never had a pound of grain previous to the 100 days' feed before mentioned. These steers were weighed at home, full, and the average shrink in Denver was only 20 pounds. I mention these facts merely to demonstrate what can be done with alfalfa alone and alfalfa with grain in our section of the country, and I think I would make no mistake in asserting that we can finish cattle for market just as well and just as cheap as, if not cheaper than, can be done anywhere in the United States. I admit that our corn costs considerably more, as we have to ship it in from the Eastern States, but along with alfalfa as a roughness we feed so much less grain than our Eastern competitors that it more than offsets the difference.

With regard to the gains per day on such cattle as I have mentioned on alfalfa alone, by weighing in and weighing out under like conditions, taking one year with another, it has varied from 1¼ pound to 1½ pound per day on a 200 to 240-day feed.

There are many different methods of feeding alfalfa throughout the West. In the majority of cases in our section the hay is stacked in the feed lot, where the cattle can be fed, and a rack built clear around the stack. The rack or fence is built with heavy poles about 27 inches from the ground, then a space left from there to the top pole, with posts supporting the latter about a rod apart, leaving plenty of space for the head and neck. The hay is thrown from the top of the stack morning and evening. The amount to be fed at each feed is soon ascertained, so that about the right ration is given, neither too much nor too little at each feed. Every morning before feeding any poor hay or rubbish left over is cleaned out and given to stock cattle. The idea is to have good, clean, fresh hay in front of the cattle at all times, and if any poor hay is left they are liable to waste a certain amount of the good hay. A good many feed also in upright racks, hauling the hay once or twice a day from the stack. I do not like this method as well as the other, as in the first instance the cattle get all the leaves, whereas in the last-mentioned method a good many of the leaves are lost by reason of the fact that the hay is handled more, and the more it is handled the more leaves are lost.

Alfalfa Hay for Horses.

An experienced Montana horse feeder gives his conclusions in the Breeders' Gazette as follows: It seems to be the general opinion that alfalfa hay is not a good horse feed, and especially for horses on the road or for fast work. I would like to correct this, as alfalfa is too good a feed to be condemned for any purpose. The fact is nearly every one who feeds horses feeds them too much hay. If you give a horse about what alfalfa he should have, say twelve or fifteen pounds per day for horse of 1000 pounds, and a fair grain ration, you will find he will travel just as far and just as fast as with other kinds of hay, and be in better condition. But if you allow your horse to eat thirty to forty pounds per day, which they will eat of alfalfa if you give it to them, you are sure to have a horse that is short-winded and sloppy. One of the famous trotting horses on the Eastern turf with record below 2:03 is fed alfalfa as his only hay.

A good ration for the horse of any kind of feed is about one pound of grain and one and one-half pound of hay to each 100 pounds of horse, and this would apply to alfalfa. In fact, the horse should do better on the alfalfa than with other hays, and with less grain.

This might be the opportune time to say that the majority of farmers feed too much hay of all kinds to their horses. In fact, the horse barn to my notion is where one of the great wastes of the farm can be found. Horses would travel better, stand more work, and be healthier if fed less hay. Most farmers give them all they can eat and aim to have them waste enough to make their bedding, when they have plenty of good straw going to waste on the farm.

The London cab horses, which are considered the finest and best kept horses in the world, have but two hours in the morning and two hours in the evening, with noon hour, for feeding. At eight o'clock in the evening every scrap of feed is taken away from them, and they are bedded for the night. The Montana farmer would think his horses as being starved if he found no feed in the manger after eight or nine o'clock in the evening.

The feeding of alfalfa to horses does away with the old time bran mash once a week which was considered so necessary.

A great many alfalfa feeders have from experience decided that the first cutting of alfalfa is best for horses, or alfalfa that is fairly coarse, or some that has come to full bloom. The idea is (though they do not know it) that in feeding that kind of alfalfa the horse gets about the amount he should have. The horse picks it over, takes the best of it, and manages to get about what he should have. If they were to give the horse the same amount of good well-made alfalfa hay he would eat it all and then he would have too much.

An overworked horse, or one run down and thin, will pick up and get fat and in good condition on alfalfa pasture quicker than on any other pasture known. And where a grain ration is added they have been known to put on as high as six pounds a day. Horses will eat and do well on the refuse from sheep feeding lots where alfalfa has been fed, while cattle will not take to it. A horse on straight alfalfa will keep fat on light work, while on straight timothy he will get thin with no work.

Almond Prices Named.

San Francisco News Bureau, Sept. 13: The prices for new-crop almonds, announced to-day, have been well received by the trade, and confirmations of orders have been quite general. Most of the almonds of this State are handled by local associations, who establish prices for the various grades independently—that is, there is no central organization, as there is in the case of the Walnut Association, by which directors from each association meet and agree upon a uniform price. The almond associations are widely separated, and as there is some difference in the quality of the nuts in the various districts they have always named prices independently. A central organization will probably be effected the coming season. The Davisville Association has recently installed a large cleaning plant, by which its product is being cleaned and graded, all the inferior, light weight and defective nuts being drawn out by suction. A similar plant has been erected at Suisun by the J. K. Armsby Co., and it is believed that the other associations will follow the same plan next year. Prices on the Hatch or paper shell varieties have been named as follows:

	—CENTS—
Nonpareils	14 to 15
I X L	12¾ to 13¾
Ne Plus Ultra	12½ to 13

These different prices are for the goods according to quality of stock. Outsiders have been offering, in a limited way, at prices below those established by the Association, and it is reported that most of them have withdrawn. The crop this year promises to be from 2000 to 2500 tons, or about two-thirds of a full crop. Prices on the soft shell varieties will probably be named within the next week or ten days. They are not yet ready for market. Harvesting of the Hatch or paper shell varieties is well under way.

Walnut Crop Abroad.

Report on walnut crop, by D. J. Murphy, American Consul, Bordeaux, France, August 17th: The present outlook for this season's walnut crop is not flattering. Owing to the warm and dry weather, the nuts have fallen from the trees in such quantities as to seriously alarm the growers. Even should cooler weather prevail, with sufficient rain during the balance of the growing season, the crop will fall below that of last year. The records show that in the year 1904 there was a total export to the United States of 2,930,000 kilos (a kilogram is two and one-fifth pounds) of walnuts, of which 680,000 were shelled walnuts, and 2,250,000 kilos of walnuts in the shell, valued at $696,768. It is impossible to quote prices now.

Agricultural Review.

Butte.

NECK BROKEN BY FALLING TREE.—Chico dispatch to Sacramento Union, Sept. 9: J. Dodd was instantly killed while felling a tree. One of the larger branches caught him as the tree descended, breaking his neck and fracturing his skull. The accident occurred 2 miles out of town, near the Guill ranch.

Fresno.

CALIFORNIA RAISIN GROWERS' CO.—San Francisco News Bureau, Sept. 13: Fresno — The following statement has been made public: "The Central California Packing Co. will operate the following houses for the season of 1905: Castle Bros., Fresno; Fresno Home Packing Co.; R. L. Hobbs Co.; Guggenhime & Co.; Griffin & Skelley Co., Fresno, Dinuba, Parlier; J. B. Inderrieden Co., Fresno & Hanford; Phœnix Packing Co., Fresno and Fowler; J. K. Armsby Co., Armona and Tulare; Kingsburg Co-operative Packing House, Kingsburg; Lone Star Co-operative Co., Lone Star; Union Co-operative, Los Palmas; Central California Raisin Packing House, Malaga; Lynch Packing House, Reedley; Oleander Packing Co., Oleander; Madison Co-operative, Forsyth; Madison & Bonner, Locan; Selma Co-operative Packing House, Selma; Fresno Home Packing Co., Selma; Del Rey Co-operative Packing House, Del Rey. The Good warehouse at Clovis and the Porter Bros. house at Sanger will be operated as receiving stations. These houses will be operated for the reception of raisins on 13th inst. Other houses will be opened later in the season if the business of the company requires them."

RAISINS.—Fresno Republican, Sept. 7: Selma reports that raisin growers are gathering their crop, and there is a big demand for all available labor in this section. Many growers commenced picking their grapes last week, and some now have raisins ready to turn on the trays. Packing-house men say that the first of the new crop raisins will begin to come in by the latter part of the week. While there is a scarcity of labor in the raisin harvest, the crop in this section is being handled very satisfactorily and the picking season will be prolonged a few days because of the light crews. A large amount of work is being done by Japanese and Mexican laborers. Two large crews of Mexican laborers are being employed by picking contractors. However, many white men are also engaged in the work, which pays well as long as it lasts. As high as $7 and $8 per day has been made by one picker, and many of the expert grape gatherers make from $5 to $6 a day. The crop is turning out better in many vineyards than at first predicted. It is now estimated that the crop will not be over 20% short in this vicinity, and many growers report that they have even better crops than last year. The vineyards that were pruned early are bearing lightest, as the frosts caught the tender vines at a critical time. The packers estimate that 2500 tons of raisins will be shipped from Selma this season, in comparison with a yield last season of 4000 tons.

Kings.

BIG WHEAT CROP.—Hanford Journal, Sept. 8: Kings county has been noted in the past for having within its borders the largest raisin vineyard and also the largest prune orchard in the world. The reclamation of the old Tulare lake has brought out another product. Barbour & Clawson recently finished harvesting operations in the lake section. They harvested 71,000 sacks of grain for this year's harvest.

Mendocino.

SOME GIANT MILLET.—Ukiah Press, Sept. 8: Dolly Edwards brought some specimens of millet in from the Otis Redemeyer ranch and says that it is just the thing he has been looking for for green feed for cattle and is arranging for several bushels of seed to plant on his ranch south of town. Some of the stalks were 9 feet 2 inches long, according to Dollie. The millet is a very unwelcome plant on the Redemeyer ranch as it is in the watermelon patch, and Mr. Redemeyer has been trying for several years to kill it out. The millet is tenacious and the more he has it dug out the more it grows.

HOP SITUATION.—Dispatch-Democrat, Sept. 8: The local hop growers are harvesting their hops. The crop in this valley is of good quality, but the quantity is only about three-fourths of the usual amount. Some of the growers, fearing that hands would be scarce, began picking when the hops were a little green, but it has turned out that there were more than enough pickers to harvest the entire crop. In this valley there are over 2500 people engaged in picking and they average 200 pounds per day, or $2. Big pickings have not been made this year on account of the unevenness of the hills. Amiel Weselskey, who broke the world's record last year by picking 1148 pounds in a day, is averaging over 600 pounds per day in Sanford Bros.' hop field. John Cunningham estimates the Cunningham Bros. have over 600 pickers at work and thinks their output will be 1500 bales, against 1900 last year.

BIG YIELD OF GRAIN. — Mendocino Beacon, Sept. 9: At Miller they have been threshing for the last few weeks, but will soon be done. The grain crop is short on the coast, except the white oats. The Walsh Brothers had in twenty-eight acres of wheat and when it was threshed it averaged fifty bushels to the acre. About 500 tons of hay were bailed between Mal Paso and Elk creek, and it is selling at Greenwood for $10 a ton delivered. Ed Snickers raised a stalk of corn that measured 14 feet.

HOP KILN BURNED.—Ukiah dispatch to Chronicle, Sept. 6: The hop kiln and frame cooling house on the ranch of Supervisor Marcus Gibson were completely destroyed Sept. 5 by fire, and in addition a hop press valued at $600 was consumed. The kiln and cooling house were constructed at a cost of $3000, on which an insurance of $1500 was carried.

RAIN THREATENS TO DAMAGE THE HOPS. — Ukiah dispatch to Chronicle, Sept. 12: The first rain of the season fell early this morning and there is a prospect of a storm. The rainfall gave the hop pickers quite a scare and they are hunting better shelter than their tents afforded. If the rain continues, the damage to the hop crop, which is now being harvested, will run into thousands of dollars.

Orange.

QUALITY OF WALNUTS BETTER.—Pomona Progress, Sept. 7: Reports from Anaheim state that local growers near that city estimate there will be two-thirds as many walnuts as last year, with the quality better. There will be more than an average quantity of small nuts. Anaheim and Fullerton growers believe the ruling prices will be 12 cents or 13 cents. Practically all of the walnuts in the northern half of the county, as usual, will be marketed through the exchanges.

Riverside.

BIG GRAIN CROP.—Perris Progress, Sept. 7: The harvesting of Wm. Newport's grain fields continues with four combined harvesters. About 150 acres per day is the usual average for these machines. Mr. Newport has finished all grain on the north ranch, south of the Lakeview Railroad, which averaged eight sacks per acre. He is now cutting north of the railroad, which is running about seven sacks per acre. Mr. Newport also farms the Wolfskill and the Poorman tracts, the former cutting about seven sacks per acre and the west 400 acres of the latter about five sacks per acre. It will take some time to complete the entire harvest.

Sacramento.

TOKAYS FROM FOLSOM.—Folsom dispatch to Sacramento Union, Sept. 11: Reports from Philadelphia show that the first Tokay grapes of the season from Folsom, shipped August 12, brought $2.35 and $2.55 for quarter crates. They were from the tracts of P. S. Wahrhaftig and F. W. Staunton at Orangevale. The Tokay shipments from this point at present are averaging almost a carload daily, but the season is considerably later than usual, owing to the fact that the grapes have been unusually slow in coloring.

San Francisco.

ARSENIC IN RED WINES.—Chronicle, Sept. 13: Of 215 samples of dry wine recently examined by the city chemist, 23 were found to contain arsenic. Large as the proportion of poisoned wines may seem, it is the opinion of the department making the investigation that the presence of arsenic arises from no criminal intent on the part of the winemakers, but is introduced accidentally, there being many stages in the process of converting the grapes into wine during which the deleterious substance may be introduced. The Health Department proposes to instruct the vineyard owners at an early date in the proper methods of culture which will obviate the possibility of the poison being introduced in the finished product. In addition to the arsenic, 22 samples were found to contain coal tar dyes and 14 were tainted with salicylic acid. These substances would seem to be deliberately introduced to give color and flavor to the beverage and to improve its keeping qualities.

San Luis Obispo.

HOP RAISING.—San Luis Obispo Tribune, Sept. 8: Twenty acres of hops were grown this year on the Santa Margarita ranch. The roots were planted out on the old Hansen place last spring by Joe Carroll, who invested in $400 worth of them. The vines grew luxuriantly and are thickly covered with hops. The work of picking commenced yesterday. After drying, the hops are put up in bales 4 feet in length by 2 feet in width and 18 inches in thickness.

Shasta.

MONEY IN BERRIES.—Redding special to Sacramento Bee, Sept. 6: M. W. Freeman, orchardist of Happy valley, says his strawberry vines have been bearing continuously from April to the present time. He has 2½ acres under cultivation of strawberries, and he has picked as high as forty crates in a day. All told, he has netted $800 this season from less than 3 acres, and the vines are not yet done bearing.

Solano.

CORDELIA WINERY CRUSHING GRAPES.—Press-Democrat, Sept. 7: The Cordelia Winery is receiving shipments of grapes and crushing of the fruit has begun. In a very short time the grape picking will be under full sway all over this district. The local wineries are all ready for the annual run and expect a good season. The crop indications are for better quality than last year, although the yield will probably be less. The time is not yet at hand for fixing the price and will not be for three weeks or more.

Sonoma.

MOTTLED HOPS.—Santa Rosa Press-Democrat, Sept. 6: The attention of hop growers is called to the advice that has been given from time to time recently regarding the picking of what are known as mottled hops. These are hops that are mixed in color, mature and immature. In one hop yard yesterday picking was suspended on account of the discovery that the hops were not quite ripe enough. Picking will be resumed again on Thursday, by which time it is believed that conditions will all be favorable. It is stated that in a number of instances it will be necessary to move the pickers from one part of a yard to another during the picking, so that all the hops can be gathered ripe. Growers are reminded to be sure and see that hops are picked clean.

Stanislaus.

ALFALFA TEA.—Modesto Herald, Sept. 7: J. H. Corley writes as follows: In conversation to-day with a number of experienced dairymen on the growing, curing and feeding of alfalfa, one stepped forward and asked if any of the number had ever fed or raised young calves on alfalfa tea, or if they had ever heard of its being done. The question caused some surprise. All present pleaded not guilty, and an explanation was asked for. The gentleman told how he had fed it to growing calves, and how it was made and fed. On his place he had some of the fattest, slickest and finest calves in the entire county, and they were raised entirely on alfalfa tea. The tea is made simply by pouring hot water on the alfalfa and letting it steep, and when at a blood or warm milk heat, feed to the calf. When fed too strong it will sometimes physic the calf, but by diluting it this will be remedied and overcome. By no means at any time feed the young calves with stale or sour tea, as it is claimed it has a very bad effect on the animal. [Hay tea as a feed for young calves is not a new thing, but has been known and used for generations. Alfalfa hay tea is all right if one makes it fresh and good and does not mind the trouble.—ED.]

Sutter.

SUCCESSFUL PACK. — Sutter County Farmer, Sept. 8: The Sutter Preserving Co.'s cannery has been making a big pack this season. Last Saturday over 45,000 cans of peaches were put up. Late peaches and pears are now being finished up and tomatoes coming in. The run on tomatoes will continue far into the fall as the cannery has a large amount contracted for and the crop is excellent.

Tehama.

BEEF CATTLE SOLD.—Red Bluff News, Sept. 8: Many hundreds of heads of beef cattle and mutton sheep are being driven down to the valley from the mountains where they have been for some months on summer ranges. Buyers are on the outlook for returning bands and many drovers are selling their stock before reaching this city, if the price is right. Stockmen about Morgan Springs and Big Meadows have concluded what amounts in the aggregate to a big deal in beef cattle and, while prices are not high, still growers and buyers are very well satisfied. Steers were sold at 5½ cents net weight and milch cows at 4½ cents a pound. This figure will have to be divided by two to get the price for gross weight as in the Eastern markets buyers pay for the whole animal, horns, hide and hoofs, and stockmen here should insist upon this arrangement, as it is the fairest way in the long run.

Yolo.

FEAR FRUIT PESTS.—Woodland special to Sacramento Bee, Sept. 8: A petition signed by a large number of fruit growers was presented to the board of supervisors yesterday, asking the board to appoint a commissioner authorized to take steps to eradicate diseases now threatening the horticultural and viticultural interests of the county. The matter was laid over to the next meeting.

FIRST HOPS.—Sacramento Union, Sept. 7: The hop picking season in this part of the Sacramento valley is nearing a close, and reports indicate that the yield is better than was expected. This is true as to quantity as well as to quality. The shipping of the first bale of California hops is always regarded as an interesting event. This year the first bale came from the Merkeley yards, in Yolo county, and was shipped to Chicago by F. V. Flint & Co.

Yuba.

CANNERY CLOSES. — Marysville dispatch to Sacramento Union, Sept. 11: The Marysville cannery, owned and operated by the California Fruit Canners' Association and managed by Max C. Coates, closed a successful season's run last evening. The company's plant in Yuba City ceased operations a fortnight since, scarcity of help being assigned as the chief reason. A run of two months was made here, and the results are highly satisfactory, as a large output has resulted. Many of those employed will find work in the packing houses here and in Yuba City, which are in need of many hands.

OREGON.

Josephine.

ONION PEST.—Rogue River Courier, Sept. 8: R. Carter, who has a farm on Evans creek, above Wimer, grows onions and beans. These crops have heretofore proven quite profitable, but a pest has made such inroads on his onions that he will have to cease their cultivation unless the pest can be eradicated. From a patch that two years ago Mr. Carter harvested 1500 pounds of fine onions, this year he only got twenty-four sacks, and most of them so badly injured by the pest as to be almost unsalable. Mr. Carter brought in several onions that are affected with the pest. The onions are quite large and of fine shape, and would sell at a good price did they not have a decayed spot on the bottom of each. The pest, which is evidently a fungus, attacks the onions just as they are completing their growth, and causes a decay that first destroys the roots and then spreads up into the body of the onion, producing a dry rot that in a month or so destroys the onion. As to the cause of the pest, or how it was introduced into his field, Mr. Carter has no knowledge. He first noticed the pest two years ago, but it did little damage to his onion crop. Last year it destroyed fully one-half the crop, and this year he lost practically the whole of his onions.

HAY BALER CRUSHES LIFE.—Grants Pass, Or., dispatch to Call, Sept. 12: James Leonard, owner of Leonard farm, one of the largest and best farms of Josephine county, was killed yesterday by being crushed in a hay baler. The baler was at work on the Leonard ranch and Leonard was feeding the machine. While attempting to force through a load of stubborn alfalfa he lost his footing and fell into the hopper. The plunger shot forward and caught the unfortunate man before the machine could be stopped.



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THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

The Home Circle.

Fashion's Whims.

This fashion's a whimsical sort of a sprite;
Her ways, I confess, are too much for me,
quite!

Lavinia, sixty years ago,
Was dressed in the height of the style,
you know—
The pride of her relations;
Yet Mabel smiles at the quaint little miss,
With her frock like that, and her shoes
like this—
As some one at Mabel will smile, I wis,
When the dress that to-day she is proud
to wear
Belongs with the hoops and the powdered
hair
And the patches of past generations!

But this is the question that puzzles me:
The rose's frock is the same, I see,
With the trimming of dew upon it
That roses wore in Lavinia's day;
And the tulip's petticoat, striped and gay,
Is made in the same old-fashioned way;
And never a change, for a hundred years,
In the cut of the marigold's gown appears;
Or the shape of the sweet pea's bonnet!

Yet nobody says that the flowers look
queer;
Pray, can you explain to me why, my
dear? —Margaret Johnson.

Elijah's Lost Reputation.

Elijah Cobb is a well known if not altogether highly respected resident of a certain Long Island village, which, for convenience sake, we will call Farawayport. He is a man with a past.

It is true that since the "past" occurred he has striven by years of diligent rectitude to live it down; but news is scarce in Farawayport and the gossips will not readily let a good thing go.

I do not, of course, hold a brief for Mr. Cobb, neither do I in any way excuse the grave error that caused these fanciful stories of his goings-on to rise and grow. But Mr. Cobb is at present leading a moderately blameless life, and it has always been my view that we should not hasten to condemn our neighbors merely because their sins are not the same as our own.

One thing is certain. If Mr. Cobb had at any time during the past ten years had an opportunity of leaving Farawayport for good he would have seized the chance greedily. But fate and Mrs. Cobbhave combined to render such a pleasing prospect quite impossible.

Mr. Cobb is the grocer and general dealer in Farawayport, as was his father before him. He is a fat, bald-headed little man, and at the time of his sad lapse from grace he was probably just as fat if not quite so bald.

His offense is deplorably exaggerated by the fact that at the time he was a man of 50 with a family of eight daughters and two sons, the latter mere toddlers in pinafores. But Mr. Cobb had always felt that he was fitted for a broader and brighter existence than that of village grocer.

Stories of the great life in New York, that was a bare fifty miles away, occasionally filtered through to Farawayport, and whenever Mr. Cobb heard them he sighed grievously and reflected dismally on his vanished hopes and lost chances. But for the mistaken views of a narrow-minded father, he felt that he, too, might be by now a name and power in the great city—a leading light with a box at the opera and a yacht, and a gold watch chain stretching across his capacious waistcoat from pocket to pocket.

And then he would be called in a hurry to his shop to conduct a vulgar argument as to the quality of that last lot of butter, and the very soul within him would feel lacerated and torn. And that was his life.

Then one day Mrs. Cobb told him that an elderly gentleman had called to know whether they had a room to let. The gentleman was very old indeed, but very active, though as a man of business he was distinctly inferior.

He offered $8 a week for a bedroom and the use of the parlor, and, as Mrs. Cobb afterwards remarked, he could have bought a house for himself for that money anywhere in Farawayport.

The old gentleman gave his name as Braithwaite. In case, he asked, Mr. and Mrs. Cobb should desire to know more about him, he would inform them that he was a professor of paleontology connected with the Metropolitan Museum in New York city.

As far as possible he desired to have his presence there kept secret, as he believed he was on the eve of a very astounding discovery. It had come to his ears that some neolithic arrowheads, probably to be attributed to the tertiary epoch, had been found in Farawayport, and he had come down with authority to investigate the matter. If fortune favored him he hoped to find traces of even the earlier epochs, and the value of such a discovery would be inestimable.

He asked Mrs. Cobb if she could recommend a steady and reliable young man, who was not afraid of work, as there would probably be a lot of digging to be done, and he himself was, unfortunately, not so vigorous as he had been in his earlier years.

Mrs. Cobb gave it up. She said she could recommend a most reliable youth, and she also said that the professor would be as comfortable in her house as in his own home. But at the earliest moment she took her husband on one side and said that no good could come of harboring lunatics on the premises and the sooner the old gentleman's friends came and put him under restraint the better it would be for all concerned.

At the earliest convenient moment she slipped across to a neighbor and said that an old gentleman, who owned a museum in New York, was staying with her and didn't want to be known. And before evening the news went around Farawayport that Mrs. Cobb had got an old showman staying at her house, and that anybody with a two-headed puppy or a five-legged calf should try to do a deal at once, as the old chap was throwing his money about regardlessly.

For several days after the professor's programme was as regular as it was mysterious. Attended by the reliable youth, he sallied forth and roamed over the village.

When in the evening the reliable youth was severely catechised by the curious he stated upon his honor that the professor had done nothing but pick stones up, look at them and throw them away. Sometimes the reliable youth would say that he had been suddenly instructed to dig a hole carefully, and finally he announced that the digging had settled down to a regular job.

He had got a big hole dug out in a part of the municipal square that he was not to indicate, and the professor was picking things out of it and getting tremendously excited.

The professor and his mysterious pursuit formed the chief topic of conversation at the Farawayport saloon. Mr. Cobb, cross-examined fiercely under the suspicion of knowing more than he was disposed to tell, protested time and again that he could find out nothing except that the old gent was a bit weak in the head.

Finally Jim Border, in the genial and communicative mood that even village beer has been known to induce, explained that he had got it. Under the square of Farawayport there was—gold; tons of it. And the old cove from New York was keeping the secret to himself and was shovelin' it up by the carload. The mystery was explained.

Everybody saw at once how completely Jim Border had guessed the secret. The old gentleman's desire to keep his presence at Farawayport a secret, the reliable youth's refusal to reveal the whereabouts of the great hole—all pointed clearly to the facts without the shadow of a doubt.

And Elijah Cobb listened and listened till his eyes almost started from his head in his amazement. Beyond all doubt that was the secret of those square boxes that the professor kept in a corner of his room; boxes so heavy that Mrs. Cobb had admitted that even with the help of her eldest daughter she was only just able to lift them.

There was he, Elijah Cobb, frittering away his dull existence in the sordid atmosphere of a grocer's shop, when over his very head lay the wealth of a Crœsus, the fabulous fortune of a Monte Cristo. Heavens! The thought was maddening. He jammed his hat on his head and slipped out of the door and strode homeward at a rapid pace.

At the foot of the staircase of his house he met the professor. The old gentleman's eyes lighted up as he caught sight of Mr. Cobb, and he put down a bag that he had been carrying—a stout leather handbag that seemed distressingly heavy for him. Would Mr. Cobb mind carrying the bag upstairs? It contained something of almost priceless value, and the professor did not want to have it out of his sight.

Mr. Cobb said he would be most happy. Then he turned cold all over and then again he broke out into a profuse perspiration.

He picked up the bag and found it heavy, indeed. He had always heard that gold was a weighty substance, and now, by the caprice of fortune, he was able to prove the statement. It seemed to him, as he walked upstairs in front of the professor, that he held in his hand the talisman that would open the door of the great world of New York, and the professor had picked it up for the mere stooping.

Mr. Cobb was very quiet at supper time that night. He ate scarcely anything. In answer to Mrs. Cobb's anxious inquiry he explained that he was probably a little bilious. He even countermanded the order for his customary "nightcap" of hot whisky and water.

Toward early morning Mrs. Cobb awoke with a start. She was alone.

She rose in a hurry and dressed herself with some incompleteness; so much so that the professor, who happened to appear on the threshold of his room at the moment at which she appeared on that of her own, took flight precipitately and deemed it more prudent to address her from the protecting shelter of his door.

"Mrs. Cobb," he called out, in an agitated voice, "some one has been playing a very foolish trick upon me. A bag of carefully selected cleets that I had in my room has been removed. I would not have lost them for anything. They are certainly preglacial, and therefore of the utmost value. Please ask Mr. Cobb to come and—"

"But," interrupted the lady tearfully, "Mr. Cobb ain't here. I don't know what's become of him. Ah!" she cried, as her eye fell upon a scrap of folded paper that lay upon a chair at her side, "what's this?"

She picked up the piece of paper. It had writing inside—writing in Elijah Cobb's own poor, untutored hand. Mrs. Cobb read it, and then sank on the chair with an appalling shriek that brought the professor from his room in haste.

It was no moment to haggle over precise degrees of morning dishabille. The woman was in trouble and the professor, good man, forgot his own wrongs at once. He hastened to her side and took from her the scrap of paper that she brandished at him in her hysterical grief. Adjusting his glasses and coming close to the window to get the full benefit of the morning light, the professor read:

Deer Martha—I always sed as wat I was cut out fer sumthin more than grocery and now its here I hae took the professors bag of gold he wont miss it as he nows ware to find plenty more don't bother about me as ime ruuning away ime going to New York to lede a gay life your loving husben Elijah Cobb.

The professor looked from the paper to Mrs. Cobb and from Mrs. Cobb to the paper. Then the absurdity of the situation got the better of him, and he broke into a roar of laughter; his mirth was stopped by a fit of coughing.

Mrs. Cobb, brought back from her hysterical grief about the same time, started to her feet, prepared to denounce in free and easy terms the behavior of people who hold the misfortune of others up to ridicule. But as soon as the professor got his breath he spoke quietly and to the point.

"Your husband is making a fool of himself, Mrs. Cobb. Don't be alarmed. We will have him back shortly, and ask him for an explanation. Get some one with a trap to drive me to the station. He can't have had a very long start, and he will have to walk slowly with a heavy bag like that. Gold, indeed! My good woman, the contents of that bag have no value at all to the people he is likely to meet. If he had only taken the trouble to examine his booty first, he would have found that out for himself. Get me a man with a trap, please, quickly."

Mrs. Cobb, still dazed, but somewhat reassured, sent her eldest daughter for the desired trap forthwith. The station was five miles away, and Mr. Cobb had undertaken no light task in committing himself to such a walk with such a burden.

Driving at a rapid rate, the professor, as he had anticipated, came up with Mr. Cobb about two miles away. The rascal was sitting by the roadside, disconsolate and evidently a little weary. As he heard the noise of wheels in the distance he got up and looked at the trap anxiously.

Recognizing the professor, he bolted adroitly through the hedge, leaving his precious bag to its fate. The professor, jumping from the trap before it had quite stopped, and at the grave risk of a broken neck, rushed up to his treasure and almost cried as he hugged it.

Meanwhile the young man who had been driving threw the reins on his horse and started on a businesslike chase of the erratic Cobb, whom he promptly seized and brought back. Obeying the professor's stern command, Mr. Cobb then climbed into the vehicle; and, the others having taken their places, the return journey commenced.

Mr. Cobb spent several days in the effort to convince people that the whole thing was nothing more than an elaborate joke that he had gotten up on his own initiative at the professor's expense. But nobody believed it then, and nobody thinks of believing it now.

Still, as I have said, since that time Mr. Cobb has strenuously endeavored to live down the one blot on an otherwise spotless career, and I wish him success in his effort.—Brooklyn Citizen.

Child Life Among Indians.

Given a reasonable chance for life, the Indian child is as happy, hopeful, ambitious and playful as is the white child born under much happier circumstances. He is, too, quite as imitative, and, like his white cousin, he apes the ways and manners of his elders and mimics their occupations in his play.

The infant Indian possesses rather more dignity than the ordinary white child. This is chiefly owing to the care he receives rather than to inherited sedateness. In his infancy he is strapped to a board or securely packed in an elongated basket woven for that purpose, where he can neither kick nor squirm. He cries less than his white cousins, because he early learns that it is an unprofitable occupation.

The Indian mother is very accommodating. If her infant wishes to cry, she lets him do so. She does not, like the white mother, rush to the child when he begins to howl and pacify him. She lets him howl till he tires of it and ceases of his own accord. It is because crying brings them attention that most children cry. The young Indian does not get the attention, so he soon cuts out crying entirely. With crying, kicking and squirming eliminated, there is really nothing left for him but to remain calm and look dignified. This is what he does, as a rule.

The Indian baby's wardrobe is a very simple affair. It generally consists of a single cloth, or skin, as the case may be, wrapped around and around the small one. It is about two minutes' work for the red mamma to dress her child and bind it to the board or basket which serves as a crib. The board or basket is then stood upright in a corner of the dwelling, if her work is in the house, or against a convenient bank or boulder, if the work is in the field, or, if it is in the forest, the cradle may be suspended from the bough of a tree.

The care of the child is as simple as its dress. It receives little attention outside of the giving of nourishment at stated intervals. Occasionally, once a week or once in every two or three weeks, as may be most convenient, several of the Indian mothers make a little bathing party, and go to some pool or stream and give the babies a bath.

There are none of the little luxuries of the bath of the white baby, such as scented soap, soothing powders and the like. The little ones are loosened from their bonds, their wrap is removed and they are laid in the shallow water of the pool or stream to kick and splash and disport to their hearts' content, while their mothers chat upon the bank near by. After a season they are removed and dried.

Are they tenderly wiped with soft, clean linen? No, indeed. About the middle of each grown baby is tied a piece of cloth, and they are hung by this cloth from the bough of some convenient tree, to dry in the air and sunshine, while their mothers continue their briefly interrupted gossip. Later the human fruit is plucked from the branches, and the little ones are wrapped and cradled, when they ride upon the backs of their mothers to their rude homes.

It has been frequently remarked that Indian children all seem strong, healthy and well formed. There is reason for this in a number of the tribes. It has been the practice with most Western tribes to refuse life to weakly or deformed infants born to them. In the case of albino children, which are by no means uncommon, the child is left to perish of neglect and starvation, for the Indians believe that these children are marks of displeasure on the part of the Great Spirit, and they cannot be induced to meddle with the child, either to put it out of the way by drowning or suffocation, as is their practice with deformed children, or to give it nourishment, that it may have a chance to live.

When a child is old enough to begin walking the board or basket cradle is discarded, and the next few years of the child's life are years of freedom. He gambols about the paternal dwelling, inside and out, as do the puppies which are his companions. He is naked, usually, unless he needs protection from the cold, and he can stand much colder weather than ordinary white children.

Children of from six to sixteen years find a deal of delight in active games and athletic sports—wrestling, racing and such games as deer and hounds, mimic battles, follow the leader, throw the spear and hide and seek, and many other games, some of which are similar to those played by white children.

The fondest desire of the heart of the Indian parent is that the child shall be brave and self-reliant. The child is never whipped for that tends to break his spirit and make a coward of him. Nevertheless, Indian children are respectful, obedient and retiring. They keep their corner in the home, and do not mingle in the conversation of their elders.

The Indian father tells his sons stories of prowess, as they gather around the open fire in the middle of the lodge or before the door of the dwelling, for the purpose of encouraging them to bravery and reliance. The mother schools them to endurance and patience under suffering. No pains are spared to inculcate in them those qualities so admired by the red men.

The education of the child is brought about principally by observation and by listening to the conversation of the elders. He learns the history and traditions of the tribe as they are related about the hearthstone of the tepee in the evening. There, too, he hears stories of the chase, of war, of prowess, and he is quick to catch the subtle points of the tale and to learn the secrets of stalking the game or ambushing the enemy. The daughter learns her mother's arts, as does the white girl, by practical attempts under the mother's supervision. The arts and occupations of both sexes are few, and the process of acquiring an education is not a long or difficult one.

Domestic Hints.

Roasted Fresh Pork.—Take three pounds of fresh loin of pork; season two hours before needed with two good pinches of salt and one good pinch of pepper, well distributed. Put it into a roasting pan with half a cupful of water, place it in the oven, and let roast for fully one and one-half hours, being careful to baste it frequently with its own gravy. Remove it to a hot dish, skim the fat from the gravy, strain the lean part over the roast, and serve.

Orange Jelly.—Scrub the oranges well with a vegetable brush and warm water. Cut in halves and squeeze out juice on glass drill, strain, add one and one-fourth pounds of granulated sugar to each pint of juice, and boil twenty minutes or until a thick juice forms when a little is cooled. If the oranges are very sweet, add juice of one lemon to each half dozen oranges.

Currant Shrub.—Heat red and black currants until the juice runs freely, squeeze the fruit and to each quart of the liquid allow three-quarters of a pound of sugar; stir the juice and sugar until the latter is dissolved, and when the mixture is cold add a thinly sliced cucumber and the beaten whites of two eggs. Serve in a tall cut glass pitcher half filled with cracked ice.

Ladies' Palates.—Whip five whites of eggs in a basin, with three-quarters pound of powdered sugar, and add half a pound of flour by degrees; when this is mixed, add one ounce of pounded candied orange flowers. Rub some baking sheets with white wax. Put the paste into a paper funnel and squeeze it out onto the baking sheets in rounds 1½ inches in diameter; let the top of the paste dry; then brush it over lightly with some white of egg beaten up with a fork, and bake in a moderate oven.

Fish Chowder.—For fish chowder fry some slices of salt pork in an iron pot. Put in a layer of fish, cut in slices on the pork, then a layer of thinly sliced onions and one of sliced potatoes. Repeat until the quantity desired is obtained. Season each layer of onions with salt and pepper. Split hard biscuits and place them on the sides and top. Add water enough to come into sight. When the potatoes are tender the dish is ready. Add half a pint of milk or a cup of cream and serve.

Onion and Lettuce Salad.—Two heads of lettuce and a small Spanish onion must be taken, as well as six tablespoonfuls of olive oil, three of vinegar, half a teaspoonful of salt and one-eighth of a teaspoonful of pepper. After mixing the salt and pepper with the oil, add the vinegar and stir very thoroughly. Strip off and put aside the green leaves of lettuce and, after washing the heart leaves in cold water, drop them into a pan of ice water, to make them crisp. Peel the onion (it is well to peel it under water), and with a sharp knife cut it into shavings. Shake the lettuce in a colander until it is free of water. Put the lettuce and onion into a salad bowl in alternate layers, sprinkling a little of the dressing upon each layer. Serve the salad as soon as possible after it is made; or, to put it in another way, do not make it so early that it will stand a long time before being eaten. The green leaves of lettuce, which were put away at the outset, may be boiled and hashed like spinach, and served as a cooked vegetable.



Western Meat Company,
San Francisco, U. S. A.

Land for Sale and to Rent.

GLENN RANCH,
Glenn County, - - California.
FOR SALE
IN SUBDIVISIONS.

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The Markets.

San Francisco Produce Report.

San Francisco, Sept. 13, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	$80⅞@ 79⅝	82⅛@ 81¼
Thursday	81⅛@ 80¾	82½@ 82
Friday	81¼@ 80½	82⅜@ 81⅞
Saturday	81½@ 80⅞	83 @ 82⅜
Monday	82¼@ 81⅛	83½@ 82⅛
Tuesday	82⅝@ 82⅛	83⅝@ 83⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53¼@52½	43⅝@43½
Thursday	51 @53¼	44 @43¾
Friday	53⅜@53¼	43⅞@43⅝
Saturday	53⅝@53⅜	43¾@43½
Monday	53⅝@53¼	43⅜@43¼
Tuesday	53⅜@52⅜	43⅞@43⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 32½@1 32	$——@——
Thursday	1 32⅝@1 32⅜	——@——
Friday	1 32 @1 31⅞	——@——
Saturday	——@——	——@——
Monday	1 32¾@1 32¼	——@——
Tuesday	1 33⅛@1 33	——@——

Wheat.

Trading has been very light during the current week, as dealers are hesitating to buy at the present prices, when it is known that the crop in the north is an unusually large one, and that it will soon be completely harvested and fairly launched on the market. It is expected that a considerable portion of the northern wheat crop will be marketed in California this year, as the crop in this State is but little short of a failure. There now seems but little possibility of any exporting being done from this port, though it is probable that a large export trade will develop in the North as soon as prices settle a little further. Reports from the wheat sections of the North and Middle West indicate that the weather has been favorable to harvesting. Chicago reports say: "Aside from holding a rather firm tone and a possible improvement in sentiment, trade shows no change." A Kansas City grain man wires: "I think that our big run of wheat is about over, and that receipts from now on will be moderate and will show material increases, only at higher prices."

California Milling	$1 55 @1 65
Cal. No. 1 shipping	1 50 @1 55
Oregon Club	1 47½@1 52½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.32½@1.32⅝.

Flour.

There is very little change in the flour situation, locally. Prices remain the same, though the shipping demand is very light. There is, however, a scarcity of good old wheat for milling purposes, and new wheat crop flour has not as yet appeared in this market, except in very limited quantities. Millers state that there is the usual quantity of flour being exported to Central and South America, but that owing to the Chinese boycott there is very little going to the Orient. It is expected that the failure of the rice crop in Japan will result in a large demand coming from that section as soon as the complete ratification of the peace treaty is accomplished.

Superfine, lower grades	$3 25 @3 50
Superfine, good to choice	3 50 @3 75
Country grades, extras	4 25 @4 50
Choice and extra choice	4 50 @5 00
Fancy brands, jobbing	5 00 @5 25
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

There has been some trading in the spot barley market this week and prices are well maintained. Choice, bright feed lots of barley are very scarce and lots of this quality arriving are picked up quickly at the maximum quotation of $1.05. Off grades, however, continue to be a drug on the market, with considerable quantities offering at prices ranging from 95c to $1, and but few takers. Receipts have been rather light and would indicate that California will not market a large crop of barley this year. Trading in futures has been fairly brisk, a number of contracts for December option having been made at about 99c.

Feed, No. 1 good to choice spot	$1 02½@1 05
Feed, fair to good	95 @1 00
Chevalier, No. 1 to choice	1 15 @1 20
Chevalier, common to fair	1 05 @1 10

Oats.

Black seed oats are in demand and strictly choice very hard to find. There are plenty of off-grade blacks, but they are not worth over $1.30 in this market. Choice reds are also in demand for seed. Feed reds show a wide range, owing to the very large quantities of off grade now offering.

Black oats	$1 30 @1 50
Red, choice new	1 30 @1 45
Red, fair	1 10 @1 27½

Corn

The local corn market continues very quiet with an especially light demand for the white varieties. Occasionally a little yellow changes hands for milling purposes. The small round variety is at the moment rather scarce. Reports from Chicago say that the principal feature of the corn situation there is the manner in which the shipping demand keeps up, stocks being moved out as fast as they can be handled and placed East or abroad.

Large White, good to choice	$1 35 @1 40
Large Yellow	1 37½@1 40
Small Yellow	1 50 @1 55

Rye.

Some trading in rye has developed and receipts have been of fair size. The receipts have been mostly from the Salt Lake district and from California. Choice lots of California will bring an advance on quotations, but the Salt Lake rye is said to be finding few takers at the minimum quotations of $1.47½.

Good to choice	$1 47½@1 52½

Buckwheat.

No buckwheat has as yet begun to arrive in this market. Old stocks are well cleaned up, there being now practically none in first hands except such as has been kept for seed. The mills have on hand barely sufficient for immediate milling purposes.

Good to choice	$1 75 @2 25

Beans.

The market is at present rather quiet, but dealers are expecting mixed car orders from the East shortly. The market shows but little change as regards prices; the new crop from up river has not yet been moved, though an occasional lot of pinks is showing up. The present inclement weather is retarding threshing of Limas some in the south, so the new crop will not be harvested as early as was expected. The Lima crop is, however, earlier this year than usual. Stocks now in this market are very light, bayos being practically cleaned out of the market entirely, and the quotations on reds and red kidneys are largely nominal. Blackeyes are holding firmly at quotations and will probably remain there at least for early shipment, as quite large contracts have been made.

Small White, good to choice	$3 50 @3 60
Small White, damaged	1 50 @2 75
Large White	2 50 @2 75
Large White, damaged	75 @1 50
Pinks, damaged	1 50 @2 00
Bayos, good to choice	4 25 @4 50
Bayos, damaged	2 50 @3 00
Red Kidneys	3 50 @4 00
Reds	5 50 @6 00
Limas, good to choice	5 25 @5 50
Black-eye Beans	3 75 @4 00

Dried Peas.

The new crop of California dried peas is nearly out of the way now, but haste is being made, as a good heavy rain right now would damage the crop materially. A few new crop California green peas are now coming into market and are easily bringing the top quotations. The quality of the receipts so far has been good.

Green Peas, California	$1 85 @2 10
Niles	1 75 @2 00

Hops.

Hop picking is now general in Sonoma and Mendocino counties. There are more than enough old crop hops on first hands, however, to supply the immediate brewing demands, but these are being held at prices too near those at which the new crop can be contracted for to be able to move off readily. Large lots of spot goods are being offered at 14c, but are finding few takers at those figures, as dealers prefer to wait till the new crop begins to move before buying, because there is every indication that hops will be much cheaper than at present before they advance any. It is estimated that the world's crop will be the largest that it has been since 1890. New York will run somewhat short of the usual crop, but this will be more than counterbalanced by the abundance in other hop sections. New hops are being contracted for 30-day delivery as low as 13c, and one or two sales are reported as low as 12½c.

Good to choice 1904 crop, nominal	13 @ 15

Wool.

The prices now being quoted are nearly all for fall wools in this market. There are, however, one or two lots of belated spring wools of the Oregon or Nevada varieties still to be found. Prices for fall wools have opened at a considerably lower level than those paid for the latter and of the spring clip, and it is claimed by jobbers here that a still lower level must be reached before the fall clip can commence to move. It is predicted that San Joaquin wools will not stay long at the present asking price. The market in the East is strong on wool suitable for worsteds, but on wools suitable for clothing manufacturers' use there is no demand to speak of. It is now feared that the price at which part of the fall clip was contracted for in July and August was too high, and that dealers will have difficulty in handling the stocks at a profit. Prices are now gradually declining, but have not yet reached a low enough level to induce dealers to operate. When they reach the proper level it will no doubt tempt some operators to break the deadlock which seems to exist.

FALL

Humboldt and Mendocino	17 @20
Northern, free	10 @16
Northern, defective	9 @14
Middle County, free	13 @17
Middle County, defective	10 @16
San Joaquin and Southern, free	10 @14
San Joaquin and Southern, defective	9 @11

SPRING.

Oregon, valley	23 @25
Eastern Oregon	12 @17
Nevada	16 @20

Hay and Straw.

Arrivals of hay for the week just ended indicate that the worst of the rush is over, receipts having amounted to but 3400 tons, in comparison with 5100 tons for the week preceding. Reports come from Livermore and Hollister that practically everything is housed for the winter. What still remains out of doors is mainly in Napa and Sonoma counties, together with the Stockton district. The market here is featureless, with a growing tendency toward dullness, owing to the fact that most large consumers are now well stocked for the winter. The bulk of present arrivals is of the poorer grades of hay, the increase in the lower qualities being more marked as the season progresses, owing to a tendency to hold back the better grades for the winter market. Choice wheat hay is holding its own and sells sometimes above quotations; alfalfa is being rushed to market, owing to the fear of rain, and is weaker. Other grades of hay continue unchanged, with a marked scarcity of No. 1 oat and clover and practically no barley and oat being sent here.

Wheat, good to choice	$ 9 50 @ 13 50
Wheat and Oat	8 00 @ 10 00
Tame Oat, fair to choice	7 00 @ 10 50
Wild Oat	5 00 @ 8 00
Barley	7 00 @ 9 50
Clover	6 00 @ 9 00
Alfalfa	5 50 @ 9 00
Stock hay	4 50 @ 5 50
Compressed	10 00 @ 13 00
Straw, ₩ bale	25 @ 40

Millstuffs.

The market remains firm with both bran and middlings in good demand and stocks rather light. Prices are ruling steady at former quotations. There is now plenty of cracked corn to be had at the local mills, but shorts is not so plentiful. Cocoanut meal is now being handled in quite large quantities by local dealers and is being quoted at $21@22 per ton.

Alfalfa Meal, ₩ ton	$18 00 @ 20 00
Bran, ₩ ton	21 50 @ 23 00
Middlings	28 00 @ 30 00
Shorts, Oregon	22 00 @ 24 00
Barley, Rolled, choice	22 00 @ 22 50
Cornmeal	30 00 @ 30 50
Cracked Corn	32 00 @ ——
Oilcake Meal	33 50 @ 35 00
Cocoanut cake or meal	21 00 @ 22 00

Seeds.

The mustard seed market is now rather quiet, as the bulk of the crop cannot be moved and Eastern manufacturers will not pay the present asking price, but prefer to take chances on the market later on. There is no question but that Trieste seed will remain very high, but yellow may not be in such demand, as foreign yellow competes with California in the Eastern market.

Flax	$3 00 @ 3 25
Mustard, Yellow	2 85 @ 3 00
Mustard, Trieste	4 00 @ 4 25
	Per lb.
Canary	6½@ 7
Rape	2½@ 3
Hemp	3½@—
Timothy	5 @ 5½

Honey.

San Francisco jobbers say that there is no material improvement in the honey market here owing to the fact that apiarists are still asking above the figure at which business can be done here. The following quotations represent the prices which San Francisco dealers are willing to pay for the various grades delivered. It is reported that Colorado will produce about one-fourth of the average yield of honey this year, and that Colorado buyers are already in the southern part of California buying several carloads of comb honey for shipment into the Middle West. As estimate of the yield for southern California for this year, emanating from the California National Honey Producers' Association, says that the output will approximate 175 carloads. Last year's crop was practically nothing and the prospects are for higher prices.

Extracted, Water White	4¾@ 5
Extracted, White	4½@ 4¾
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax.

The market is in good shape and appearing quotations are well maintained. Receipts are light and stocks are kept well reduced by a fair buying demand. Some growers are said to be holding for an advance, as the yield is said to be light in some sections.

Good to choice, light ₩ lb	25 @26
Dark	24 @25

Live Stock and Meats.

The market is now a shade stronger in beef and mutton, wethers showing a gain of ½c per pound in the price of choice. Spring lambs are also quoted ½c higher, though there are many of them coming into the market now that fall shearing is over. There is an oversupply of small veal coming in, as is usual at this time of year, and the price is a shade weaker.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₩ lb	4¼@ 5¼
Beef, 2nd quality	3½@ 4
Beef, 3rd quality	3 @ 3½
Mutton—ewes, 6@6½c; wethers	7 @ 7½
Hogs, hard grain, 130 to 230 lbs	5¾@—
Hogs, large, hard, over 230 pounds	5½@ 5⅝
Hogs, small, fat, under 130 lbs	5¼@ 5⅜
Veal, large, ₩ lb	5 @ 7
Veal, small, ₩ lb	7 @ 9
Lamb, spring, ₩ lb	8 @ 9

Hides, Skins and Tallow.

The hide situation is firmer again this week, though prices are not quotably higher. California hides are in good demand, both for local purposes and for Eastern shipment. Dealers here report that even at the present record-breaking prices the trouble is rather to buy hides than to sell them.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	13 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₩ skin		1 50@2 00
Pelts, medium, ₩ skin		90@1 25
Pelts, short wool, ₩ skin		60@ 90
Pelts, shearling, ₩ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		3½@3¾

Bags and Bagging.

The market is much firmer on all kinds of bags. Bean bags are holding firmly at the recent advance, and as the prospects for a large bean crop begin to materialize the price is expected to stiffen still further. Cotton fruit sacks are somewhat firmer, and are now quoted in two grades, No. 1 and No. 2, as to quality. The market is almost bare of grain bags, and reports from Oregon state that many growers will be obliged to build bins on account of the scarcity. Wool sacks have also advanced in price.

Bean Bags	5¾@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7 @7½
Fruit Sacks, jute, as to quality	6 @7½
Grain Bags, Calcutta, 22x36, spot	7½@7¾
Wool Sacks, 4-lb	23 @ 34
Wool Sacks, 3½ lb	30 @ 31

Poultry.

The market continues firm even though receipts are heavier than had been anticipated. There is every reason to believe that present satisfactory prices will be maintained owing to the scarcity of Eastern frozen poultry. Young fowls of all kinds are in demand.

Turkeys, choice Young, ₩ lb	22 @ 24
Turkeys, live gobblers, ₩ lb	19 @ 21
Turkeys, live hens ₩ lb	20 @ 23
Hens, California, ₩ dozen	4 50 @ 5 50
Hens, large	6 00 @ 7 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	5 50 @ 6 00
Fryers	3 50 @ 4 50
Broilers, large	3 00 @ 3 50
Broilers, small to medium	2 50 @ 3 00
Ducks, old, ₩ dozen	4 50 @ 5 50
Ducks, young, ₩ dozen	4 00 @ 6 00
Geese, ₩ pair	2 00 @ ——
Goslings, ₩ pair	2 00 @ 2 25
Pigeons, old, ₩ dozen	1 25 @ 1 50
Pigeons, young	1 75 @ 2 00

Butter.

The market is much firmer on fancy grades of butter and eggs and off grades are also moving off readily at the advance in price noted. Receipts have been somewhat lighter than usual, but of good quality.

Creamery, extras, ₩ lb	24 @26
Creamery, firsts	23 @24
Creamery, seconds	21 @22
Dairy, select	20 @21
Dairy, firsts	19 @—
Dairy, seconds	18 @—
California storage	22 @24
Mixed Store	17 @18

Cheese.

The market is much steadier and prices remain unchanged. Only normal receipts, supplemented by a good demand, have kept stocks well reduced and held prices at their former level. Strictly fancy grades are in good request.

California, fancy flat, new	11	@12
California, good to choice	10	@10½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13½
Eastern, new	15½	@18½

Eggs.

Fancy eggs are more active than at last quotations and show an advance of 4c per dozen in price. Owing to the good demand on these grades, stocks have been rather light and there has been a considerable call for storage stock which is also somewhat stiffer in price.

California, select, large, white and fresh.	32	@34
California, select, irregular color & size.	26	@28
California, good to choice store	18	@24
Eastern firsts	21	@23
Eastern seconds	18	@19

Potatoes.

The potato market is in very good shape. Receipts are large and of good quality and stocks are prevented from accumulating by a good shipping demand. Prices are being well maintained at appearing quotations. The shipping demand for the cheaper grades to Alaska and to Southwestern points continues good.

Cal. Early Rose, ₱ cental	50	@	60
River Burbanks, ₱ cental	60	@	75
Salinas Burbanks	85	@	1 15
Chile Garnet, ₱ cental	60	@	70
White Rose, ₱ cental	65	@	75

Vegetables.

The market is somewhat weaker on all varieties than at last quotations. Lima beans show a decline of 2c in price and string beans of ½c. Green corn has a wider range, owing to the fact that much that is now coming into the market is slightly off in quality. Egg plant and summer squash are weaker, only the strictly choice grades bringing the top quotation of 50c in either variety. Tomatoes are much weaker in price, owing to the fact that the crop was large and the canners did not take as many as had been anticipated, the consequence being that this market is oversupplied. The onion market is also somewhat weaker, as there were not so many orders for Australian shipment as had been expected. Australian Browns are now being quoted at 70@85c in this market.

Beans, Lima, ₱ lb	2½	@	3
Beans, String, ₱ lb	3	@	3½
Beans, Wax, ₱ lb	2	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	50	@	1 25
Egg Plant, ₱ box	25	@	50
Garlic, ₱ lb	3	@	5
Onions, New Yellow Danvers, ₱ ctl.	75	@	85
Onions, Australian Brown, ₱ ctl	70	@	85
Peas, Green, ₱ lb	3	@	5
Peppers, Bell, ₱ box	35	@	40
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	35	@	50
Tomatoes, ₱ box or crate	40	@	65

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@80 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Fresh fruits are now coming into the market in great abundance and are of good quality. Notwithstanding the large receipts, prices have been stiffened somewhat during the current week by an exceedingly brisk demand. Prices on several varieties show advances. Blackberries have a wide range of quotations owing to the fact that there is now a considerable demand for canners' varieties, which are selling at $1.75 per chest. Fancy grades are somewhat scarce and are bringing the advance in price of $1 noted in the quotations. Pears are quite plentiful and are now being quoted in three grades. Apples are firmer in price and peaches are weaker.

Apples, choice to select, ₱ 50-lb box	85	@	1 25
Apples, good to choice, ₱ 50-lb. box	65	@	85
Apples, fair to good, ₱ 40-lb box	35	@	65
Blackberries, ₱ chest	1 75	@	5 00
Cantaloupes, pony crate	—	@	—
Cantaloupes, ₱ box	25	@	50
Crabapples, ₱ small box	75	@	1 00
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	1 00	@	1 50
Grapes, Seedless, ₱ crate	85	@	1 00
Grapes, ₱ small box	65	@	85
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ large box	75	@	1 00
Peaches, ₱ small box	50	@	75
Pears, Bartlett, fair to choice, 40-lb box	1 25	@	1 50
Plums, large, ₱ crate	60	@	85
Plums, ordinary, ₱ box	50	@	65
Raspberries, ₱ chest	5 00	@	7 00
Strawberries, Longworth, ₱ chest	7 00	@	9 00
Strawberries, large var., ₱ chest.	4 00	@	5 00
Strawberries, Santa Clara, ₱ chest	5 00	@	7 00
Watermelons, ₱ doz	1 20	@	2 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The dried fruit market is rather firm and stocks were still further reduced this week by a fair buying demand. Prices remain the same, though the market generally is a shade firmer. One thing which is expected to assist the local dried fruit market situation somewhat is the Government contract which is about to be let for furnishing the dried fruit for the Indians now on Governmental reservations. The contract includes 131,400 lbs. dried apples, 141,900 lbs. dried peaches, and 188,100 lbs. dried prunes. It is now estimated that the total shortage of the prune crop for the year will be from 25% to 40% of the average crop. Some packers have withdrawn from the market as sellers at any price, for the present, and others decline to entertain bids of anything below a 4c f.o.b. bag basis, which, it is predicted in some quarters usually conservative, will be the inside of the market by the time new fruit is ready for shipment in October.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes.	6	@	6½
Apricots, Royal, good to choice, ₱ lb	7	@	7½
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	5½	@	6½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	7½	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	8½
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½
Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.			

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

Stocks now in hand in this market are very light and prices unchanged. The old crop is practically sold out and jobbers are awaiting the arrival of the new crop and the action of the Association as to prices. That they will be higher there is no doubt, as there is no carryover and the new crop is reported short in some sections. Raisin growers are busily engaged in gathering their crop, and the picking season will be prolonged a few days because of the light crews. The crop is turning out better in many vineyards than at first predicted, many growers reporting that they have even better crops than last year. Last year the crop brought at least a third less than what is anticipated this season, owing to the higher prices. Buyers are already offering better than 4c for available crops, and the tendency is strong toward 4½ and 5c.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5		c
Fancy, 12-oz. Seeded	5½		c
Choice, 12-oz. Seeded	4⅝		c

Citrus Fruits.

The market is in good shape both as to quality of receipts and demand. Valencia oranges, the only variety now left in the local market, are still coming in, though receipts are inclined to be light and prices have advanced 50c. Lemons are weaker in price and limes firmer. The market is pretty bare of limes at the present time, but it is expected that as soon as the next steamer arrives, which will be in a few hours, with a cargo, prices will again weaken. Grape fruit remains steady.

Oranges, Valencias, ₱ box	2 50	@	4 50
Lemons, California, select, ₱ box	3 50	@	4 50
Lemons, California, good to choice	2 50	@	3 50
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	1 75	@	2 50
Limes, ₱ box	5 50	@	6 00

Nuts.

Prices for new crop paper shell almonds were announced Wednesday, and confirmation of orders has been quite general. Prices on the other varieties will be named within ten days. There is some talk of the different almond associations getting together to form a central organization similar to the walnut association, for the purpose of regulating prices. Walnut prices are expected to be named about September 23d. The outlook at present is for about two-thirds as many walnuts as last year with the quality better, though there will likely be more than the average quantity of small nuts. Prices will no doubt be higher than last year, and it is confidently expected that the association price will be 12½c or 13c per pound for soft shell. Buyers are already in the field trying to contract at any price below 11c.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½
Almonds, IXL, ₱ lb	12½	@	13
Almonds, Ne Plus Ultra, ₱ lb	12½	@	13
Almonds, Nonpareil, ₱ lb	14	@	15
Almonds, Languedoc, ₱ lb	—	@	8
Almonds, Golden State, ₱ lb	—	@	8
Hard Shell, ₱ lb	—	@	5¼

Wine.

The wine situation remains about as heretofore, although the crushing has begun at various points throughout the State. In some districts a shortage is reported and the present outlook is not so bright for large crops as it was some time back. In the Santa Rosa district wine grapes are now bringing from $16 to $18 per ton; in the Lodi district the price paid for grapes has been advanced to $14 per ton and some sales are reported at $16, and in Fresno regular wine grapes are bringing $12 per ton, with lower prices for other varieties. Prices of wine continue as heretofore, with practically no movement.

Trouble in the "Big Four."

San Francisco News Bureau, Sept. 13: A serious disagreement has taken place between the members of the "Big Four" in the dried fruit business. The firms involved are: Guggenhime & Co., Castle Bros., Rosenberg Bros. & Co. and the A. Gartenlaub concern. Three of the companies have accused the fourth of bad faith in its business dealings in connection with an agreement in buying this year's crop. Attorneys are being consulted, and there will probably be developments within a week in the courts. One of the firms stands to lose a forfeit of $25,000, by which each was bound to live up to the agreement regarding dried fruit buying and handling for the season of 1905. There is considerable speculation regarding the effect this trouble among the "Big Four" will have on the plan to organize a big fruit canning company in opposition to the California Fruit Canners' Association. It is altogether probable that there will be a serious break in the plans for handling next season's canned fruit.

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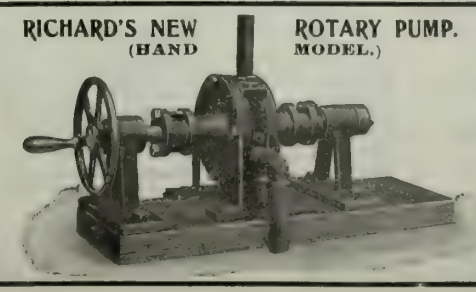
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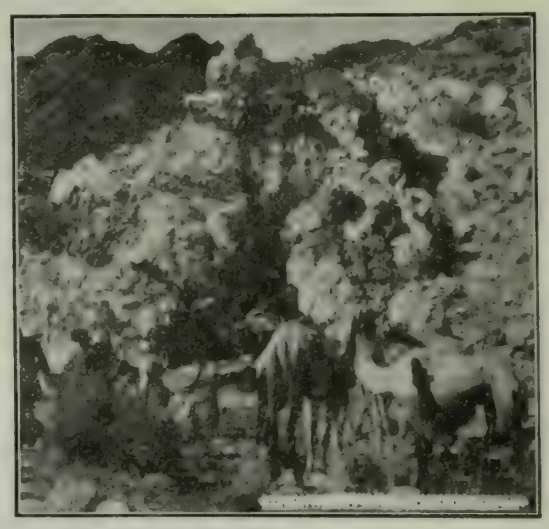
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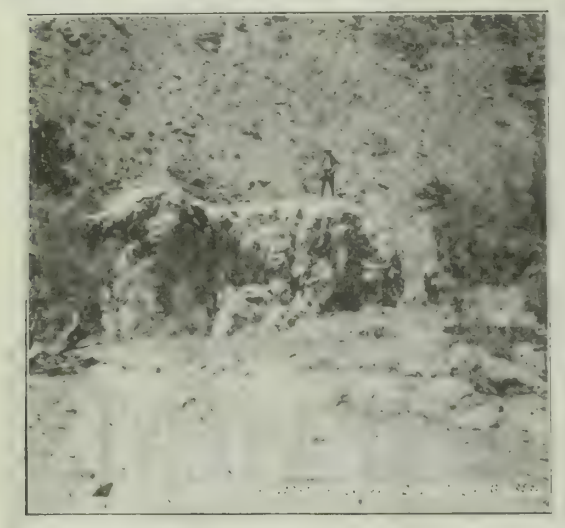
W. H. Shockley and Party.



Bad Trail for Camels.



Quartz Outcrop.



Quartz Outcrop.



The Guide.



Musa on His Lode.



Panning Samples at Abandob.



Juniper Forest, Hagar Nush.



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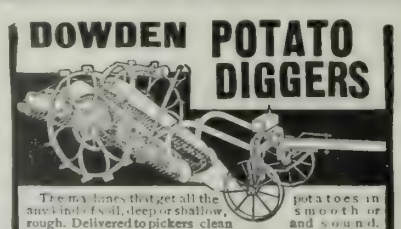
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THE STOCK YARD.

Great Stock Show at Portland.

The stock show dates at the Lewis and Clark Exposition are September 19th to 29th, inclusive. This is ample time. There will be room for 500 head of cattle, 300 horses, 300 sheep, 200 hogs and 150 goats, and there are enough entries to fill every stall.

The list of judges has just been given out by M. D. Wisdom, live stock superintendent, who says: "The judges are the most prominent and capable it is possible to secure, each being an expert in his own class. This assures absolutely fair and able judging of every entry."

Professors C. F. Curtiss of Ames, Iowa, and W. H. Dobson of Marion, Ohio, have been selected to judge Class A horses, and the other judges so far chosen are: W. O. Cowen of Chicago, Ill., and George F. Bellows of Marysville, Mo., Shorthorns; C. A. Spannard of Imporia, Kans., Hereford, Galloway and Polled Angus breeds; Prof. W. J. Carlisle of Fort Collins, Colo., Jerseys; Prof. C. S. Plumb of Columbus, Ohio, Holsteins; Dwight Lincoln of Milford Center, Ohio, fine wool sheep; Richard Gibson of Ontario, Canada, long wool and mutton sheep; G. G. Council of Vandalia, Ill., swine.

The entry list is now closed and indicates that the stock show would be the best ever held on the coast. Stockmen all over the United States have taken a keen interest in it from the first, and a very large attendance of Western stockmen is expected.

THE IRRIGATOR.

Objections to Sewage Farms.

To the Editor:—Reading in your ssue of Aug. 26th about the Pasadena Sewer Farm, I beg to-correct the impression which the writer gives that the sewage is "deodorized."

Being one of the neighbors and having had the free use of the sewage offered me, I have declined it on account of the odor, which is sickening. There is only one man in the neighborhood who uses it and he creates a public nuisance by doing it.

The county road divides the farm and I have never driven by when the sewage was running on the windward side but what my nostrils have been assailed by every disgusting smell under the sun.

Several of the neighbors, who under no circumstances would "eagerly avail themselves" of the use of the vile stuff, have protested to the Pasadena authorities about using it without first running it through septic tanks, but to no avail.

They are at present running it in the bottom of a sandy wash. Do you think that will improve the health of the people who have wells near the same wash lower down? I venture to predict that, as the country around the farm settles up more, Pasadena will have to discontinue using the sewage or change their method. W. O. Stevens.

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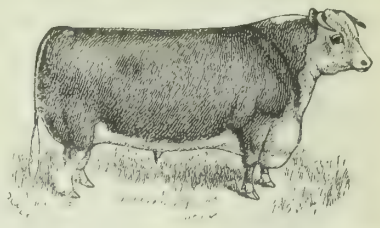
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Dr. B. J. Kendall Co., Enosburg Falls, Vt. Colfax, W. Va., February 16, 1904.
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DR. B. J. KENDALL CO., ENOSBURG FALLS, VT.

SHEEP AND WOOL.

Breeding of the Angora Goat.

From "Practical Angora Goat Raising," by C. P. Bailey & Son of San Jose.

There has been much vagueness as to what points the breeder should try to produce. Some have claimed that the most profitable animal to raise was one producing heavy, ringletty fleece, regardless of the quality of the fleece, except, of course, it should be as free from kemp as possible. This day has passed. We know what the mohair is used for, and know how it is prepared for manufacturing. The future may change these uses or methods, but we know what we want now, and we know how to breed our goats to produce the most money per head for the present at least. Fashions vary—and the fashions vary the demand for certain grades of mohair. Coarse fibered, long staple, fine luster mohair, possessing a great amount of tensile strength and elasticity will make good braid yarns, but if braid yarns are not in demand, such fibre is not the best for plush or dress yarns. Fine fibered, long staple, pliable, lustrous, easily spun yarn can be used for braid stuff, or at least part of the fleece will be heavy enough for this purpose, and the finer parts have such a variety of uses that they spin yarns which are always in demand. Looking at the question from the manufacturing standpoint, we see that the most staple product is the fine fibered mohair. But a producer might have animals which would shear 2½ pounds average (the average of the Turkish flocks) of very fine mohair, while another grower might have animals which would shear 4 or 5 pounds average of coarse mohair. And even though the value per pound of the coarse mohair may be considerably less than that of the fine mohair, the grower owning the coarse haired, heavy shearing Angoras will realize more money per head for his clip. The value also of the carcass and skin of the Angora is of importance. A heavy carcass and a large skin are of more value than a light carcass and a small skin.

If the Angora breeder would produce the animal which will yield the most money per head, he should aim to pro duce an animal which would shear the heaviest fleece of the most marketable mohair, regardless of fashions, and one which, when put upon the market, will dress the most possible pounds of desirable meat, and yield a readily marketable skin. There are not many such animals upon the market to-day, but the time is coming when there will be plenty. We have the fineness of fiber; we have the covering of the animal and the size and stamina of the individual; we have density of weight and fleece, and we have breeders who are endeavoring to unite combinations to produce the Angora of the future. But while we are without the ideal, one should choose that point which is hardest to attain, most necessary for the best paying animal, and work especially for that. That point is fineness of fiber, always remembering freeness from kemp. There are many large goats, many heavy shearing goats, but there are very few fine fibered goats comparatively free from kemp. One should not make the mistake of neglecting size and weight of fleece. There are few animals which will respond more rapidly to careful crossing than the Angora goat. A buck will usually stamp his individuality upon every kid, hence the necessity of carefully selecting breeding stock.

The period of gestation varies slightly with the individual, but the average may be approximately stated as 147 days, or about 5 months. Both the bucks and does have a breeding season, but this season may be changed or varied by different elements. As a rule the bucks commence to rut about July or August here in America, and the does soon after the time the bucks commence. Some bucks which have been allowed to run with the does all the time never cease rutting, and the does conceive about every 6 months. The does come in heat about every 14 days, and remain in this condition for about 3 days. If the bucks are allowed to run with the does, one buck should be used for about every fifty does. If the buck is only allowed to serve the doe once, a grown animal will serve 150 does in 40 days without permanent injury to himself. The does conceive at the age of about 7 months, and the bucks breed at about the same age, but the wise breeder will not sacrifice the individual by interfering with its development. Both the buck and doe should not be bred until they are at least a year old. The bucks should be fed at breeding season and, if one has a sufficient number of bucks, it is well to turn the bucks with the does in relays. It is advisable to have the kids start coming slowly, so that one may get new men trained to handle them properly. One or two bucks turned with a flock of 1000 does for a few days and then allowed to rest, and a new relay of three or more bucks turned with the does to be removed in a few days, and a new relay being introduced into the flock will do more satisfactory work than they would if all of the bucks were turned in at one time. The same principle can be applied to smaller flocks. The does should be protected from cold storms or rough handling when they are heavy with kid, else they are liable to abort. If for any unusual cause the doe aborts one season, there is no reason why she will not carry her kid until full term another time, and experience has proven that she will.

The breeding of registered stock, or stock of known ancestry, requires much care and quite different handling. Both the does and the bucks must be marked with an ear tag, brand, tattoo number or some other permanent individual mark, and the kids should be marked at birth. Fifty known does may be put in a pasture or pen and a known buck put with them. He should be allowed to run with them at least 40 days. After this the does may be collected into a flock and several bucks turned with them, but only the kids which are dropped from a known buck are fit for record.

A more accurate method, and one which can be used with a large flock, is to place the bucks in a corral adjoining the one used by the does at night. The does should be brought into their corral early in the evening, and all of those in heat will work along the fence next to the bucks. The doe in heat can be caught and the number taken and recorded in a book. She is then taken and placed in a small pen with a buck and his number recorded with hers together with the date. If the doe does not conceive, she can be put with the same buck again at a later date, and one has approximate knowledge of when she should drop her kid. In this manner a buck will serve about two or three does in the evening and one or two in the morning. The kid is marked at birth and the number recorded after that of the mother. The breeding of recorded stock is of value only for special reasons and is not advisable with large flocks, as it is expensive.

THIS SKIMMING MACHINE takes the cream from the milk quicker than wringers squeeze water from clothes. It gets **a quarter to a half more cream** than by setting, because it uses centrifugal force—a force thousands of times stronger, quicker, more effective than the force that makes cream rise in pans.

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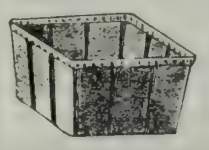
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FRUIT PRESERVATION.

Making Cider and Vinegar on the Farm.

Mr. L. R. Bryant, secretary of the Illinois Horticultural Society, Princeton, Ill., in the Apple Specialist, says:

It will be conceded that in the taking up of specialties or side lines, or in the manufacture of by-products on the farm, the farmer must have a liking or fitness for that specialty, and must give it such care and attention as will produce a product of good quality or the undertaking will not be successful. Especially is this true of cider and cider vinegar making, particularly since the passage in many States of stringent laws regarding the strength and purity of vinegar. If these essentials cannot be complied with, it will be far better and more profitable to dispose of the surplus apples to some one already engaged in the business than to turn out an inferior product.

Proximity to a good cider mill should be taken into consideration, as it is useless to try to make up a quantity of cider on a small hand mill. It is too slow; it is too hard work; it will not make nice clear cider. It is essential in the making of good cider and good cider vinegar that clean, sound apples be used; rotten, dirty apples, leaves, trash and grass will affect the flavor and quality unfavorably. Small apples are all right, if matured, and the dropped ones can be utilized, but care should be taken in assorting them. The juice of early apples is deficient in saccharine matter, and will not make cider that will keep or vinegar of the necessary strength. But it can be mixed with that from late apples for vinegar.

Cleanliness is an important feature in all processes of cider and vinegar making, and care should be taken to keep all utensils clean and in good condition. Cider and vinegar should not be allowed to stand in metal vessels. All barrels and kegs should be thoroughly cleaned as soon as emptied. A small chain is very convenient for this purpose, putting it in the barrel with a pail or two of water and shaking thoroughly, so as to reach all parts. If barrels are not to be used immediately they should be placed with the bunghole down, so that they may drain out thoroughly dry, or they may become musty, and a musty barrel will soon spoil its contents.

In making vinegar, commence with the earlier apples as soon as they are matured, sorting them as noted above, putting the fresh juice, as soon as made, preferably in open tanks covered with a thin cloth to keep out insects, adding fresh juice from time to time as made. If tanks are not available put the juice in barrels, leaving the bungs out and keeping them filled up during the first fermentation, so that the impurities may work out through the bunghole.

For convenience have the barrels or tanks raised from the ground about 2 feet, so that the contents may be racked off directly into other barrels, with a hose used as a siphon, or with a faucet. Racking with a siphon is a very convenient way, as it is quickly done and saves much time and trouble. Hose used for this purpose should be about ¾ inch in diameter, stiff enough not to kink or collapse, and 6½ to 7 feet long. In use raise the end of the hose about an inch from the bottom of the barrel which is being drawn from, so as to not disturb the sediment which may have accumulated.

When the first fermentation is fully completed, and the juice is settled and clear, it should be racked off into clean barrels and the empty ones thoroughly cleaned, ready to be used again. These barrels should be filled only about three-fourths full, and should be racked up in a warm place for the winter. A furnace-heated cellar is a good place, but a cool cellar will not facilitate vinegar making.

If a warm room is not to be had, use a shed enclosed on all sides, so that it may be darkened in warm weather to keep out flies, and from beetles, which bore into the heads and staves of the barrels, causing much trouble and waste from leakage. It is not advisable to rack up the barrels outside in the sun, as they will be apt to be infested with borers, and the sun will warp and shrink them and much of the stock will be wasted.

This shed, being in a position exposed to the sun, will become very warm in the summer, and the stock may be left in it until turned into vinegar. Remember that exposure to heat and the action of the air is what causes acetic fermentation, or the process of vinegar making. Therefore keep in a warm place and have the barrels not over three-fourths full. When the vinegar is fully made, rack off again in other barrels, for sale or storage, mixing the contents of several barrels so as to have uniformity of strength and color.

If desired the "feeding process" may be used. Have one or more barrels three-fourths full of finished vinegar to start with. At intervals draw off a certain small amount for sale or storage until wanted, and add the same amount from the stock barrels, being careful to put in nothing but clear, sour stock. This, if in a warm place, will quickly turn to vinegar, when the process may be repeated, being careful not to add too much at a time or too often; this to keep up the strength.

Most States now have laws defining the strength of vinegar which may be sold. These should be strictly complied with. To do this a vinegar test should be provided which can be procured cheaply, with directions for use. Always remember that clear, sharp vinegar is what is wanted, and the low-grade cloudy goods are not in demand.

In making cider for use as a beverage or to keep during the winter months, a treatment almost directly opposite to that intended for vinegar is necessary. Good, keeping cider can not be made in warm weather. For winter use it should be made as late as possible, preferably in freezing weather, out of good apples, of course, and racked off after being allowed to settle two or three days, after which, if it can be exposed to cool weather and allowed to thoroughly chill, then stored in a cool place it will keep a long time without fermentation. When stored cider is better racked up, as directed for vinegar, and after it has lain for a considerable length of time should be racked off when moved. The barrels should be kept full and bunged tight unless there is danger of fermentation, when vent must be given.

To be kept absolutely sweet for a long time cider must go through a pasteurizing process or else some preservative must be used. Pasteurizing cider requires considerable apparatus and outlay.

IN another part of this issue is an attractive advertisement issued by The American Steel & Wire Company, manufacturers of American Fence. It is headed "American Fence Talks by the Makers, and sets forth some interesting statements." If you don't find a dealer in your own town that handles this fence, write The American Steel and Wire Company direct and they will send you a catalog and direct you where you can get their fence. Their address is The American Steel & Wire Company—your letter may be sent to their nearest address to you—Chicago, Denver, New York or San Francisco.

FRED H. CHASE & CO., 1732 Market Street, San Francisco, say that the cattle sale they advertise for October 19th is not a "culling-out" sale, but the first of a series of annual sales which Messrs. Rush & Pierce will hold. The herd is becoming so large that they have adopted this method of disposing of the surplus stock. That the owners will try to make an impression among the cattle buyers at this sale is evident.

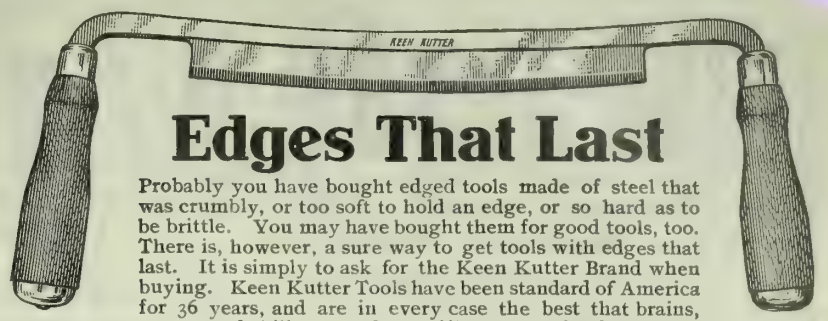
WILLIAMS' SHAVING SOAP is made especially for shaving tender faces, and yields a rich, lasting lather, and leaves the skin soft and velvety. As per their offer in another column, the J. B. Williams Co., Glastonbury, Conn., will send you a free trial sample. "Be fair to your face."

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Bears twelve months in the year from the same hill if not killed by the frost. A prolific bearer. Sends out plenty of runners. Large berry, well flavored. A self-fertilizer. Have a few thousand plants for sale this autumn. Send for price list to
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High-grade budded and grafted trees of all best varieties.
770 acres in Pecans.
Write for Catalogue "J," *with which is incorporated a valuable treatise upon Pecan Culture.*
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Probably you have bought edged tools made of steel that was crumbly, or too soft to hold an edge, or so hard as to be brittle. You may have bought them for good tools, too. There is, however, a sure way to get tools with edges that last. It is simply to ask for the Keen Kutter Brand when buying. Keen Kutter Tools have been standard of America for 36 years, and are in every case the best that brains, money and skill can produce. They are made of the finest grades of steel and by the most expert tool makers. As a complete line of tools is sold under this brand, in buying any kind of tool all you need remember is the name

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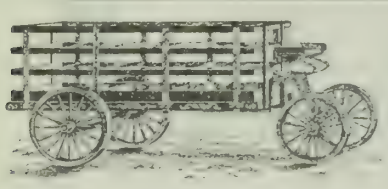
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This truck is the result of years of endeavor to produce a wagon that has great carrying capacity, ample strength without superfluous weight, low enough to the ground to minimize the labor of loading. Can turn short among trees, and can be used on the roads as well as on the farm.

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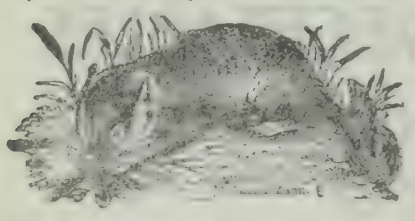
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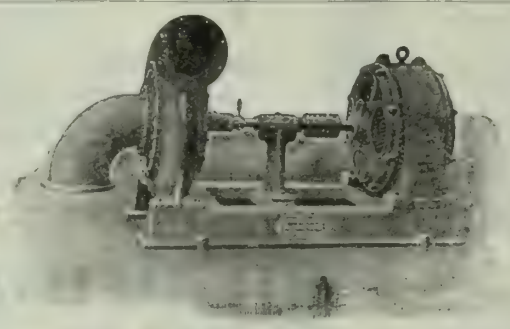
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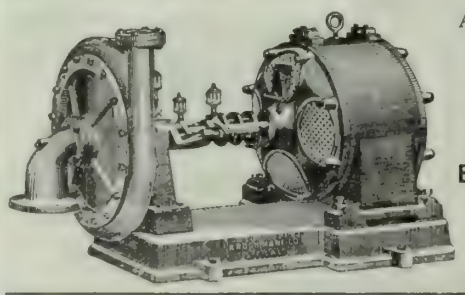
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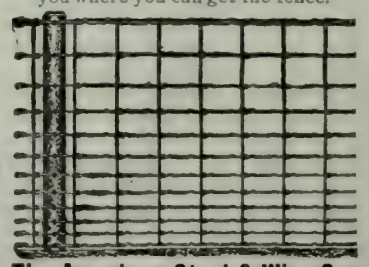
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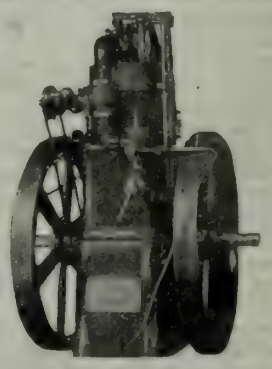
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 13. SAN FRANCISCO, SATURDAY, SEPTEMBER 23, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

In the San Jose Orchards.

The pictures on this page continue to enforce the view that good fruit is the only kind worth growing, and also give suggestions as to how good fruit is grown. The pictures show trees in the Flickinger orchards and serve to illustrate further the policy observed by the managers of that property, who can their own fruit and therefore have the double views of growers and canners condensed in one ownership. They get a sort of binocular view of fruit growing, and as a binocular instrument is held to give a better rounded image than one secured with a monocular affair, it is to be inferred that they see the chances of profit and the ways to secure it from all sides. Their experience seems also to demonstrate that it is to the mutual interest of all sides that the fruit be of the highest excellence. In connection with the earlier pictures in this series, we cited the facts that the best fruits are obtained by irrigation and by fertilization, when these things are required; by thorough and constant cultivation, severe and intelligent pruning, and by keeping the trees strong and thrifty and in condition to produce the very largest and finest fruits. After the fruit has set nature is assisted by carefully thinning the trees—that is, picking off a majority of the fruit, and leaving the balance so uniformly distributed over the tree that each twig and branch will bear its just proportion of the burden. After the fruit has grown to maturity, skilled men select from each tree only such fruit as has reached that highly colored, rich, juicy, luscious condition. This is done each day during the season until all has been picked in just exactly the right degree of ripeness. After the fruit is picked it is immediately taken to the cannery in wagons having the most delicate springs, and over roads that are as smooth as a floor, carefully watered and free from dust. After the fruit is weighed into the cannery it is carefully and skillfully graded, selecting only such as reach a high standard, and sending the rest to the drying ground to be dried in the sun.



Picking Green Gage Plums in the Flickinger Orchards Near San Jose.



Good Form of Low Branching and Low Bearing California Peach Trees.

The trees in the pictures show trees which have been handled in the ways described, and the fruit being gathered shows the advantage of it. Note the size of it, each after its kind. The plums show their appreciation of a good chance perhaps more strikingly, for plums are so apt to string themselves like beads, and thus force them to bead-like size. Two and one-half acres of trees like the one shown in the picture produce usually about thirty tons of fruit, so it is clear that gross weight is not lost by growing fewer and larger individual fruits. The peaches in the other picture tell the same story.

Note the other evidences of wisdom in these trees—the low branching, which brings so much fruit within reach from the ground, and the growth of new wood low down, so that continuous bearing near the ground is assured. Note also the clean cultivation, the absence of rough ground and weeds and the blanket of fine earth which protects from evaporation the water gained by rainfall, and by winter irrigation to supplement rainfall, which is very widely practiced in the San Jose district.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, SEPTEMBER 23, 1905.

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The Week.

The weather continues to be of California's best, and the aggregate value of products which are brought each day out from under the sky into the warehouse or into the car, is very great. Although showers fall here and there in the northern extremities of the State, they reach only the pasturage regions of the coast or the picturesque regions of the mountains—the valleys are still given time to harvest their perishable products and to push them into trade. Fruits are still going East at a rattling rate and are still selling well. Eighty-one carloads left Sacramento in a single day. Grapes are doing exceedingly well, and promise to compensate for all deficiencies in the earlier shipments of other fruits. It will soon be tree planting time again, and there promises to be a quick demand for nursery stock. This year's prices will restore confidence and many growers will desire to increase their acreage on lands which they have demonstrated to be suitable, and the multitude of new Californians who are improving their recently purchased homesteads will call for many trees. Our usual advice to planters not to delay until the most popular varieties are covered by orders must be given with renewed emphasis this year. Make up your mind what you want to plant and look for the announcement in our advertising columns by those who offer trees and have your order booked without delay. It is the early buyer who gets the good trees whenever their is a rush, as there is likely to be this year. It is also the early advertiser who gets the best trade and is not left in the lurch while more active, energetic men are filling orders. It is a very good thing in California to be early, for although the length of the planting season does favor the slow man, because it gives him a chance to save his bacon, horticulturally speaking, it also favors the prompt man, because he gets his bacon clearer and thicker and richer—horticulturally speaking again.

The wheat trade is running largely on northern coast wheat, because there is so little California product in sight. There is a southward rush of this grain which helps the bears. Futures are somewhat unsettled, owing to all kinds of rumors of the northwestern crop, which affect the Chicago market and find sympathy here. Barley, on the other hand, is still active and confident because supplies are small and sales good. Seed oats are still high, and the best have a good outlook. Corn is slack in both supply and demand. Rye is promising, because of small receipts. Beans are dropping, as the new crop is appearing in increasing quantities. Millstuffs are in request, with a light supply. Hay is rather dull locally, but an export demand is arising and supplies of fine grain bay out of storage is thought to be rather small. Alfalfa hay is coming in very freely. Beef and hogs are unchanged—mutton is firmer and veal weaker. Butter is advancing, and cheese is firmer. Eggs are in active demand all around. Poultry is still doing well, although much more Eastern has come in. Potatoes are steady, and shipping is going on. Oranges and pomelos are improving, but lemons have weakened. Deciduous fruits are selling well and apples have a good outlook, while grapes are in less request at present. Dried fruits are quieter this week, but prunes are still strong. Raisins are late, but prices for bleached goods are given in our Market Review this week. New almonds are arriving freely. Comb honey is firm and extracted is well held and should improve. Hops are still being strongly supported against an active bear pressure, and the future is still to be seen. Wool is very quiet, as growers are resolute and buyers inactive.

It looks as though this would be a great apple year for California. The product is large in the places where they know best how to grow and handle apples, and the Eastern crop is short, at least in spots. Mr. C. H. Rodgers, president of the Pajaro Valley Fruit Growers' Association, told us the other day that he expects to see over 1800 carloads of apples go out of the State from this year's crop.

We were in San Luis Obispo on Monday and had the pleasure of a visit to the California Polytechnic School, which our readers will remember is a rather new State institution established for industrial education, taking pupils at their completion of the grammar grades. Though it teaches various arts for both men and women, it is largely on an agricultural basis, and is situated on a fine farm overlooking the town of San Luis Obispo. We were glad to see that the attendance at the term which has just opened is largely increased from last year, and enrollment will pass 100 before the term progresses far. The young men and women are from different parts of the State, and the school will soon be one of our best-known institutions—and upon the testimony of its success we expect that many similar schools will be undertaken in the several valleys of the State. The director, Leroy Anderson, expresses himself greatly pleased at the provision for an enlarged corps of instructors made by the trustees, and he feels that his pupils are being well handled in all lines, from agriculture, mechanic arts and electricity to the feminine lines of domestic science and practical home making. The school is a splendid place for young people who want to take up practical arts in the most direct way. New buildings and equipment, provided by the last Legislature, are now being proceeded with, and the year promises to be notable in the history of the institution.

Californians will take courage at the declarations of President Roosevelt to those who are to push the Panama canal. California has been waiting for it for a generation and is getting into somewhat of a hurry for it now. He tells the engineers that he also wants the canal without undue refinements. He says:

There may be good reason why the delay incident to the adoption of a plan for an ideal canal should be incurred; but if there is not, then I hope to see the canal constructed on a system which will bring to the nearest possible date in the future the time when it is practicable to take the first ship across the isthmus; that is, which will in the shortest time possible secure a Panama waterway between the oceans of such a character as to guarantee permanent and ample communication for the greatest ships of our navy, and for the largest steamers on either the Atlantic or the Pacific. The delay in transit of the vessels, owing to additional locks, would be of small consequence when compared with shortening the time for the construction of the canal or diminishing the risks in its construction.

In short, he wants the canal over a hill, if that is the quickest and safest way, or down to sea level, if it must be that way, but he wants the canal first, last and all the time. That is about the way California feels about it also.

QUERIES AND REPLIES.

Nematodes Found.

To the Editor:—I hasten to send specimen of diseased root, in reply to your suggestion in last week's Pacific Rural Press. The trouble is spreading rapidly. No one in this vicinity seems to have experienced or heard of a like scourge. I find upon examination that the roots are filled with minute white eggs. No insect life has been found in the soil as yet or none such as would infest the roots. I have taken pains that the plants should not be scattered and shall destroy all by fire. I shall await with interest and impatience the result of your investigation, for my garden represents much expenditure of time and strength, and has been my pride.—Amateur, San Diego.

Examination of the roots shows that the injury is being accomplished by nematodes. These are exceedingly minute, thread-like worms which are difficult to see without a magnifying glass and the swellings in the roots are due to their attacking the tissues for the purposes of feeding and to secure a hiding place for reproduction. The roundish, egg-like bodies which you mention are the worms themselves in a certain stage of development. These worms are exceedingly difficult to reach by any killing treatment. They are supposed to be destroyed by the application of soot from the stovepipe or chimney or by the use of a soluble nitrate, like the nitrate of soda, and it is an old garden practice to use these materials carefully around plants for the purpose of protecting them against the nematodes. These materials, however, have to be applied with caution, because in excess they are themselves destructive to plant life. On the whole, probably, the best treatment for nematodes in California is to put the land through a summer fallowing, ploughing or digging it up as loosely as possible and allowing it to be thoroughly heated and dried out during the summer and then restored to garden uses the following year. Meantime garden vegetables should be planted on another piece of land. In this system of rotation, either resorting to this summer fallowing or to the growth of a crop of hay and turning up the soil to the sun when the hay is gathered, it is possible to plant the vegetables each year on ground not occupied by them the year before, and in this way to clear out these destructive pests. It is practically hopeless to undertake the growth of garden vegetables on soil in which these nematodes are abundant.

Small Fruit Growing.

To the Editor:—I am about to embark in the business of raising berries for the market. I am a city man but want to go farming; almost all my experience has been gained by tilling the soil of a town lot. I wish to pay particular attention to the culture of loganberries and blackberries. Can you suggest any books to read on this subject or give any information in regard to soil and climate suitable to berry culture? I have been looking at some land in Contra Costa county, situated in a small valley which is deep sediment soil; this strikes me as being ideal land for berries, but prefer, for the sake of good health, to live on hill land on account of better drainage, etc.—Beginner, Oakland.

The methods of growing these plants are continually discussed in our columns, and our book "California Fruits" discusses them in detail. You are right that good bottom land is generally best for small fruits because it is rich and moist and easily worked, but of course you can grow berries on uplands if they are not too heavy clay to make it difficult to work them well, providing you can supply the plants with irrigation water as they need it. One cannot do very much in California in growing small fruits either on uplands or bottom lands without a certain amount of irrigation water available. There are many places in the State well adapted to this industry. It is usually better, however, to locate near places where this product has already reached considerable extent because the marketing of this product is better provided for.

Anti-Squirrel Virus.

To the Editor:—Can I get virus from the University to kill squirrels and gophers? I am told that they have such a thing which distributes disease among them.—Reader, Contra Costa.

The University has no virus for killing squirrels and gophers, nor have they ever distributed any, although they have the credit for doing so. No virus has yet been demonstrated to be satisfactory, although experiments have been made, and the Pasteur Vaccine Company of San Francisco had such a prepa-

ration which they called "Squirrelin." They might still be able to supply you some of this for experiment.

Scars From Pear Scab.

To the Editor :—I am sending you by mail three Bartlett pears, which are covered with a kind of scab. If possible I would like to have you inform me what the trouble is and the remedy. Quite a large number of my pears were affected this way this year, and as they are unmarketable the waste is considerable. This occurred on two different orchards, one of which has been more or less neglected in the past, but which had good care and an abundance of water this year; the other orchard has had the best of care and plenty of water during recent years—while a few other trees in an isolated orchard that was not cared for at all had very smooth fruit, so I cannot attribute the trouble to lack of care or water.—Grower, Little Rock.

The pears were affected early in their development by the pear scab. In the Pacific Rural Press of February 11, last, you will see this condition described and accounted for, and you will also find descriptions of remedies, which, if applied very early in the growth of the fruit, will prevent its injury in this way. Culture is not involved in the matter. The scab is a parasite which will attack pears under all treatments, providing atmospheric conditions are favorable to it. In some places the conditions early in the season are right and the scab starts; subsequently it becomes too dry and hot and the scab gives it up, but its wounds remain and distort the fruit, with the result which you well describe. The lesson is to get your preventive work in ahead of the scab.

Sheep for Fern Clearings.

To the Editor:—I note what you say in last week's Pacific Rural Press about goats for fern clearing, and will state further that there is a ranch about midway between Petaluma and Sebastopol, on the new electric system, near the station of Mecham, owned by Mr. Mecham. This ranch contains about 5000 acres. They are in the stock business, and keep mostly high-bred sheep. They have followed this business for a number of years. Mr. Frank Mecham tells me that sheep will eat these ferns, provided they are burned off and the sheep allowed to eat them just as they are springing up and while they are green and young. He says pasturing sheep constantly on the land in this way, first in one inclosure and then in another inclosure, as the ferns spring up, will kill out the ferns. Would you not, therefore, believe that pasturing sheep upon them would answer every purpose that pasturing goats would accomplish, and would it not be far more practicable? Mr. Meacham also suggests the idea of planting in among the ferns either black Texas mesquite grass or Australian rye grass. He thinks either of these grasses would grow if scattered among the ferns as they now exist, and that if allowed to develop fully would choke the ferns out—what do you think of this idea?—Owner, San Francisco.

Mr. Mecham is a good agricultural authority and is perfectly right about the successful subjugation of ferns with sheep. We mentioned goats because we thought it might suit you to put goats upon the land without the clearing process, for they will make away with rough vegetation which sheep will not attack. If you will clear up the land in the manner which you state, the sheep will do; and the idea of sowing mesquite or Australian rye grass is a good one. Sown at the beginning of the rainy season, these grasses will make a very good growth and will result in permanent pasturage, providing you can use water enough to save them from dying out in the dry season.

Suckers and Grafts.

To the Editor:—Two years ago I wrote you for information concerning grafting trees, etc., and received such valuable information that I again come to you concerning those same grafted trees. Those that were grafted a year ago last March have a great many shoots or suckers growing from the ground up, all along the trunks and limbs. They were Centennial cherries and were grafted to Royal Anns. The man who has the care of the place has not cut off any of these suckers and feels uncertain when it ought to be done. Will you kindly instruct me as to when and how it ought to be done to get the best results?—Owner, Alameda county.

All shoots and suckers from below the graft should be removed as soon as they appear, providing the graft is growing rapidly and seems able to receive the full sap pressure. When grafts in old trees are just starting it is sometimes desirable to allow some suckers to grow for fear the grafts may be drowned out by the excessive sap flow, but whenever this early danger has passed by all growth below the graft should be removed. If your grafts have made satisfactory growth with all this lower growth drawing upon the strength of the tree you are very fortunate. The whole thing should certainly be cleaned up this winter and the stems whitewashed if there is any danger of sunburn by removing the shade supplied by the sucker growth.

Barnyard Manure for Walnuts.

To the Editor:—I have a walnut orchard planted in rather light, sandy loam. I wish to ask your advice in regard to fertilizing the trees with barnyard manure. Will it be necessary to have a sample of the soil examined?—Grower, Compton.

There is no doubt whatever that the application of barnyard manure to the land which you describe would be useful. It is not necessary to undertake analysis of the soil to determine this fact. Stable manure would not only convey to your walnut trees plant food which will help them in their growth, but if wisely applied will tend toward the general enrichment of the soil in humus, and in that way increase its moisture retention, etc. Application can best be made upon the surface at the beginning of the rainy season, the material to be covered in during the winter plowing. The application of barnyard manure to a light, sandy soil for the growth of shallow rooting plants like grain is sometimes at first rather a disadvantage, because the coarse material makes the soil more loose and liable to dry out near the surface, but for deep-rooting plants like walnut trees this feature does not enter. You can apply barnyard manure to the amount of ten or twenty tons to the acre, or even more if available, but you must be careful about buying barnyard manure for this purpose, because it is exceedingly variable in composition and very easy to pay more than the material is worth.

Hops on High.

To the Editor:—Will hops do we'l at an altitude of 6000 feet above sea level? I have a ranch at that height, nice sandy loam, and water 12 feet from surface. I can irrigate. The last frost is about the last of April and first frost about the middle of September to first of October. There is no rain during hop-picking season. Alfalfa does well. Also, would hops do well if the roots are set out in the fall?—Farmer, Ukiah.

The soil which you have described would be fine for hops and other conditions presumably favorable. The hop is a slow plant to start in the spring time and would probably remain dormant until safe. Hops are, in fact, grown in many places which are rather frosty for other tender plants, because they are so deliberate in starting into growth. At the same time we do not know of any plantations at such an altitude as you speak of, and would consider it safe to make a small experimental plantation before undertaking much investment in that line. Planting toward spring after the ground gets into good condition after the heavy winter rains is generally best.

Bermuda Onions.

To the Editor:—Will you please tell me where I can gain a little information about the Bermuda onion—i. e., the soil best adapted to success, when to plant, length of time it takes to mature and where to get the best seed? Also, if they are subject to frost and rains.—Enquirer, Morgan Hill.

The Bermuda onion has never made an impression in California, as our large commercial crop consists entirely of other varieties, and there is presumably some superiority in these other varieties for our conditions. The Texas Agricultural Experiment Station at College Station, Tex., has done something with Bermuda varieties, and possibly you could get interesting reports by addressing that station. California methods with onions and the varieties commercially grown are given in our book on "California Vegetables."

A Troublesome Sedge.

To the Editor:—I enclose sample of grass which has got a start here, and I am afraid it is something I do not want. It seems to come from a little bulb, and then the roots spread out and each one makes a plant. It grows very rapidly and is hard to kill out. —Subscriber, Diamond Springs.

It is a sedge or carex. Sedges cannot be eradicated by mere hoeing or pulling, since the stems grow from perennial underground root stalks, which readily send up new shoots to take the place of the old. They grow only in moist soil and it is, therefore, sometimes possible to kill them by thorough draining. Its growth in fields may be checked by plowing and the cultivation of hoed crops, but unless this is persistently followed up the sedge will again gain control. It forms a good sod and makes an excellent forage plant for moist places.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 18, 1905.

Alexander McAdie, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather prevailed during the week, with warm days and cool nights. Grape picking is progressing rapidly and heavy shipments are being made. Tokays are coloring rather slowly. The yield of wine grapes is about the same as that of last season. Wine making has commenced. Deciduous fruits are nearly all gathered and drying is still progressing; there is almost an average yield in some sections and the fruit is of good quality. Oranges are in first-class condition and a large crop is expected. The almond crop is very heavy in some sections. Hop picking is nearly completed and baling is in progress; there is an average crop in most places and the quality is good. Dry seeding has commenced. Beans and corn are in good condition.

Coast and Bay Sections.

Clear and warm weather prevailed most of the week in all sections. Light rain fell in Mendocino county Tuesday morning. Conditions were very favorable for late fruits, grapes and fruit drying. The prune crop in the Santa Clara valley is lighter than last season's, but of good size and quality. Apples are reported the best ever known in the Watsonville district, being free from worms and an unusually heavy crop; they are also excellent in Santa Clara and Humboldt counties. Large shipments of apples, grapes and dried fruits are being made. Grape harvest continues and the yield is good in most places. The melon crop in Sonoma county is very heavy and of good quality. Cloverdale oranges are in excellent condition. Hop picking and baling are in progress; the yield is about average, though lighter than expected in some places. Bean harvest has commenced in the south, where a heavy crop is probable.

San Joaquin Valley.

Clear weather prevailed during the week and conditions were favorable for raisin making and fruit drying, although the temperature was somewhat below normal. Most of the first crop of raisins is on the trays and will soon be ready for the packing houses if warm and clear weather continues. Wine grapes are being gathered and sent to the wineries, which are now running to their full capacity. Raisin, wine and table grapes are excellent in quality and the yield is nearly average in some places. Prune picking is almost completed and drying is progressing favorably. Oranges continue in first-class condition and a heavy crop is expected. Melons are abundant and of good quality. The fourth crop of alfalfa is being harvested. The grain in warehouses is said to be very light as compared with last year. Hay is abundant, but shipments at present are rather light. Large quantities of potatoes are being shipped from Stockton.

Southern California.

Warm and clear weather continued during the week, with cloudy or foggy nights in the coast districts. Grape picking is progressing rapidly and raisin making has commenced; the crop is not unusually heavy, but the grapes are of excellent quality. Apples and late peaches are being harvested in the foothill districts and they are reported an excellent crop. The weather was favorable for oranges, which are making satisfactory progress and give promise of an unusually heavy yield. Walnuts are beginning to open and picking will commence soon. Early dates at Mecca are ripening. Bean harvest has commenced in Ventura county, where the crop is reported good. Sugar beet harvest continues. Irrigation water is plentiful. Quail are keeping orchards and vineyards comparatively free from insect pests.

Eureka Summary.—The weather along the coast was generally favorable during the week. Continued warm and dry weather in the interior, where feed is short. Late varieties of apples are good and shipments are large.

Los Angeles Summary.—The mountain apple crop is being harvested under favorable conditions; the crop is large and of good quality. Grapes are plentiful; size and quality good. Oranges are not maturing as rapidly as last season and Thanksgiving shipments are not expected to be as heavy.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Sept. 20, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	02	.75	1 04	62	46
Red Bluff	.00	.00	.11	.61	94	58
Sacramento	.00	T	.07	.31	94	52
San Francisco	.00	T	.08	.33	84	52
Fresno	.00	.00	.00	21	98	56
Independence	.00	T	.14	.25	84	52
San Luis Obispo	.00	.03	.06	41	86	50
Los Angeles	.00	.00	.17	.15	78	54
San Diego	.00	.16	T	.13	78	58
Yuma	00	.02	.81	.62	106	62

HORTICULTURE.

Burbank's Thoughts on Plants and Men.

From an address by Mr. Luther Burbank of Santa Rosa at a dinner in his honor tendered by the California State Board of Trade.

I was brought up in a family like most of you and my eyes have always been wide open when something appeared which promised to be useful to myself or others. Among other things flowers and children never escape my notice, but children respond to 10,000 subtle influences which leave no more impression on a plant than they would on a sphinx. You may say, "Well, what do you know about children?" Anything we love, we study, and I have observed that in searching for good teachers you do not choose parents of large families on account of their superior knowledge of children. You generally select those who have no families of their own, do you not? Therefore, as one of the latter class, I claim the privilege of stating a word for the helpless little victims.

Some time ago I accorded a St. Louis clergyman a five-minute interview, the result of which is that I have been plunged into the arena of child culture, and fantastic words have been put into my mouth which were never uttered, especially in placing environment so far above heredity. They are on the average exactly equal—in fact, life is a fluctuating balance between these two lines of energy. Sometimes one holds the reins, sometimes the other, but both are always in action where there is life.

On this subject even many alleged scientists seem very much muddled, and how can those who do not make it a special study be expected to have well-defined ideas on it?

Men Part of Human Tree.—Biologically considered, each human being is only an inside expression of the great tree of human life, and what I shall say to you this evening is in the belief that any subject is better understood when seen from several slightly different points of view.

The great questions at stake are: Which has the more influence in building the life of a child, heredity or environment? And, Are acquired characters inherited? My own observations prove that all characters that are inherited have once been acquired, and that heredity is only the sum of all these past environments, which if impressed on the heredity long and strong enough in any specific direction will become a part of heredity itself, and this new heredity, already slightly changed by these late environments, will have to meet new environments as before, which will by repetition become fixed in the ever new and constantly fluctuating heredity.

Did you ever think what is the most pliable and the most precious product of all the ages? It is not pigs, mules, books or locomotives, cotton or corn — but children. Children cannot all be treated alike; each has his or her special individuality, which is the most valuable of all endowments. If all were alike no progress could be made, and right here comes the weakest point in the present educational systems.

I have long been studying on the intricate complexity of the action of hereditary and environmental forces on life, both in plants and in man, and these comparisons and deductions came clearly, sharply and naturally.

It has been said that to improve a child we should begin with the grandparents. This is only a half-truth, which, perhaps, had better never have been said. Do not waste any of your time on grandparents unless you commence on them in earliest pliable childhood. If we hope for any improvement of the human race we must begin with the child, as the child responds more readily to environment than any creature in existence. The change may come in the first generation, and it may not. It may not show at all for many generations, but patience and constant attention will finally be rewarded in the survival of the most beautiful, the most precious or the fittest, whichever you may wish to call it.

Man Easily Influenced.—You all know that some great force is necessary to change the aspect of minerals and metals. Powerful acids, great heat, electricity, mechanical force or some such influence must be brought to bear upon them. Less potent influences will work a complete change in plant life. Mild heat, sunshine, the atmosphere and greatly diluted chemicals will all directly affect the growth of the plant and the production of fruits and flowers. And when we come to animal life, especially in man, we find that the force or influence necessary to affect a transformation is extremely slight. This is why environment plays such an important part in the development of man.

In child-rearing, environment is equally essential with heredity. Mind you, I do not say that heredity is of no consequence! It is the great factor, and often makes environment almost powerless. When certain hereditary tendencies are almost indelibly ingrained, environment will have a hard battle to effect a change in the child, but that a change can be wrought by the surroundings we all know. The particular object may at first be stubborn against these influences, but repeated application to the same modifying forces in succeeding generations will at last accomplish the desired object.

All animal life is sensitive to environment. You can change the oyster by gradually changing its environment, and you know the oyster is a very low type of life. Take an ox, a horse, a dog, a man, and that which often counts most in the development of each is environment; but of all living things the child is the most sensitive. Surroundings act upon it as the outside world acts upon the plate of the camera; every possible influence acting exteriorily will leave its impress upon the child, and the traits which it inherited will be overcome to a certain extent, in many cases being even more apparent than heredity. The child is like a cut diamond, its many facets receiving sharp, clear impressions not possible to a pebble, with this difference, however, that the change wrought in the child from the influences without becomes constitutional and ingrained. A child absorbs environment. It is the most susceptible thing in the world to influence, and if that force be applied rightly and constantly when the child is in its greatest receptive condition the effect will be pronounced, immediate and permanent.

Environment Strong.—There is no doubt that if a child with a vicious temper be placed in an environment of peace and quiet the temper will change. Put a boy born of gentle white parents among Indians and he will grow up like an Indian. Let the child born of criminal parents have a setting of morality and decency, and the chances are that he will not grow into a criminal, but to an upright man. I do not say that heredity will not sometimes assert itself, of course. When the criminal instinct crops out in an individual it might appear as if environment were leveled to the ground, but in succeeding generations the effect of constant higher environment will not fail to become fixed.

We in America form a nation with the bloods of half the peoples of the world within our veins. We are more crossed than any other nation in the history of the world, and here we meet the same results that are always seen in a much crossed race of plants—all the worst as well as all the best qualities of each are brought out in their fullest intensities, and right here is where selective environment counts. All the necessary crossing has been done, and now comes the work of elimination, the work of refining, until we shall get an ultimate product that will be the finest human race which has ever been known. It is, perhaps, this country which will produce such a race. Many years will pass before the finished work is attained, but it is sure to come. The characteristics of the many peoples that make up this nation will show in the composite with many of the evil characteristics removed, and the finished product will be the race of the future.

In my work with plants and flowers I introduce color here, shape there, size or perfume, according to the product desired. In such processes the teachings of nature are followed. Its great forces only are employed. All that has been done for plants and flowers by crossing, nature has already accomplished for the American people. By the crossings of bloods strength has in one instance been secured, in another intellectuality, in still another moral force. Nature alone could do this. The work of man's head and hand could not be summoned to prescribe for the development of a race. A preconceived and mapped-out crossing of bloods finds no place in the making of peoples and nations. But when nature has already done its duty, and the crossing leaves a product which in the rough displays the best human attributes, all that is left to be done falls to selective environment.

Fittest Man Not Born.—Man has by no means reached the ultimate. The fittest has not yet survived. In the process of elimination the weaker must fail, but the battle has changed its base from brute force to mental integrity. We now have what are popularly known as five senses, but there are men of strong minds whose reasoning has rarely been at fault, and who are coldly scientific in their methods, who attest to the possibility of yet developing a sixth sense. Who is he that can say man will not develop new senses as evolution advances? Psychology is now studied in the public schools throughout the country, and that study will lead to a greater knowledge of those subjects. The man of the future ages will prove a somewhat different order of being from that of the present. He may look upon us as we to-day look upon our ancestors.

Statistics show many things to make us pause, but, after all, the proper point of view is that of the optimist. The time will come when insanity will be reduced, suicides and murders will be fewer, and man will become a being of fewer mental troubles and bodily ills. Wherever you have a nation in which there is no variation there is comparatively little insanity or crime, or exalted morality or genius. Here in America, where the variation is greatest, statistics show a greater percentage of all these variations.

As time goes on in its endless and ceaseless course, environment will crystallize the American nation. Its varying elements will become unified and the weeding out process will probably leave the finest human product ever known. The color, the perfume, the size and form that are placed in plants will have their analogies in the composite, the American of the future.

And, now, what will hasten this development most of all? The proper rearing of children. Don't feed children on maudlin sentimentalism or dogmatic religion; give them nature. Let their souls drink in all that is pure and sweet. Rear them, if possible, amid pleasant surroundings. If they come into the world with souls groping in darkness, let them see and feel the light. Don't terrify them in early life with the fear of an after world. There never was a child that was made more noble and good by the fear of a hell. Let nature teach them the lessons of good and proper living, combined with an abundance of well-balanced nourishment. Those children will grow to be the best men and women. Put the best in them by contact with the best outside. They will absorb it as a plant does the sunshine and the dew.

Suggestions on Crops for Green Manuring.

Mr. E. L. Koethen of Riverside, who has given particular attention to growing fall and winter legumes to plow into the soil for its improvement, gives the Fruit World a group of suggestions as the results of his experience and observation:

Leguminous crops will enrich the soil, especially if the whole crop is plowed under.

The common bur clover and yellow bitter clover make a fair amount of matter to be plowed under, and both furnish nitrogen nodules in abundance. But these crops do not produce as much green matter as the Canada field pea, or the hairy vetch. The latter named plants are the best tested plants for this purpose. There will probably be others found that will supersede them in time.

The best time to plant peas and vetches is as soon as the ground can be prepared after the first irrigation, after the usual warm wave in September. Both these seeds should be planted deep—from 6 to 8 inches.

Do not confound cow peas with Canada field pea. The cow pea is a hot weather plant, and will not thrive late in the fall or winter.

Cover crops should be planted to prevent washing during winter rains. After sowing the seed the furrows should be made at once, in order not to disturb the plants after they are up. Furrow a little shallower than you have drilled.

Inoculated seed will give better results than if left uninoculated.

If the ground has been in peas or vetch before, it will not be as necessary to inoculate, as if it was the first time. Land that has been heavily manured with nitrogenous manures will produce a heavy crop of vines, but there will not be as much atmospheric nitrogen as if the soil is poor in that element. The United States Agricultural Department germs are of higher potency than those naturally produced in the soil after succeeding crops.

Sow about sixty pounds of peas and forty pounds of vetch seed to the acre. This allows two widths of the Buckeye drill to the row. Follow with an irrigation soon after sowing — say two weeks. Do not allow them to get dry.

To sow first and then irrigate will invite failure. The seed is liable to rot in the soil, and the land will cake so quickly after the water is turned off that you may not get the seed above the ground before water will be needed again.

Sow a little grain seed with the vetch, especially to give the vines something to climb on. We have not seen it tried with the pea, but should think it would be a good thing there too.

The cover crop furnishes humus and nitrogen. This will need supplementing with phosphoric acid, and probably potash.

Do not use acidulated fertilizers at the same time you sow the seed. It may prevent the nitrogerms from acting.

Steamed bone may be sown with the seed, and is an excellent source of phosphoric acid. Guano might be good, but is usually too rich in nitrogen to be economical.

Plenty of water is needed to force a cover crop on to best results.

Peanut Growing With Irrigation.

A local grower gives the Sanger (Fresno county) Herald an interesting description of his methods:

I find that the best time to plant the peanut in this country is from the middle to the last of May. Prepare the ground well; have it good and mellow, then mark out in rows 4 feet apart, and unless the ground is very moist run a little water along the row, sufficient to soak it up nicely. After it dries a little, drop your nuts, one kernel in a place, 22 inches apart. I tried placing one, two, three or four in a place, but found that the one had more and larger nuts than either of the others. After having dropped the nuts cover with cultivator. Nothing more needs to be done until they get up nicely.

About three weeks after they come up, mark on both sides with a shallow shovel marker, one that throws the dirt both ways. Mark just close enough so as not to cover up the young vines. Then irrigate

until the ground is thoroughly soaked. After it is dry enough cultivate, throwing the dirt close to the vines. Continue this every three weeks during the season; each time mark a little farther from the row, and always when cultivating roll the dirt close to the vines; by so doing you will keep the ground high and mellow, so, as the vine spreads, the little tender spurs that shoot down can penetrate it and bear fruit. Do not allow the water to run over the row, as it causes the ground to bake and the nuts to be dark color. It is not the nuts that require the moisture, but the tap root of the vine underneath the nuts.

Do not cover up the blossoms, as some people advocate. The blossom of the peanut ought not to be covered, either in this or any other country. I investigated the matter thoroughly during the season that has just closed. I selected six rows, side by side, each receiving the same amount of water and attention. Three of these rows I covered up the blossoms as they made their appearance, before sunrise in the morning, with a little moist dirt. When I harvested these six rows I found, to my satisfaction, that the three rows not covered had a third more nuts and considerably larger in size. The idea that the peanut ought not to be irrigated in this country is all bosh.

Alfalfa as an Orchard Cover.

To the Editor:—With reference to your request for points upon alfalfa growing in orchards, I will give you my experience and offer a few suggestions. We have a peach orchard about twenty years old. The trees are sunburned and full of borers—trunks and main limbs partly dead. Previous to 1903 these had yellow foliage and poor fruit, caused, I conjecture, by flooding and clean cultivation, depriving the soil of humus and leaching out plant food.

The land is leveled in half-acre checks and is close to a canal with plenty of water. In February, 1903, I put this orchard down to alfalfa. There was a very noticeable change in the appearance of the trees that season. The foliage was a healthy green, the trees made a good growth and the fruit was firmer and of better quality. I cut the alfalfa twice, but did not haul it off, as it made light crops, the land being very sandy. In 1904 I cut three crops of about one ton of hay to the acre, which I hauled off. The trees grew well and bore a good crop of fruit. This year to date I have cut three crops of over one ton of hay to the acre, hauled off, and the trees still grow well and bear fair crops.

This winter I intend to dig out the trees, as I have put a young head on old shoulders, which will not carry the new growth, heavy foliage and a fair crop of fruit without breaking down. I shall leave the alfalfa for a year or two, then plow up and replant to orchard.

On land which produced light crops of alfalfa it might be advisable to return all to the soil, but on heavier land, producing good crops of hay, a certain proportion—to be determined by the appearance of the trees—could be hauled off without any apparent detriment to the orchard.

With sufficient moisture present to sustain both tree and alfalfa, I would advise sowing alfalfa. The gradual death and decay of the root will supply the tree with nitrogen and the soil with humus. I believe that heavy crops of alfalfa, cut and returned to the soil, would supply an excess of nitrogen, causing heavy growth of wood and light crops of fruit of poor quality.

Orchards should be put to alfalfa as soon as the tree shows by its growth, foliage and fruit that it has reached its prime. Care must be taken to furnish water sufficient for both, and if the water contains—as with us—a small per cent of alkali, it will furnish the necessary potash, leaving only the phosphoric acid, of which the soil would be deprived under this system. This, if necessary, could be supplied by Thomas' slag or bonemeal—the latter preferred, as Thomas' slag is too caustic for our soil.

It is getting to be common practice to put alfalfa in orchards around Fresno, but as a rule it is not done until the trees are nearly dead, the object being to renew the land, then remove the trees and start new orchard, but I am satisfied that alfalfa could be put into orchards much earlier, with great benefit to them.

I have a neighbor who has put an excessive growth of new wood on his twenty-year-old apricot orchard by putting down to alfalfa, cutting for hay three years, and then plowing it up.

I consider that it would have been better to have severely disced each year, killing part of the alfalfa each time, and gradually giving up to the tree the humus and nitrogen resulting.

This ranch is owned by Mrs. A. B. Nye. I have been foreman here nine years, and also own forty acres, so I am deeply interested in this subject. I hope you will receive the experiences of others, as there are many who could give information on this subject.

H. W. Wrihgtson.

Oleander, Fresno county.

This is very good. We hope the discussion will go on.

CEREAL CROPS.

Gluten Wheat.

We alluded briefly last week to the excellent exhibit of wheats shown at the State Fair by Mr. F. McMillan of Fair Oaks. During the Fair an impromptu lecture of the subject was given by Dr. G. W. Shaw of the University Experiment Station, who has charge of the details of the work now being pursued co-operatively between the United States Department of Agriculture and the State of California. This work was provided for by the last Legislature, to be under the direction of Governor Pardee and the director of the Experiment Station. The Governor has recently appointed Messrs. Horace Davis, Arthur R. Briggs and T. Cary Friedlander of San Francisco to act as a committee representing him. Dr. Shaw's remarks as reported by the Union allude to the above undertaking.

Prof. Shaw was surrounded by farmers during the delivery of his address on "Lessons From the Wheat Condition of 1905," and made direct reference to the samples of grain before him by illustrating the result of experiments carried on at the State University and the substations connected therewith. He said:

While farmers, grain dealers and especially millers have generally lamented the occasion of such unusual havoc to the grain crop as characterized the crop of the past season, yet it is not without some compensatory advantages, in that it is most likely to be followed by greater attention being given to the selection and adaptation of seed by the grower that in time will more than counterbalance the actual loss sustained by the deficiency in production the past season. The failure of the past season is notable in two particular ways, namely, that it is serious to the quality as well as quantity of product.

Seeking Better Seed.—Good results are already noted in the unusual interest being given to the matter of securing better seed for the coming year, and the search for varieties better adapted to the milling interests of the State, and there is nothing which can be considered more hopeful for better things than when the grower comes to realize the extreme importance of the improvement of seed.

As a result of the extreme conditions which prevailed the past season, farmers have a most excellent opportunity of ridding themselves of much of the undesirable seed used for many years, which has had much to do with the falling off in the grain crop.

Question of Best Wheat.—The question often arises, Which is the best wheat for California? But to this it must be said that there is no such thing as best wheat for California, and never can be, on account of the vast difference of conditions which obtain in the various sections—even in the wheat growing area. It is for the purpose of attempting to find or develop wheats adapted to the several sections of the State that the University of California is conducting investigations at several points, and toward which several private individuals are also bending their energies. Prominently in this work should be mentioned Finlay McMillan of Sacramento county, whose most commendable exhibit attracts so much attention in this pavilion.

The past season was extremely unfavorable for the prosecution of such work, except so far as it gave important evidence of the rust resistant character of numerous varieties.

Russian Varieties.—It is noticeable that the hard-grained Russian wheats have proven very much more rust resistant than the ordinary varieties grown. This hard-grained quality is also probably the reason of the generally good results obtained from the Turkey red variety imported from Kansas for seed by a number of parties last year.

A fair trial of this very valuable milling wheat is highly to be desired, and if farmers who make a trial of this or other new varieties will take pains to communicate their results to the University of California, where a careful record will be kept of numerous varieties, they will materially aid in the solution of the problem.

Starchy Product Easy.—There is no difficulty for us to grow a starchy wheat in California, and with the proper attention paid to seed selection, using only large, plump and clean seed, and careful attention to rational handling of the land, we may reasonably expect much larger returns from wheat growing. The most serious trouble is in securing a satisfactory gluten wheat—one which under California conditions will maintain its quantity and quality of gluten.

It may be said that no high gluten wheat has yet been found which persistently maintains the characterization under one condition.

Error Is Made.—Right here is where we find that an error is frequently made by writers in speaking of the gluten wheats. These wheats are invariably hard and dark in color, the durum and macaroni varieties being even flinty in appearance. Under our conditions the universal experience has been that these wheats become more plump, softer and more starchy.

Those familiar with our present types of wheat are from this led to state that the change is one of improvement, while it is really one of deterioration from the point of view of the end desired, and which we must attain if we are to stop the importation of over 70,000 tons of wheat annually. It is this that is sought by the cereal investigation being conducted by the agricultural department of the University in co-operation with the United States Department of Agriculture.

A Few Give Promise.—It may be said that of the varieties so far tried there are a few that give promise, but they cannot yet be recommended for general growth. Among these may be prominently mentioned Arnantka and Kubanka of the durum types and the Fretas, Turkey Red and Crimean of the harder bread types. The Kubanka has some exceedingly valuable characteristics for many sections of the State, especially the fact that it is highly non-shattering, which, taken together with its marked rust resisting qualities, probably largely because of its early maturing as compared with our common wheat, render it of special interest. However, I do not at present feel like advising its growth upon an extensive scale, because of the regrettable difficulty of disposing of the product.

This arises from the fact that our mills are not generally equipped for conveniently handling so hard a wheat. Yet it is a type which we must grow and will grow in increasing amount.

About 4,000,000 bushels of this variety were sown in the dry regions of western Kansas the past season with most excellent results, and it is reported that the acreage is rapidly increasing every year.

The millers are preparing to handle the wheat, and it is only a question of a very short time when our millers here in California will feel the necessity of doing the same thing.

Government Flour Orders.—It is a very notable thing also that the Government is even now looking toward using flour from this type of wheats for the preparation of a type of bread for army use to take the place of the time-honored hardtack. It appears to be remarkable for its moisture retaining properties.

The best source of this seed now is either South Dakota or western Kansas.

Another very promising variety of the same type is Arnantka. But of the more common varieties the Turkey Red is extremely worthy of trial on a considerable scale, and there will be no difficulty in disposing of the product to our milling trade at a premium.

THE FIELD.

Alfalfa in Stanislaus.

Five crops of alfalfa will be harvested in many places in the Modesto and Turlock irrigation districts this year, says the Modesto Herald, and the majority of those cutting the five crops are those who practiced winter irrigation last season. Recently the Herald writer was in conversation with a number of alfalfa growers, and found that some phenomenal crops of the succulent forage plant have been grown this season, despite the outlook at the first of the season for poor alfalfa. At that time the blight which seemed to take native grasses, grain and beets alike seemed to be affecting the alfalfa. Some of the growers were almost in despair, but they kept at it, cut their first crop on time, and afterward the crop came along all right.

A Mr. Elliott, who owns a part of the old Garner ranch, has cut off 27 acres of alfalfa this year which will net him, figured at the low price of $5.00 per ton in the field, the handsome sum of $950 or $975, according to how the next cutting turns out. At present indications are that the higher figure will be reached.

D. B. Thompson, one of the energetic ranchers of the Salida vicinity, who hails from the southern part of the State, tells us that from new alfalfa—alfalfa planted last spring—he made off of the first cutting, one ton to the acre, and that the second cutting, now about ready, will run nearly two tons to the acre, and he will have good pasturage in the fall to boot. At prevailing prices, and the price of alfalfa is expected to take a material rise this winter, he will make $15 per acre, or more, from his alfalfa the first year.

A neighbor of Mr. Thompson, Mr. Mitten, cut 15 tons of alfalfa from 10 acres of land on the first cutting—and this alfalfa, also, was planted in the spring of 1905.

Thos. Salyer, another rancher near Modesto, was one of the gentlemen who thought, early in the season, that the prevalent blight had hurt his alfalfa badly. He cut the first crop early, it running very light. The second cutting netted him 61 tons from the 20-acre tract; the third cutting brought in 30 tons of first class hay, and the fourth cutting, now ready, is running two tons to the acre. These are figures obtained in less than half an hour on Monday, and there are others who can tell the same story. The figures were obtained from gentlemen of undoubted veracity.

Another interesting feature was brought out in the hunt for alfalfa records: Despite the seeming aver-

sion of Californians to the use of fertilizers of any kind, experiments which have been made in this district with gypsum have proved its utility.

Z. E. Drake, of this city, had a tract of land, planted to alfalfa, which, for the first and second cuttings, netted him but small returns. After the second cutting he thought he would try gypsum on the land. The fertilizer was lightly applied, the land irrigated, and on the third cutting one ton to the acre was cut—double the return from the second cutting. The fourth cutting is now about ready, and will run over two tons to the acre, and Mr. Drake informs us that the looks of the field have improved 100%. Where before the plants were scraggly, and leaved only at the tops, the plants are stocky, and are covered with leaves clear down to the roots, doubling the weight of hay and more than doubling the value of the alfalfa as a forage plant. W. R. High tried gypsum on a like piece of ground near this city, as an experiment, and will cut three tons, and over, to the acre. Mr. High is also an enthusiast on fertilizers, since the experiment, and other alfalfa growers are sitting up and taking notice.

Many growers, too, are now coming around to winter irrigation, which has been advocated by the Herald for the past two years. The growers are beginning to find that more water in the winter, and, consequently, more water underground and less on the surface in the summer, is what alfalfa needs, and have found that their past partial failures in alfalfa culture have been due to not understanding this point.

AGRICULTURAL SCIENCE.

Plant Introduction Garden at Chico.

The Sacramento Valley Development Association has prepared an interesting statement concerning this enterprise, which is conducted in co-operation between the United States Department of Agriculture and the Agricultural Department of the University of California:

The United States Department of Agriculture established in 1904 at Chico, Cal., in the Sacramento valley, a plant introduction and testing garden where, under direction of the Bureau of Plant Industry, the work of testing new seeds and plants, studying plant diseases and developing varieties will be carried on. The site was selected after a most careful inspection of the entire State, great pains being taken to secure the location best adapted to the successful growth of a wide variety of plants. The purpose of this bulletin is to tell briefly of the work being performed there.

The garden is rapidly growing in value and importance. It is now only seventeen months since the Chico site was definitely selected, only thirteen months since its final acquisition for the purpose of the Department, but this brief period has been one of activity at the garden. Buildings have been erected, pumping plants installed, ground leveled and other improvements made. The plants now growing are numbered by thousands and include several hundred varieties of tree, shrub and flower, many of them from remote lands and practically unknown in this country.

To increase agricultural and horticultural production is the principal work of the Department of Agriculture. Foreign lands are searched for promising plants not now grown here, and for varieties of familiar plants which will yield greater returns, or which may prove more suited to conditions in various sections of this country. These new introductions are being tested at Chico, also many varieties of home grown and homely plants. A complete description of the work would require a volume, but some idea of the details may be conveyed by a brief statement covering some of the principal features observed by the visitor.

The garden consists of eighty acres, purchased by citizens of Chico, and for this purpose deeded in trust to the Director of the State Agricultural Experiment Station (University of California). Mr. P. H. Dorsett, in charge, has built on this tract a number of lath houses, a dwelling house and a barn, a tank house (also used temporarily as an office) and has developed two small irrigation systems, water for both being pumped by gasoline engines.

The tract cost the people of Chico approximately $8000. Up to June 30, 1905, the expenditures of the Department, exclusive of salaries, amounted to approximately $12,000.

At present there is need of more and larger buildings, offices and laboratories.

Among the new introductions first interest attaches to the Yang Taw, a curious fruit heretofore unknown to the white man, brought from the interior of China. It is said to possess qualities which render it of unusual value. Four vines from root cuttings sent by Consul-General Wilcox of Canton, China, set out last year, have climbed to the roof of the lath house in which they were planted, and are now growing heavenward above the lattice. Numerous cuttings have been secured from these and next year the plant will be tried in open air.

Another very interesting introduction is the Mitsumata or Japanese paper plant, a shrub grown extensively in Japan, where the bark is used in the manufacture of paper of unusual excellence. This paper may be made to resemble leather and is very strong. Thousands of these plants (seedlings) are now growing at Chico.

The Udo or Japanese salad plant is regarded as one of the most promising of the introductions. This is a perennial and seems to thrive. Ten thousand plants are growing and will be distributed this fall, in accordance with instructions from Washington, to parties known to be in a position to make careful commercial tests of this plant. If they do as well as is hoped for them, and the popular taste is satisfied, this may become a good string to the market gardener's bow.

Pistache culture is to have a thorough test here. This valuable nut has not yet been commercially grown in California. It may not be possible to grow it here, but this remains to be proven and the chances are that the right variety on the right stock will prove a success. Nearly 18,000 pistache trees are growing in nursery rows at Chico from seed of four varieties. Eight grafted plants, three varieties, have just been received from Washington and have been given special attention. These eight plants were budded at Washington from bud wood imported from Sicily.

Nineteen varieties of Smyrna figs are now set in permanent orchard, together with fifteen varieties of the Capri fig which harbors the blastophaga wasp.

An interesting example of the superiority of the Sacramento valley climate for culture of delicate plants is afforded by a group of Japanese lotus planted in an artificial pond near the nurseries. Of 20 varieties imported, 19 are growing, 5 have been blossomed, another will blossom soon. A Department official writes that they have not blossomed elsewhere in this country.

Another promising plant is a flowering cane imported from the gardens at Poona, India, which has so far refused to grow at Washington but is doing well at Chico.

Miscellaneous stocks from this and other countries have been grown this year for breeding and grafting material.

Fifty varieties of cactus have lately been received, mostly prickly pear varieties, including the spineless cactus, in which stockmen of the arid regions are interested, as it provides perhaps a valuable forage crop for lands otherwise useless.

The Department is making a specialty of matting grass experiments, and sent to the Goodall Matting Co. of Maine some grass which they pronounced the very best for matting purposes. This grass was found by Mr. Dorsett near Antioch and transplanted to Chico. It grows to a height of 6 feet, is of even size and very strong. The Juncus effusus from Lake Merced is also grown and 9000 plants were sent this year to South Carolina.

Forage plant tests have been carried on under instructions from Mr. C. V. Piper, in charge of forage crop investigations. These tests embrace 189 varieties.

The vegetable tests have been made under direction of Mr. Will. W. Tracy Sr., superintendent of trial gardens, and embraces 255 varieties, including the following: Beans 64 varieties, peas 27, cabbage 21, celery 7, egg plant 7, tomatoes 17, cauliflower 5, kohl rabi 4, leek 2, sweet corn 11, squash 9, watermelon 17, cucumber 14, muskmelon 16, radish 13, beet 7, lettuce 17, onion 9 and peanuts 5.

Several acres were planted to Indian corn, with excellent results. This was irrigated, and the result indicates great possibilities. The crop of corn would do credit to the corn belt of the Middle West. More varieties will be tested next year.

All work with corn, vegetables and forage crops has been of a preliminary nature. Most extensive tests will be made next year with varieties which this year's tests showed to be best adapted, also with other varieties. The vegetable growers of the State will do well to keep an eye on this work.

Arrangements have been made with the office of Pomology, by which twelve acres of land at the garden is to be set aside for experiments in viticultural investigations. Seven thousand cuttings, embracing 150 varieties of grapes, are already here and will be used under the direction of Mr. Geo. C. Husmann, United States Viticulturist.

Irrigation investigations are carried on at the garden by Prof. S. Fortier of the University of California, who is also associated with the irrigation service of which Prof. Elwood Meade is the head. Evaporation tests were made recently by Herbert T. Newell, irrigation engineer.

A feature of the plant introduction garden which impresses the visitor is the system. Every plant has a number and a record. A card index system is used which places the details of the entire garden at easy command.

The bureau of entomology has lately established in connection with the plant introduction garden at Chico an apiculture station in charge of John M. Rankin, who will conduct a series of investigations calculated to benefit the honey producers of the State. Mr. Rankin was State Inspector of Apiaries in Michigan before his connection with the Department.

THE POULTRY YARD.

A State Poultry Show Proposed.

That California is a State which presents great possibilities for intelligent poultry raising will be demonstrated by a great poultry show to be held in this city next December. It is expected that every poultry association in California, and everyone interested in poultry raising, will lend their co-operation to the movement, and that the poultry exhibition will be the most representative poultry show ever given in the history of the West. All sections of California and the Pacific coast will be represented and everyone will stand on an even footing.

A meeting was held at the headquarters of the California Promotion Committee, on August 10, at which were present the representatives of seven different poultry associations in different parts of the State, as well as chambers of commerce and other improvement organizations interested in the development of the poultry industry. It was decided at that preliminary meeting that a poultry show should be held in San Francisco next December on a date not prearranged for local poultry associations, and that the whole State be invited to take an active part and make this the most successful poultry show ever given on the coast. The object of the exhibition will be to show the advantages of poultry raising in California and quicken the industry throughout the State. Every poultry organization in California is invited to participate in the movement, and it is proposed that an annual poultry exhibition be held every year in different parts of California.

California imported something like 21,000,000 pounds of poultry products last year, despite the fact that the State offers great opportunities for the poultry raiser. It is believed that there will be fully 5000 exhibits of the industry at the State exhibition. Leading poultry judges from the East will be invited to attend and arrangements will be made to advertise the industry.

The committee has received more inquiries regarding the poultry industry than from any single feature of the live stock business. It is believed that this big poultry exhibition will greatly further the local poultry shows, which are held throughout the State, and those who are engaged in the movement to further the big show have pledged themselves to do everything to advance the local show.

At the recent meeting held at the headquarters of the California Promotion Committee, there were present representatives of the Napa County Chamber of Commerce, the Los Angeles Poultry Association, the California Poultry Association, the Fresno Poultry, Pigeon and Pet Stock Association, the Alameda County Poultry Association, the Haywards Poultry Association, the San Benito County Improvement Club and the California Promotion Committee. All others, who have not been advised of the movement, are requested to immediately communicate with the California Promotion Committee which will at once forward a letter to those who are at present attending to the preliminary work for the first California State Poultry Association. Everyone interested is requested to make known their interest to the committee.

Washing Birds for Exhibition.

Arthur G. Duston gives the Inland Poultry Journal his way as follows:

I want a large quantity of hot water, the more the better, a good fire going and a room that is at least 90° in all parts of it.

I prepare one tub with clean, hot water (about as warm as I would want to bear my hand in it), with a liberal amount of soap well dissolved and put in, so that the first bird gets as thick and heavy a lather as does the last one.

I grasp the bird in my left hand, around both legs, put her under the water in order to soak her up. Once the feathers are well wet, you can soap and scrub them as you would a rag. Go clear to the skin, so that the feathers in every part are thoroughly washed.

The second tub or first rinsing water is clean, the chill just taken off, and the bird, after being thoroughly washed, is put into this, and as much of the soap as is possible rinsed out. See that there is no smooth feeling to the feathers in any section, as this would indicate that there is still some soap adhering to them.

The third water is almost cold, with a fair amount of bluing added to it, just about as much as one would use in washing clothes. Do not get too much, for this will certainly label you an amateur.

After each washing the bird is as far as possible wrung out with the right hand. Allow the bird to lie on your left arm as you grasp her in the hand, and run your right hand down the back from her head to her tail. In this way you will get rid of a good portion of the water.

In the last rinsing great pains should be taken that you do not pinch the tail feathers together, for, if you do, they will remain so, and have an appearance that she never had before, and that will work against her under the eye of the judge.

Agricultural Review.

El Dorado.

PEAR CROP NEARLY OVER. — Placerville dispatch to Sacramento Union, Sept. 11: The farmers of this county are hard at work getting in their fruit. The pear crop this year paid well. Some of the farmers got as high as $45 per ton, but several had sold their crops for five years, and all they get is $20 per ton.

Kern.

FIG THAT CAN BE SHIPPED.—Kern County Echo, Sept. 12: R. M. Dodge has a new fig, neither white nor black, but reddish purple in stripes of different shades. The meat of the fig is rather dry, and that gives it carrying qualities, but it is very sweet. Mr. Dodge says that it is the sweetest fig he has ever eaten, and its flavor is good. The stem of the fig does not drip milk when it is freshly picked, as the ordinary white figs do. The origin of the new fig is a mystery, and Mr. Dodge says that he thinks it must be a seedling. It came up out of the ground one day about five years ago without any visible reason in a place where Mr. Dodge says no fig tree or fig cutting had been planted. The little tree grew slowly, and it had the discouragement of being broken off once or twice by cattle. Then Mr. Dodge built a fence around it and three years ago it began to bear. The figs even this year are not very large, but Mr. Dodge says they would probably be larger if the tree had better care. The fruit ripens about the same time as White Adriatics, and there are a few figs left on the tree now. Mr. Dodge says that he is going to send some of the fruit to Mr. Roeding, of the Fancher Creek nurseries at Fresno, and get his opinion of it.

Lake.

PEAR CROP.—Clear Lake Press, Sept. 16: At Kelseyville the bulk of the pear crop has been packed and shipped. The yield was not quite an average one for this neighborhood, but the prices realized from some of the orchards were high enough to cover the deficiency.

Lassen.

GRAIN CROP LIGHT. — Susanville special to Sacramento Bee, Sept. 12: The grain yield in Honey Lake valley this season will be one-half of the amount generally harvested, and of this amount about one-third will not be fit for milling purposes on account of smut and rust. The two threshing machines that have been busily engaged for the past month will finish with their work this week.

Los Angeles.

POMONA FRUIT GROWERS. — Pomona Times, Sept. 13: The stockholders of the Pomona Fruit Growers' Association held their annual meeting last Thursday. The attendance was large. Manager F. K. Adams made his report, which gives the following information. The expense per packed box for packing house expenses was 27 cents, including charges for interest and wear and tear. The total shipments, exclusive of Valencias, was 641 carloads, as compared with 599 cars last season. There will be in addition about fifty cars of Valencias by the end of the season, as compared with thirty-one cars last season. The association has paid net to the growers, exclusive of Valencia crop, $165,795.06, a gain of $8,169.58 over last season. With the Valencia crop included the total net receipts to growers will be over $200,000. The following directors were elected: H. J. Nichols, J. M. Mitchell, G. B. Lamme, Mel Campbell, G. B. West, J. H. Graber and D. A. Hawk.

San Joaquin.

STRING BEANS GROWN BY THE FOOT. —Stockton Independent: Stephen Piccardo left a bundle of string beans at the Chamber of Commerce Saturday that measured 2 feet 4 inches in its greatest length. The thirty pods averaged at least 2 feet in length and were no bulkier than the average of string beans. They looked tender and were of good color. Mr. Piccardo said he produced the beans by grafting them upon tules, by planting the seeds within the clefts in the roots of the rushes as an experiment.

CYCLONE COOLER.—Lodi Herald, Sept. 16: The California Fruit Exchange has installed a Cyclone car cooler at their Lodi sheds. The machine is the invention of A. R. Sprague, president of the exchange, and is designed to reduce the atmosphere in refrigerator cars, after being loaded and iced. The usual method of shipping fruit to the Eastern markets by loading warm fruit in a cold car always resulted in the fruit sweating, followed by decay. The Cyclone car cooler takes a carload of fruit and cools it before it starts on its Eastern trip. It takes from 2½ to 4 hours to cool a car of fruit with this improved process. A test was made this week on a loaded car of fruit and the temperature was reduced from 79° to 53° in 4 hours. The process takes out all moisture and leaves the fruit dry and at a temperature of from 50° to 55°, reaching the Eastern markets in perfect condition.

FIRST CAR OF GRAPES FROM LOCKEFORD.—Lodi Sentinel, Sept. 16: This week a large quantity of wine grapes were shipped from Lockeford, John Hammond being the principal shipper. This is the first time that Lockeford has ever sent out grapes by the carload, and in a few years that vicinity may be an important factor in this industry.

NEW ASPARAGUS CANNERY. — Lodi Herald: The Empire Asparagus Co. has been incorporated and intends to plant 400 acres to asparagus in the delta lands near Lodi, where the Barlings, who are interested in the new corporation, already have a tract equally as large in asparagus. The present project is in the nature of an extension of the other one. Asparagus growing has become one of the great industries of San Joaquin county, and the business promises especially large profits now that the vast fields on Bouldin island were cut out for some time by reason of the inundations through the breaking of the Sacramento river levee, which sent a sea of water across the country to Bouldin. The capital stock of the new company is $25,000, divided into shares of $1 each. All the shares are divided share and share alike among the six directors as follows: C. L. Long of Fresno, A. P. Barling and E. R. Barling of Moreland, R. S. Peeler of San Francisco, C. M. Oliver of Moreland and Ruth Long of Fresno. The company has ample means and will soon begin to market its product. It is already giving employment to a large number of laborers, and when the canning of asparagus begins the number will be considerably increased. Moreland is on Middle river, where a wharf has been built for a landing, and switches from the Santa Fe Railroad run to the warehouse. Most of the vegetables are brought to the cannery in boats and the finished products are taken away on the railroad.

San Luis Obispo.

LOMPOC MUSTARD.—San Luis Obispo Record, Sept. 15: From the most reliable sources that the Record can reach, the mustard crop for the Lompoc valley this year is placed at close to 21,000 sacks. There were about 1400 acres planted to mustard, which would make the average very close to fifteen bags per acre. Figuring each bag at 90 pounds, this would make 1,890,000 pounds. Several people contracted at $3, but some have sold as high as $4.30 per hundred, and the price now is about $4.17 to $4.20.

Santa Clara.

CORN STALK 14 FEET HIGH.—San Jose Herald, Sept. 14: A corn stalk, perfectly proportioned and 14 feet in height, is one of the attractions in the rooms of the San Jose Chamber of Commerce. On the stalk there are two ripe ears, almost 2 feet in length and weighing nearly 4 pounds apiece. The specimen was raised by L. D. Myers on his Fruitvale Avenue property. Mr. Myers also exhibits a sunflower, 15 inches in diameter and 4 feet in circumference, weighing 18 pounds. Another remarkable flower of the same variety has been presented to the board by J. P. Babb, of the Hillcrest orchard in the East foothills. The stalk is fashioned in the form of an umbrella. Mr. Myers also exhibits some exceptionally fine quinces, the largest of which weighs 1 pound 7 ounces, and each of the others weighing over 1¼ pound.

Solano.

SHEEPMEN'S ASSOCIATION MEETS.—Suisun dispatch to Sacramento Union, Sept. 18: Teh annual meeting of the Solano County Sheepmen's Association was held here to-day. This Association was organized about a year and a half ago by the leading sheep owners of the country for the purpose of providing means of protecting sheep from the ravages of coyotes. The sum of $20 is paid for each coyote scalp. Since its organization the Association has paid for fifty-one such scalps. The officers elected for the ensuing year are: H. R. Timm of Dixon, president; T. A. Kilkenny of Elmira, secretary; J. B. Hoyt of Birds Landing, treasurer. These officers, together with the following, compose the board of directors: J. G. Church, Silveyville; J. T. Brown, Binghampton; E. L. Stewart, Denverton; C. E. Clausen, Tremont; W. A. Stewart, Rio Vista; C. A. Morrell, Suisun.

Sonoma.

GRAPE PICKING.—Santa Rosa Republican, Sept. 15: At the Fountaingrove vineyards arrangements are being perfected for the gathering and crushing of the grape crop. Picking and crushing will begin about Sept. 25, and the crop on the Fountaingrove lands will amount to only about half the usual yield there. The amount of wine to be made by the Fountaingrove people, however, will be up to their average, as each season they fill their cooperage despite the fact that their own crop may be short. This is done by purchasing grapes from growers in the vicinity. The cooperage of the colony is of from 350,000 to 400,000 gallons capacity.

FORESTVILLE GRAPES.—Press Democrat, Sept. 17: Wm. Lehn of Forestville says that the last few warm days are just what is needed to ripen the grapes. The crop throughout the Forestville section will be only fair, and as yet the price is very unsettled, but he thinks it will range somewhere between $18 and $20 per ton. Mr. Lehn intends buying a great many grapes from the Green Valley section, and to save the growers a very heavy haul over the hills between Green Valley and Forestville, he will erect a large scales at the Winkler crossing on the electric road and will receive the grapes there. Already the electric railway company have commenced work on a spur switch, and Mr. Lehn hopes in a week or so to have his scales ready for business. While the Sonoma grape crop of 1905 may fall below the average of other years the quality of the vine product will be unusually good and the quality of wine of this year's vintage will be high.

Stanislaus.

CREAMERY BURNED. — Modesto dispatch to Call, Sept. 17: The Ceres Cooperative Creamery at Ceres, 5 miles south of Modesto, was destroyed by fire. The plant was valued at $12,000 and carried $7000 insurance. This is the second time within two years that the creamery has been burned. There is no clew to the origin of the fire. As the conflagration started inside the building, away from the boiler and engine rooms, the supposition is that a firebug is responsible for the disaster. The Ceres Creamery was the model creamery of the county, and was shipping 1500 pounds of butter a day to the city markets.

BARN AND HORSES BURNED. — Oakdale Leader, Sept. 15: James Long's barn and several horses and other property were destroyed by fire at an early hour Wednesday morning of last week, near Montpellier. A. W. Diehl, the contracting builder, had several men engaged in making repairs on the barn. After the fire had finished its work of destruction the charred remains of five horses were found, one of them being that of a valuable animal for which Mr. Diehl had refused $125. Frank Lichtensteiger, one of the crew of workmen, had a fine horse which he valued at $175 so badly burned before the animal could be removed from the barn that he fears it will not recover sufficiently to be of any value. The origin of the fire is unknown.

BIG LAND DEAL. — J. R. Willms & Sons, near Knights Ferry, have purchased of A. B. Carey of San Leandro the old Carey stock ranch, comprising 4000 acres. The purchase price was $28,000. This well known tract of grazing land has for many years been occupied by Carey & Clifford as a stock farm, from which at times large profits have been realized. In addition to the late purchase, the Willms ranch in the same locality, near Knights Ferry on the south side of the Stanislaus river, contains 4600 acres, making the present holdings of the stockmen 8600 acres.

Sutter.

WILL IRRIGATE ORCHARDS. — Marysville dispatch to Sacramento Union, Sept. 18: M. N. Sheldon, who is making contracts with orchardists for water for irrigation in Sutter county, states that a survey for the canal will be made immediately. This is taken to mean that the required 10,000 acres of land has been nearly all subscribed for water and that the extension of the canal from Butte county to Yuba City will soon commence. Many orchardists in the vicinity of Yuba City have contracted for water, and recently some of them doubled their contracts to increase the number of acres and hasten the coming of the canal.

Tehama.

CATTLE SHIPMENTS BEGUN. — Red Bluff dispatch to Sacramento Union, Sept. 15: Shipments of livestock have commenced from this place, now that the cattlemen have driven their herds from the mountains. Most of the cattle are being sent to the San Francisco market, but a few shipments are being made to Mississippi points, chiefly as an experiment.

Ventura.

HIGH SUGAR AVERAGE.—Oxnard Courier, Sept. 15: The 1905 crop of sugar beets in this valley is good. The machinery in the big mill was put in operation on July 17, and up to Monday 85,000 tons of beets had been received and converted into granulated sugar, and whose average sugar content was 18.53%—the best average that has yet been shown on this amount of beets. It is estimated by the factory officials that the campaign is about half completed. Since the starting of the large mill everything has moved along in a most satisfactory manner—there having been no serious breakdowns or mishaps to cause a shut-down of any note whatever.

Yuba.

WINERY BURNED. — Marysville dispatch to Sacramento Union, Sept. 17: The Marysville Winery was destroyed by a fire Sept. 16. The loss will reach about $60,000 and the insurance carried was $32,500. How the fire originated is not known, but it was first seen in the part of the building in which the boiler and engine room are located. No one was inside the building but H. S. Sieber, son of the proprietor of the establishment. When he saw the blaze it had gotten under such headway that nothing could stop it. The winery contained about 100,000 gallons of old wines, the vintages of many years, including a large part of the product of last season. In addition there was more than 1000 tons of new grapes on hand that had been hauled in during the past few days. The grapes were paid for at the rate of $12 a ton, which gave them a value of $12,000. Mr. Sieber had them insured yesterday for $6000.

FIRE DESTROYS HOPS. — Marysville dispatch to San Francisco Call, Sept. 13: Three more hop kilns at the Horst yards in Wheatland were destroyed by fire, making nine burned this year. The loss this time is $12,000. The kilns contained 20,000 pounds of hops.

FALL SALE OF WOOL POSTPONED.—Marysville dispatch to Sacramento Union, Sept. 18: The Wool Growers' Association did not hold its fall sale of wool Saturday. The reason given was that the wool market has not been established. Another meeting will be held next Saturday, at which a new date for the sale will be settled upon. It is understood that some of the growers have sold at private sale for 22 cents, but the price is expected to be above this.

OREGON.

A 26-OUNCE ASHLAND PEACH.—Ashland Tidings, Sept. 4: The prize peaches of the Lewis and Clark Fair were received by the Oregon Horticultural Department from Max Pracht & Sons' Peachblow Paradise at Ashland. Ten of these filled an ordinary peach box, and the biggest one weighed 26 ounces. Some of the others weighed nearly as much.

HOP CROP OF ROGUE RIVER VALLEY. — Rogue River Courier, Sept. 16: This week will practically close hop picking in Rogue River valley for this season, for most of the yards will have been picked this Saturday, and by the middle of next week the last of the picking will have been done. The quality of this year's crop is very good and the weather conditions have been perfect for picking and curing. Profiting by previous experience, the growers have been very careful to have their hops clean. With very few exceptions the size and quality of the hop is good, and this with the clean picking and careful drying will give a high average quality to the Rogue river hop for this year. The yield has been less than the average for Rogue River valley, and a careful estimate places the yield at from 800 to 1000 pounds per acre, a few yards going above this amount and some going even as low as 600 pounds. Yards that were under good irrigation and were sprayed to kill off the lice have made splendid yields. So profitable has irrigation proven that every yard that can possibly be watered will be supplied by either ditches or pumping plants. What irrigation will do for hops is proven in the yard of English, Burrow & Jewell on the Applegate, near Murphy. This yard of 42 acres of baby hops, for the yard was only planted last spring, is estimated to yield fully 10,000 pounds of fine hops.

Horse Owners! Use
GOMBAULT'S
Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish.* Every bottle sold is warranted to give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

When the Summer Boarder's Here.

When the summer boarders come
  My downfall is complete;
I have no place to lay my head
  Or anything to eat.
I ask, "Where shall I sleep to-night?"
  They whisper, "Why, my dear,
Would you mind sleeping in the barn?
  The summer boarder's here."

I swing a hammock 'neath the trees,
  Hang up a swing or two;
Then run a festive chicken down,
  To make into a stew.
I'm errand boy and chambermaid,
  And life seems dark and drear;
I have no home, I just "hang out"
  When we have boarders here.

If I sit down one minute
  To have a little chat,
It's "John, come peel the 'taters,"
  Or "John, do this or that."
And when the day is over
  I feel more dead than 'live;
They call, "Now, John, don't oversleep;
  We must be up at five."

The broiling days of summer
  Pass slowly one by one;
O for the cool September,
  When we'll be all alone;
I'll eat my first square meal then,
  And sleep till "kingdom come,"
Sing "Glory Hallelujah,"
  When the boarders all go home.

You and To-day.

With every rising of the sun
Think of your life as just begun.
The past has shrived and buried deep
All yesterdays; there let them sleep.
Nor seek to summon back one ghost
Of that innumerable host.
Concern yourself with but to-day;
Woo it and teach it to obey
Your will and wish. Since time began
To-day has been the friend of man;
But in his blindness and his sorrow
He looks to yesterday and to-morrow.
You and to-day, a soul sublime,
And the great pregnant hour of time,
With God himself, to bind the twain,
Go forth, I say, attain, attain!

—Ella Wheeler Wilcox.

A Matter of Selection.

Said a vulgar little girl, who was sneering at another
In accents that were very far from mild,
"You ain't got no father, you ain't got no mother—
You ain't nothin' but a horrid 'dopted child!"

"I'm quite as good as you," came the answer from the other,
"I was carefully selected from a lot;
But only look at you—your father and your mother
Had to keep you if they wanted to or not!"

—Boston Globe.

Ingratitude.

Blow, blow, thou winter wind;
Thou art not so unkind
As man's ingratitude;
Thy tooth is not so keen
Because thou art not seen,
Although thy breath be rude.

Freeze, freeze, thou bitter sky,
Thou dost not bite so nigh
As benefits forgot;
Though thou the waters warp,
Thy sting is not so sharp
As friend remember'd not.

—William Shakspere.

Scooped.

Did you ever see such a miserable day in all your career?"

"I certainly never did. Why, do you know, I haven't a story fit for a cub, and the building has been so dull the past two weeks that I just dread reporting 'Nothing doing' to the desk. How about you, Tom?"

"Same here," replied the third party. "Only thing I caught was a new seedless apple dream."

It was a crowd of three reporters at the capitol. They were supposed to fill so many columns of space each day with live news of interest to the entire State. For the past two weeks—in fact, ever since the assembly had adjourned and depleted the building of nearly 200 of its active political workers—the statehouse had been worse than a nightmare to those intrusted with gathering capitol news.

As a last resort the fatigued and disheartened news writers had assembled in the large reception room of the governor's office and were confiding, not only their troubles, but their news. "Trouble makes the entire world brothers," and these fellows, who usually compete so keenly for "scoops," were each willing to "divvy" in order to even get a look in at the copy desk that night.

"What are those insurance men doing up here?" asked Bill, the first spokesman of the meeting.

"Haven't the slightest idea," replied Henry. Wonder if we couldn't pipe up a story on their visit? They seem to be deeply engaged with the governor."

"Say, boys," said Tom, "let's run a story that the life insurance men are trying to get Wilson's sentence commuted to life imprisonment. Say that Wilson carries $5000, and if it's commuted he never could pay the premium while in the pen, and the companies won't have to pay it when he dies a natural death, while if they hang him next week it will cost the companies the entire $5000. It's a capital story and will pull our records out of the fire. It will advertise the insurance men, who, by the way, are all good story-givers, and won't hurt Wilson."

"Great idea!" shouted Bill and Henry together. "Do you know," continued Henry, "it's good for a two-column head."

"Two-column head—it's a front pager!" chimed in Bill.

So, little by little, the three men worked out the details of the story.

It must be said to their credit that they were not in the habit of such work, but business was slow, and what harm could come of the matter? The governor had told them privately that Wilson would hang. The insurance men could be pacified with a story later to the effect that Wilson had tipped off the story himself, and their columns would be filled.

At this point the door of the reception room opened, and outside could be seen an old, white-haired woman. Tremblingly she stood at the threshold, casting an appealing eye within the room as if waiting for an invitation to enter. She was one of those "mothers in Israel" who can be distinguished as far as seen. On her face were the wrinkles of care and trouble. Around her eyes were the black marks that bespeak many wakeful nights of prayer. Yet from her face shone a light that could only have been reflected from the Light in whom she placed her trust.

The governor's private secretary advanced toward the door and bade her enter. As she complied with the invitation the reporters ceased their mirth over the man who was doomed to die, and somehow the very presence of this unknown woman caused each to feel guilty of having jested over a matter so serious.

The secretary showed her to a seat and quietly asked her name. The response was given in a whisper, but the company of three newswriters saw the face of the secretary lighten for a moment and then pale as if some terrible comprehension had come to his mind.

The insurance men tarried with the governor in the next room several minutes, and during that time the woman was seen to bow her head several times in prayer. At last it was her time to see his excellency.

The reporters watched her as she passed into the room and greeted the executive. The secretary had advised the governor who was next, and through the open door it could be seen that he rather dreaded the meeting; but there was nothing in her actions to warrant that dread. Firmly she advanced and took the outstretched hand of the State's official head, and her grasp reminded one of the old-time, warm, good fellowship hand-shakes that were in vogue before some one invented the present-day idea of a finger-tip grasp with a side-shake accompaniment.

The presence of the woman seemed to put a new atmosphere into the room; even after she had become lost from view behind the door which the secretary closed as he came out, her influence remained.

"What a peculiarly striking woman," said Henry.

"Something about her that gets the best of me," responded Bill.

"Her very presence brings to mind my dear old mother," spoke up Tom.

"There was something about her that recalls the scenes of childhood. She certainly changed the atmosphere of this room. Who is she?" continued the speaker, turning to the secretary.

"That is Wilson's mother," slowly replied the governor's assistant.

That evening a crowd of three reporters were chatting over the dinner table at a downtown restaurant, when one of them looked up and said: "Say, boys, that insurance story doesn't seem half so good to me."

"Right you are, Tom," said another. "The old lady looks too much like my mother. Who knows, she might be in the same place some day."

"Boys," said the third, "let's report nothing doing and get scooped on the insurance story."—Pueblo Chieftain.

Why Should We Work?

Work is activity in some phase of our life. Life is manifested in activity, and inactivity would be stagnation, which would be fatal to life.

In the universe wherever there is life there is activity. This is true in the vegetable, the animal and the human worlds. This activity is a necessity which runs through all organic life. The life that is not crowned with ennobling work of some kind, either for one's own livelihood or for the good of others, is an empty life—an abnormal life.

Work is natural; idleness unnatural. Work builds up, and inactivity tears down. Idleness is a violation of our being. Hence it is unmoral.

There are manifold reasons why we should work and no reason why we should not. Those who are not obliged to labor for their daily bread should choose work of some kind in obedience to the universal law that we see running all creation.

He who was of the opinion that "the man who does not work should not eat" realized the demoralizing influence of a life spent in idleness.—American Queen.

To Make Jelly Right.

Whatever fruit is used, cook until soft; then let it drip from a suspended sack made from thin but strong material. Never squeeze it with the hands; give it time, and the juice will drip through into the receiving vessel, which should be an earthen bowl. Put the juice into a porcelain kettle and over a brisk fire; boil twenty minutes. At the same time, place on an earthen platter the quantity of sugar you will be likely to use; set it in the oven, and heat through thoroughly, being careful that it does not scorch or discolor. When the juice has boiled briskly twenty minutes from the top of the stove, remove and measure it, and allow as many pints or quarts of sugar as there are of the condensed juice. Stir all together and boil up about three minutes. Strain into a pitcher, fill your jelly glasses, and let stand until next day; then cover securely and store away in a cool, dark closet.—Country Gentleman.

A writer in Harper's Bazar warns girls who indulge in sea bathing against allowing the salt water to remain in their hair. Sea water makes the hair harsh and brittle, and often destroys its color. Light hair is sometimes permanently darkened. The same warning should be given to girls who spend much of their time in the open air. A little sun is good for the hair; too much of it is fatal. A young girl devotee of golf quite ruined her fine blonde tresses in a single summer. The girl persistently went without a hat, spending day after day on the links. At the end of the summer her abundant hair, a beautiful blonde tone in June, had turned to an ugly ashy hue, scarcely recognizable. A year later the hair had not regained its original brightness.

Proper Care of a Canary.

When the bird is in ordinary health, the more plainly it is fed the better. The usual mixture is what is called black-and-white canary seed, the black being good summer rape.

Of this, one part is added to two of the other. It is important, however, that the seed be good and clean—that is, free from dust and grit.

The canary seed should be fat, glittering seeds, and before putting it in the tin of a morning, not only should the tin itself be cleansed, but the seed should be put upon a piece of white paper, and the dust or grit, if any, blown away or removed.

In addition to these seeds, a little green food must be given, fresh every day, but not damp. The best are probably plantain, ripe groundsel, ripe chickweed, a little lettuce or watercress.

As to dainties, the less of these the better. We may, perhaps, make an exception in the traditional morsel of sugar or crumb of sweet biscuit, but a bird will not keep long in song that has much of either.

Water should be given fresh every morning, the little glass fountain being previously well rinsed out. Soft, filtered water is best by far. A great many ailments are induced by hard water.

Sand is another important aid to health. It should be rather coarse or gritty, and very clean. Perhaps washed sea sand is as good as any. The bottom of the cage should always be thickly strewn with this immediately after the cage is cleaned, a stock being kept in the house for the purpose.

The owner of the bird should see to its comforts every morning before breakfast. If left till afterward, it is frequently forgotten.

A song canary will not do well for any length of time in a stuffy, badly ventilated room. Fresh air is essential to health. Another thing that tends greatly to keep the bird in health, or, indeed, any bird, is what we may call the sun bath.

On fine days the cage should be so hung that the sunshine will penetrate the cage; but at the same time it must be remembered that too much heat is very dangerous, so one-half of the cage should be invariably covered over with a cloth. This cloth comes in handy in several other ways—at night, for example; more particularly when the temperature is low or likely to be. On such occasions the cage is to be covered quite over, but in summer a part should always be left open. The cloth may be required also at times when anything is being done in the room likely to frighten the bird. Some birds are naturally timid and easily alarmed.

When they are so, it is useless trying to tame them; the heart is weak, and they need extra gentle treatment. We have known a bird of this kind almost frightened to death by some one, while sewing, tearing a piece of linen down the center.

Those who own song canaries are not long in finding out that they have many little "human" weaknesses, and are jealous, pettish, peevish, cross, or loving, as the case may be. Such little moods ought to be humored if we are to have our songsters thoroughly tame. Apropos of fresh air: The bird in the winter's evening is too often hung in a position we have already condemned as prejudicial to its health, in a room where gas is burning.

If the bird must be in this room, the cage should be lowered and partially covered up. Smoke, steam and all sorts of vapors tend to injure the health slowly, or, indeed, to cause illness and loss of voice.

A forenoon bath daily in fine weather is an excellent preservative of life and voice in the song canary. A saucer makes as good a bath as any, the water being clear rain water.

It is usually placed in the cage, but if, as we have recommended, the bird has been tamed thoroughly, and allowed its freedom for a time every day, the bath should be placed on a chair or on the floor. The bird will come to look upon this as a very great luxury, and the cage remains unsoiled.

Custards.

The direction for baking all cup custards is the same. Pour the mixture into cups, set them into a pan of hot water and bake in a rather moderate oven about twenty minutes, or until the custard is set in the center. Custards are best served cold. Sponge cake or angel's food is a delicious accompaniment to custard. Each of the following receipts will make enough to fill four custard cups. The chief care in making custards is to mix the ingredients thoroughly.

Maple Custard:—Beat three eggs until a full spoonful can be taken up. Add a pinch of salt, one third cupful of maple syrup, and when these are well mixed add two cupfuls of milk. Strain and bake as directed.

Nut Custard:—Rub four level tablespoonfuls of nut butter smooth with one cupful of water. Beat two eggs light, with eight level tablespoonfuls of sugar and add to the butter with a pinch of salt. Mix well with another cup of warm water and cook in a double boiler till creamy. Then bake as directed. To make this of different flavors, use different kinds of nut butter.

Caramel Custard:—Let one-half cupful of brown sugar melt and brown in a saucepan over a moderate fire, stirring constantly to prevent burning. When well browned, pour over it one-quarter (coffee) cupful of boiling water, and let it simmer slowly. Beat two eggs, add a pinch of salt and one pint of milk. When the caramel is melted, add to it the milk and stir well. Bake as directed.

Chocolate Custard:—Heat to the boiling point, in a double boiler, one cupful of milk and one cupful of water, or, preferably, two cupfuls of milk. Put in a granite saucepan or cup over a moderate fire one-half square of chocolate shaved up, four tablespoonfuls of granulated sugar and one-half tablespoonful of water. Stir this constantly until it is smooth and glossy. Add the hot milk, slowly, beating thoroughly. When this is tepid add it to two eggs beaten thoroughly. Add a pinch of salt and one-half teaspoonful of vanilla. Beat all together thoroughly and bake as directed.

Cocoa Custard:—Heat one cupful of milk and one cupful of water, or, preferably, two cupfuls of milk to the boiling point in a double boiler. Mix together thoroughly four even tablespoonfuls of Baker's cocoa and four tablespoonfuls of granulated sugar. To this add hot milk slowly. When this is tepid add it slowly to two eggs beaten light. Add a pinch of salt and one-half teaspoonful of vanilla. Beat thoroughly and bake as directed.

Coffee Custard:—Beat till light two eggs, a pinch of salt and two tablespoonfuls of sugar. Add slowly two-thirds of a cupful of milk and one and one-third cupfuls of clear, cold coffee. Beat up thoroughly and bake as directed.

Pumpkin Custard:—This is merely the custard part of pumpkin pie for which it is an excellent substitute. Mix well one-half cupful of sugar, one even teaspoonful of ginger and two teaspoonfuls of cinnamon. With these, beat up one egg till light. Add two-thirds cupful strained pumpkin, then one and one-third cupfuls of milk. Beat till thoroughly mixed and bake as directed.

Lemon Custard:—(For four custard cups). Heat one full cupful of milk to the boiling point in a double boiler. Then stir into it one tablespoonful of cornstarch beaten smooth with a little cold water. Keep stirring until the milk has thickened, and starch well cooked: about fifteen minutes. Then add to it the yolks of two eggs, beaten smooth with one teaspoonful of cold water. Cook the mixture a few minutes longer still in the double boiler. Take from the fire. About a half hour before you wish to serve the custard mix together one cupful of white sugar and the grated rind and juice of one small lemon; make a meringue with the whites of two eggs; stir the lemon juice and sugar quickly and thoroughly into the custard and fold into it the meringue; pile lightly into the glass custard cups and serve very cold. Salted wafers are an excellent accompaniment. Orange custard may be made in the same way.—N. Y. Observer.

Hints to Housekeepers.

If damp bran is used, instead of the traditional tea leaves, when one sweeps a carpet, not only is the dust laid and the work facilitated, but the colors are brightened.

A liberal supply of carbonate of soda placed around the kitchen hearth and any other favorite haunt of black beetles will cause their complete disappearance from those places.

People who suffer from heat in the hands and feet can obtain speedy and easy relief from the same by putting inside their stockings and gloves a small portion of very fine oatmeal.

Large drafts of ice water are always mischievous. If sipped slowly, so that the stomach does not become chilled, it is usually harmless; and eaten slowly, ice-cream rarely injures even an invalid. Fruit juices diluted with cold water and sweetened to taste will quench thirst better than water, and are abundant at the hay and harvest season, when most needed.

One of the most wholesome dishes is a baked apple. It is delicious at breakfast as well as at supper. In fact, apples in almost any form are invaluable. For variety's sake try peeling the apples before baking them. Peel and core them, fill the hollows with spice and sugar, and bake long enough to give them a thin, crispy crust. Sometimes a bit of butter is placed on top of each apple before putting in the oven. Serve them cold with whipped cream.

White enamelled kitchen utensils often become to all appearances hopelessly ruined when food has burned to them. Place a mixture of strong soap powder and boiling water in such kettles, let them stand for two or three days on the back of the stove without changing the water. Then pour off the water and rub the inside with a soft cloth. All blackness and stain will disappear. Be careful not to scratch or scrape the kettle before soaking in this way, as the enamel will crack.

A certain housewife uses nothing but butter in cooking, thereby making her pastry and many other dishes much more appetizing. She uses it even when it is at its highest price in the market. In summer, when it is at its cheapest, she buys ten, fifteen or even twenty pounds, and puts it in a large preserving kettle on the stove. As the butter heats, the scum rising to the surface is skimmed off. When the butter reaches the boiling point it is removed from the fire and strained into a large stone jar. When cold it is covered with salt to the depth of an inch. The jar is then covered closely and placed in the cellar.

That so prosaic an occupation as dish-washing may be elevated to the dignity of a science is a fact of which not every housewife is aware. The easiest and, indeed, the only proper method is to have ready a pan of hot soapsuds and a pan of clean, clear hot water. First scrape the dishes, then wash them well in the soapsuds, next rinse them in the clear water and set them to drain on the rack, and, lastly, wipe them dry with clean linen towels. The water should be poured away as soon as it becomes cold or dirty, and the pans refilled. In order of washing, the glassware comes first, the silverware next, then the china, and, finally, the kitchen utensils. It will, however, be found a great saving of time and labor to wash saucepans, soup-kettles, frying-pans, etc., as soon as they are emptied of their contents. There will then be no necessity for scraping away dried particles—an operation which always results in injury to the utensil—and the process of dish-washing will be appreciably lightened and shortened.

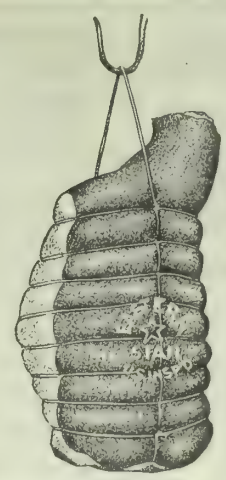
Domestic Hints.

Spanish Mackerel with Green Peas.—Fry in butter two or three slices of onion for a few minutes. Take out the onion and cook in the butter a Spanish mackerel, cut in four pieces. Fry till done. Have some green peas cooked, drain, heat in melted butter, and when you have taken the mackerel up on the serving plate, pour the peas around it.

Curried Potatoes.—Melt two tablespoonfuls of butter and cook in it a tablespoonful of minced onion, add a heaping tablespoonful of flour, a tablespoonful of curry powder, half a teaspoonful of salt and a cupful of hot milk. Let boil five minutes; strain over one pint of hot cooked potato balls. Serve hot. This is excellent with cold meats, ham and bacon.

Potatoes Maitre d'Hotel.—Pare, wash and shape potatoes in tiny balls, using a vegetable scoop for the purpose. Cook one pint of balls in boiling salted water and drain. Cream a tablespoonful of butter, add a teaspoonful of salt, a dash of cayenne, a tablespoonful of finely chopped parsley, and one egg well beaten. Place the saucepan containing the potatoes over the fire, add cupful of milk, shake the saucepan about, to prevent the milk from burning, and when the milk boils add the butter mixture. Remove at once to the back of the stove and stir gently with a fork, until well mixed; then serve. This is very dainty and is good with fish, chops and warmed over meats.

Potato Timbales.—Crumble sufficient white bread to make one cupful, pressed measure; pour over it a pint of hot milk, cover closely and let stand until cold. Beat with a fork until creamy, add a cupful of raw grated potato, a teaspoonful of salt, half a teaspoonful of white pepper and three well-beaten eggs. A little chopped parsley or grated onion, or a very little grated yellow rind of lemon or nutmeg, may be added. Pour into small, well-buttered timbale moulds, place in a panful of hot water, cover and cook in the oven for forty minutes. Turn out of the moulds and serve. The timbales are given a pretty, green, flecked appearance by dusting the moulds with finely chopped, well-washed parsley before the mixture is poured in.



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References: David Starr Jordan or any Stanford Professor.
PHELAN BUILDING, SAN FRANCISCO.

The Markets.

San Francisco Produce Report.

San Francisco, Sept. 20, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	$ 82¾@ 81½	83⅞@ 82⅝
Thursday	82¾@ 82	83⅝@ 83
Friday	83¾@ 82⅞	84⅛@ 83⅜
Saturday	84½@ 83¾	84⅝@ 84⅜
Monday	84 @ 83¼	84⅛@ 83⅝
Tuesday	83¾@ 83¼	84⅜@ 83⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	53¼@52⅛	44⅛@43⅝
Thursday	53⅜@52⅝	44⅛@43⅝
Friday	54 @53¾	4 ¾@44⅛
Saturday	54⅛@54	45¼@44¾
Monday	54¼@52	45¼@44½
Tuesday	52⅜@51¾	45⅛@44⅜

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 32½@1 32½	$ —@—
Thursday	1 32⅝@1 32½	—@—
Friday	1 34⅞@1 34	—@—
Saturday	1 34¾@1 34⅜	—@—
Monday	1 33⅞@1 33⅝	—@—
Tuesday	1 34⅛@1 33¾	—@—

Wheat.

There is a slight weakening in the tone of the local spot market for wheat owing to quite heavy receipts from the north. California milling is practically nominal, as there is scarcely any in the market. No. 1 shipping is also scarce and has declined a few points corresponding to a decline in the price of Oregon Club, which is practically the only wheat now being received in the local market, and which has declined to $1.40 to $1.45. Oregon Club to arrive can be bought here at $1.35 per cental for October to November delivery. All steamers now on the way down from the north have heavy wheat cargoes and local dealers look for lower prices. The market for December option was somewhat firmer as to its general tone for the week, going up as high as $1.34 at one time, but afterwards weakening somewhat owing to depressing reports from Chicago. Buying was rather slow, however, even the reduced figures failing to have a stimulating effect. Later advices from Chicago to the effect that there were heavy rains in the West and Southwest had the effect of advancing the price a few points. Advices from Eastern grain centers would indicate that unless all signs fail the owners of wheat will require considerable courage this week. Large receipts and liberal daily accumulations in the supply are factors to be reckoned with at once, while the prospect of the world's shortage furnishing adequate reward later is a problem for the future. The heavy movement of wheat from the Canadian Northwest and comparatively limited storage room in that section means a great deal of wheat must be sold abroad at what the market will offer. This will make a poor export prospect for this country for a time, although the record already made for the present crop yield is poor enough.

California Milling	$1 50	@1 60
Cal. No. 1 shipping	1 40	@1 45
Oregon Club	1 40	@1 45

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.35@1.34½.

Flour.

The flour situation contains but little change this week. Prices are as formerly quoted and no change is anticipated in the near future, although some new wheat flour is now on the way from the north and some has already arrived. It is, however, only fit for bakers' use and as stocks of old wheat flour are not heavy, and as there is but little old wheat fit for milling purposes left in the market, the price is expected to be maintained for some time. Shipments to Central and South America points are averaging well, but no export trading in flour has been done with the Orient as yet.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The spot barley market was in a fairly active state this week, choice bright lots of feed being scarce and being readily taken up by jobbers at the maximum quotation of $1.05. One or two sales of strictly choice were reported to have been made as high as $1.07½. Off grades were moving rather slowly, but have advanced slightly in price being brought into requisition by the scarcity of choice stock. There was considerable trading in December option and this, supplemented by unfavorable crop reports from the East, sent the price up several points. The highest sales of futures reported were made at $1.04.

Feed, No. 1 good to choice spot	$1 02½@1 05	
Feed, fair to good	97½@1 00	
Chevalier, No. 1 to choice	1 15	@1 20
Chevalier, common to fair	1 05	@1 10

Oats.

Receipts of black oats are rather light both as to quantity and to color and would indicate that those in need of choice seed black oats had better buy at once. There is no change in the market price here, but choice lots of black oats will bring an advance on quotations. The wide range in the price of reds is accounted for by the number of off grade reds now offering in the local market. Reports from Chicago say that there is a feeling that the recent advance in prices has knocked the edge off the export demand and that a setback is imminent.

Black oats	$1 30	@1 50
Red, choice new	1 30	@1 45
Red, fair	1 10	@1 27½

Corn

There is very little trading being done in corn just now as the local demand from the mills holds the only opportunity for selling. Receipts have fallen off to practically nothing. There is some talk in jobbing circles to the effect that the present crop will affect prices, but this does not seem probable if reports as to its size can be relied upon. Chicago reports say that the shipping demand continues good.

Large White, good to choice	$1 35	@1 40
Large Yellow	1 37½@1 40	
Small Yellow	1 50	@1 55

Rye.

There is very little rye now being held in the local market and very light receipts are coming in. The consequence is that prices are ruling firm as quoted and the supposition is that a choice lot of rye would bring an advance on quotations. One or two Eastern shipments have been received in this market during the current week and were offering at $1.52½.

Good to choice	$1 47½@1 52½	

Buckwheat.

There are not at present sufficient stocks of buckwheat on hand to justify quotations. Local milling firms have very light stocks on hand and one or two sales of seed buckwheat have been made at $2.50.

Good to choice	—	@—

Beans.

With the new crop already arriving, and with every indication that it will be very large, it is only natural that prices should weaken somewhat. Receipts of new crop white beans were very large during the current week, and of good quality. Trading was not brisk and prices declined 25c per cental. Red beans are now offering in the local market at $2.50 to $3 per cental, while Limas are also somewhat weaker. Bayos are out of the market and Blackeyes are scarce and ruling firm at $3.75 to $4. Red Kidneys are also scarce and a shade firmer. Reports from growing sections are all very favorable, indicating a very large crop. The late hot spell is said to have damaged the growing crop of Lima beans somewhat.

Small White, good to choice	$3 50	@3 60
Small White, damaged	1 50	@2 75
Large White	2 00	@2 50
Large White, damaged	75	@1 50
Pinks, damaged	1 50	@2 00
Bayos, good to choice	—	@—
Bayos, damaged	—	@—
Red Kidneys	3 50	@4 00
Reds	2 50	@3 00
Limas, good to choice	5 00	@5 50
Black-eye Beans	3 75	@4 00

Dried Peas.

There are a few California green peas now coming into the market, and so far they show an excellent quality. These peas are finding ready takers at an advance of 15c per cental in price. Niles also show an advance and are ruling firm at the quoted price, $1.85 to $2.10.

Green Peas, California	$1 85	@2 10
Niles	1 75	@2 00

Hops.

Hop picking and baling are still in progress and in most sections the crop is fully average and of good quality. There has been very little movement of a jobbing character for several weeks past owing to the inability of growers and dealers to make their ideas conform in regard to prices. The situation as far as trading is concerned is to-day virtually at a standstill, and, according to all indications, it is likely to remain so for some time to come. There are still estimated to be 25,000 bales of 1904 crop hops in first hands on the Pacific coast, 1600 bales being in the hands of one California grower alone. The only sale of new hops of any magnitude reported was made in Oregon and comprised 500 bales. The fact that the price was kept a secret would indicate that it was not of a nature which would benefit the market to any great extent. Plenty of spot goods is being offered as low as 13c, but with few, if any, takers. Sales of new hops for 30-day delivery are reported as low as 12½c.

Good to choice 1904 crop, nominal	11½@	13

Wool.

The market is very quiet, as growers are still holding above the market price, and there is no prospect of moving any of the fall clip until their ideas become somewhat modified. There was to have been a sale last Saturday at Marysville, but no business was transacted, as the wools were held too high to justify the dealers in buying with the idea of shipment to the Eastern market. The Eastern market is very firm on long wools suitable for worsteds, but there is very little demand for short wools of the variety used for woolens. Some of the jobbers who made contracts at the prices ruling in July and August are coming to the conclusion that they made a mistake, and contracted for the wools at a figure too high to enable them to sell readily at a fair profit.

FALL.

Humboldt and Mendocino	17	@20
Northern, free	10	@16
Northern, defective	9	@14
Middle County, free	13	@17
Middle County, defective	10	@16
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	12	@17
Nevada	16	@20

Hay and Straw.

Hay shipments for the week aggregated 3400 tons, one-half of which came by water. Large shipments of alfalfa are being received from points along the Sacramento river. Reports from most districts indicate that the bulk of the hay crop is under cover in anticipation of early rains. There is a scarcity of the choicest grades of hay, and it is thought that some of the best grades will be called out of storage almost immediately. Locally trade is dull, though the prospect for exporting has improved. Five hundred tons have been sold for export to Russia.

Wheat, good to choice	$ 9 50	@ 13 50
Wheat and Oat	8 00	@ 10 00
Tame Oat, fair to choice	7 00	@ 10 50
Wild Oat	5 00	@ 8 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	5 50	@ 9 00
Stock hay	4 50	@ 5 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	25	@ 40

Millstuffs.

The demand for all kinds of millstuffs continues good and stocks of bran and middlings are rather light. Shorts is also somewhat scarce and stiffer in price. Cracked corn is in good demand and ruling steady at $32 per ton. Rolled barley has advanced to correspond with the advance in the price of barley, and is now ruling firm at $22.50 to $23 per ton. Oilcake meal is temporarily nominal, owing to the fact that none of the factories have stocks on hand.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 50	@ 23 00
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	22 50	@ 23 00
Cornmeal	30 00	@ 30 50
Cracked Corn	32 00	@ —
Oilcake Meal	—	@ —
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

The seed market here remains unchanged. There is enough stock on hand to supply immediate wants, but in most varieties stocks are becoming very light. Threshing is now on in the Lompoc valley and the mustard crop promises very well. Trieste is expected to advance if there is any Eastern demand to speak of, but yellow will doubtless be weaker, as it comes into direct competition with foreign seed. Flaxseed is very scarce and somewhat firmer in price.

Flax	$3 25	@ 3 50
Mustard, Yellow	2 85	@ 3 00
Mustard, Trieste	4 00	@ 4 25
		Per lb.
Canary		6½@ 7
Rape		2½@ 3
Hemp		3½@—
Timothy		5 @ 5½

Honey.

The comb-honey market is firm at 8½c to 10c a pound. Southern California's output this year will approximate 175 carloads. Last year's crop was practically nothing, and present prospects are for higher prices. With the market practically cleaned up last spring, coupled with the fact that the honey crop is light in all Eastern producing States, the honey men of southern California may reasonably look for better prices the coming fall and winter. The present market price for extracted honey is around 5c. The crop estimate above given means about 125,000 cans of extracted. Of comb honey southern California will have, it is thought, not more than fifteen carloads. While California will have about the largest crop in many years, there are some localities where the bees have done pratically nothing. Arizona is nearer to a honey failure this year than in twenty years. The crop has not been so light throughout the East in a decade, while Texas is said to be only within 60% of its normal production.

Extracted, Water White	4¼@	4¼
Extracted, White	4 @	4¼
Extracted, Light Amber	3¾@	4
Extracted, Amber	3 @	3½
Extracted, Dark Amber	2½@	3
White Comb, 1-frames	9 @	10
Amber Comb	7 @	8

Beeswax.

The market continues in very fair shape and prices are being well maintained. A heavy yield of honey in the southern part of the State would indicate that wax will be plentiful, though conflicting reports coming from other honey producing sections in regard to a short yield leave one in doubt as to the true situation.

Good to choice, light ₱ lb	25	@26
Dark	24	@25

Live Stock and Meats.

The mutton market is somewhat firmer this week owing to the fact that fall shearing is now on and receipts are on this account rather light. Veal is weaker owing to very large receipts. Both range and dairy calves are coming very plentifully. The beef and hog markets remain steady.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@	5½
Beef, 2nd quality	3½@	4
Beef, 3rd quality	3 @	3½
Mutton—ewes, 5@6½c; wethers	7 @	7½
Hogs, hard grain, 130 to 230 lbs	5¾@	—
Hogs, large, hard, over 230 pounds	5½@	5¾
Hogs, small, fat, under 130 lbs	5½@	5¾
Veal, large, ₱ lb	5 @	7
Veal, small, ₱ lb	7 @	9
Lamb, spring, ₱ lb	8 @	9

Hides, Skins and Tallow.

The hide market is still very firm, with prices fully as stiff as a week ago. There is, however, a feeling that the present condition cannot continue indefinitely. Tanners, both on the coast and in the East, are curtailing their requirements, and few of the larger establishments are running to their full capacity.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11¼@—	10¼@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—

Pelts, long wool, ₱ skin	1 50@	2 00
Pelts, medium, ₱ skin	90@	1 25
Pelts, short wool, ₱ skin	60@	90
Pelts, shearling, ₱ skin	20@	50
Horse Hides, salted, large prime, each	3 00@	—
Horse Hides, salted, medium	2 75@	—
Horse Hides, salted, small	2 25@	—
Horse Hides, dry, large	1 75@	—
Horse Hides, dry, medium	1 50@	—
Horse Hides, dry, small	1 00@	—
Tallow, good quality	4 @	4½
Tallow, poorer grades	2½@	3½

Bags and Bagging.

Grain bag dealers are in a quandary as to whether there will be bags enough available to take care of the wheat, barley and oat crops of 1905. Bags are now considered firm at 7¾c, which is 2c higher than last year's prices, and there are fears of a shortage that will compel farmers in some instances to erect bins for their grain in lieu of obtaining bags. Farmers of the coast will pay out $3,262,500 for bags into which to place their grain this year. Of this sum the Northwest will pay five-sixths.

Bean Bags	5¾@	—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7 @	7½
Fruit Sacks, jute, as to quality	6 @	7½
Grain Bags, Calcutta, 22x36, spot	7½@	7¾
Wool Sacks, 4-lb	33 @	34
Wool Sacks, 3¼ lb	30 @	31

Poultry.

The market continues steady—almost strong—at appearing quotations, notwithstanding the fact that receipts of Eastern frozen poultry have been heavy. Dealers are anticipating a good market for the balance of the week as there will be a Jewish New Year celebration Sept. 30th and Oct. 1st. There will be a big demand for large hens and broilers and turkeys at satisfactory prices. Shipments for this trade should arrive here not later than Sept. 26th and 27th.

Turkeys, choice Young, ₱ lb	$ 24	@ 26
Turkeys, live gobblers, ₱ lb	21	@ 22
Turkeys, live hens ₱ lb	22	@ 24
Hens, California, ₱ dozen	4 50	@ 5 50
Hens, large	6 00	@ 7 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 00	@ 5 50
Fryers	3 50	@ 4 50
Broilers, large	3 00	@ 3 50

Broilers, small to medium	2 50	@	3 00
Ducks, old, ₱ dozen	4 50	@	5 00
Ducks, young, ₱ dozen	4 00	@	6 00
Geese, ₱ pair	2 00	@	—
Goslings, ₱ pair	2 25	@	2 50
Pigeons, old, ₱ dozen	1 25	@	1 50
Pigeons, young	2 00	@	2 25

Butter.

Butter is firmer in price on fancy stock, only an advance of 1c being noted in the price of extra choice stock. Off grades are moving somewhat more freely, some shortage being drawn out by the advance in the price of choice creamery stock.

Creamery, extras, ₱ lb	25	@27
Creamery, firsts	23	@24
Creamery, seconds	21	@22
Dairy, select	20	@21
Dairy, firsts	19	@—
Dairy, seconds	18	@—
California storage	22	@24
Mixed Store	17	@18

Cheese.

The market is a shade firmer, though prices in the main are about the same. A strictly fancy lot would, however, bring a slight advance on quotations. The following quotations are for actual sales made in this market during the current week.

California, fancy flat, new	11	@12
California, good to choice	10	@10½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13½
Eastern, new	15½	@18½

Eggs.

The market is now in an active state, all grades being in demand. Receipts have been large, but the brisk demand has compelled a further advance in prices. The hot weather of the past few days has not yet begun to affect the quality of the receipts, but it is thought that candling will soon become necessary if the hot weather continues. Receipts of storage eggs are light and the demand is fairly good, but prices have not yet advanced any owing to the fact that they come into direct competition with Eastern eggs.

California, select, large, white and fresh	34	@36
California, select, irregular color & size	26	@28
California, good to choice store	18	@24
Eastern firsts	21	@23
Eastern seconds	18	@19

Potatoes.

There is very little change in the potato market. Prices are ruling steady as quoted. Receipts are fairly large and of good quality. A fairly good shipping demand for the cheaper grades is holding prices at their present level. From the appearance of such of the crop as has already been marketed and from the present size of the receipts the inference is that prices will not advance materially for several months.

Cal. Early Rose, ₱ cental	50	@	60
River Burbanks, ₱ cental	60	@	85
Salinas Burbanks	85	@	1 15
Chile Garnet, ₱ cental	60	@	70
White Rose, ₱ cental	—	@	—

Vegetables.

The local vegetable market is a shade weaker in its general tone than at last quotations. Lima beans have declined 1c per pound in price and wax beans are now out of the market entirely. It is reported, however, that the past few days of extremely hot weather have injured the growing Lima bean crop quite materially. In some sections the shortage will amount to as much as 25% of the average crop. The quality has also been affected to a considerable extent, and it is now predicted that future receipts of Limas will contain little that is strictly choice, owing to the fact that the pods, and in some cases even the beans, were badly shriveled by the heat. String beans are ½c firmer in price owing to the lightness of the receipts. Egg plant is somewhat weaker and green peas are a shade firmer. Tomatoes have advanced 15c in price and receipts now coming in are rather light and of good quality.

Beans, Lima, ₱ lb	—	@	2
Beans, String, ₱ lb	3½	@	4
Beans, Wax, ₱ lb	—	@	—
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	50	@	1 25
Egg Plant, ₱ box	25	@	—
Garlic, ₱ lb	3	@	5
Onions, New Yellow Danvers, ₱ ctl	75	@	85
Onions, Australian Brown, ₱ ctl	70	@	85
Peas, Green, ₱ lb	4	@	5
Peppers, Bell, ₱ box	35	@	40
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	35	@	50
Tomatoes, ₱ box or crate	65	@	85

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 30 to 30 lbs. gross.

Fresh Fruits.

The fresh fruit market is at the moment in very good shape. Receipts are plentiful and of good quality, the latter fact being accounted for by the clemency of the weather. Prices are being well maintained and in some fruits show a substantial advantage, this being especially true in the case of apples. A still further advance in the price of apples is expected if reports from Eastern apple raising sections of crop failures are able to be confirmed. Cantaloupes of all grades and sizes are still very plentiful, pony crates selling at $1.25 to $1.50 and boxes at 50c to 75c. Crabapples are not to be had in the local market at any price as there have been no arrivals during the week. Grapes are slightly weaker in price, this fact being accounted for by the off quality of the receipts and a slight falling off in the demand. Peaches are also a shade weaker and Bartlett pears are firmer. Plums of all varieties are ruling strong both as to price and demand.

Apples, choice to select, ₱ 50-lb bx	1 00	@	1 25
Apples, good to choice, ₱ 50-lb. box	75	@	1 00
Apples, fair to good, ₱ 40-lb box	50	@	75
Blackberries, ₱ chest	1 75	@	5 00
Cantaloupes, pony crate	1 25	@	1 50
Cantaloupes, ₱ box	50	@	75
Crabapples, ₱ small box	—	@	—
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	75	@	1 50
Grapes, Seedless, ₱ crate	75	@	1 00
Grapes, ₱ small box	50	@	75
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ large box	60	@	75
Peaches, ₱ small box	25	@	40
Pears, Bartlett, fair to choice, 40-lb box	1 50	@	2 00
Plums, large, ₱ crate	65	@	90
Plums, ordinary, ₱ box	40	@	60
Raspberries, ₱ chest	6 00	@	7 00
Strawberries, Longworth, ₱ chest	7 00	@	9 00
Strawberries, large var., ₱ chest	4 00	@	5 00
Strawberries, Santa Clara, ₱ chest	5 00	@	7 00
Watermelons, ₱ doz	1 20	@	2 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The local dried fruit market is quiet just at present and apples are a shade weaker, though at quotably unchanged prices. Prunes are holding their own well. With October a revival of activity is expected, when new fruit will move freely, in response to the Eastern demand. While Santa Clara prunes are quoted at 3¾c and Sonomas at 3½c, some packers have withdrawn temporarily as sellers, and others refuse to consider offers below 4c, bag basis. Higher prices later on are predicted. Current reports of a weaker feeling in this market for apricots are without foundation. According to careful investigations made by large packing concerns, the quantity of apricots unsold on the coast is small and held at high figures, nothing being offered under 7c to 7½c for ungraded stock.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	5½	@	6
Apples, extra choice to fancy, 50-lb boxes	6	@	6½
Apricots, Royal, good to choice, ₱ lb	7	@	7½
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	5	@	6½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	4½
Peaches, unpeeled, good to choice	7½	@	8
Peaches, unpeeled, fancy to extra fancy	7½	@	8½
Pears, standard, ₱ lb	6½	@	7
Pears, choice to fancy	7½	@	8½
Plums, Black, pitted	4½	@	5½
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	6½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3½@3½c; 70-80s, 2¾@3c; 80-90s, 2½@2¾c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

The local market contains little of interest, as there are practically no spot goods in the market. Picking is now general throughout the raisin sections and it is estimated that the crop will be considerably short of the usual yield. The following prices were named Sept. 15th by the Growers' and Packers' Association at Fresno: Bleached Thompson's Seedless, extra fancy, 10½c; fancy, 9c; choice, 8; standard, 7c; bleached Sultanas, fancy, 7c; choice, 6c; standard, 5½c. Prices are for 50-pound cases, f. o. b., discount of 1½% for cash, and are about 2c higher than ever before. Prices on Muscatels are not likely to be fixed before October.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5	@	c
Fancy, 12-oz. Seeded	5½	@	c
Choice, 12-oz. Seeded	4½	@	c

Citrus Fruits.

The citrus fruit market is now in very good shape, owing largely to the clemency of the weather, which tends to keep the quality of receipts up to standard. Oranges are very scarce, Valencias being the only kind now appearing in the local fresh fruit market. A slight advance in price is noted on the same. Lemons are a shade weaker and grape fruit is firmer. Reports from the southern part of the State continue to favor the growing crop of oranges, and it now appears that the crop will be one of the largest that has ever been seen in that section.

Oranges, Valencias, ₱ box	3 00	@	4 50
Lemons, California, select, ₱ box	3 00	@	4 00
Lemons, California, good to choice	2 00	@	3 00
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	2 00	@	3 50
Limes, ₱ box	5 50	@	6 00

Nuts.

The new walnut prices will be named by the growers' association next Saturday, and until that time there will be practically no buying of futures, as it is rather uncertain how the prices will rule. It is expected, however, that prices will rule higher than the closing prices for the 1904 crop, as the crop will be somewhat light, owing to the extremely hot weather of July. Quite a number of new almonds are now coming into the market and are bringing the figures named for them by the association, with the exception of Nonpareils, which are being sold in this market at 1c less than the price named for them last week by the growers. Choice lots of I X Ls will bring about an advance of ¼c to ½c over the association price.

Peanuts, fair to prime	4½	@	5¼
Cal. Walnuts, No. 1 soft shell	12	@	13
Cal. Walnuts, No. 2 soft shell	7	@	7½
Cal. Walnuts, No. 1 hard shell	11	@	—
Cal. Walnuts, No. 2 hard shell	7	@	7½
Almonds, IXL, ₱ lb	12½	@	13½
Almonds, Ne Plus Ultra, ₱ lb	12	@	13
Almonds, Nonpareil, ₱ lb	13	@	14
Almonds, Languedoc, ₱ lb	—	@	—
Almonds, Golden State, ₱ lb	—	@	—
Hard Shell, ₱ lb	—	@	—

Wine.

The wine yield for the present year will be much short of the average yield, some estimates placing the shortage as high as 40%, while it is generally conceded that it will exceed one-third of the average yield. This condition will apply both to sweet and dry wines, but it is not thought that it will seriously affect prices, as an authority well posted on the industry has given out that a considerable part of last year's vintage is still on hand. It is further stated by some of the larger wine concerns that no material increase in price is to be expected, as it is contrary to the policy of the larger wine producers to discourage consumption by placing the price at a figure which will make it a barrier. The picking has already been begun, and pressing will be begun within the next two weeks. Most of the grapes outside of the independent wineries have been contracted for by the large concerns at figures which leave little room to doubt that the vintage will be very light.

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THE DAIRY.

State Fair Scores for Butter and Cheese.

The entries of butter at the California State Fair, which has been going on during the past week, were not as large in number as during some previous years. but was representative of the best known creameries in the State. There were twenty-five in all with every creamery section represented except southern California.

The entries were judged Thursday by W. H. Roussel, H. P. Glasier and W. H. Saylor, Mr. Saylor preparing the following report: The judges, while not finding a winning tub that justified as high a score as at some previous fairs, found, with only a few exceptions, a fine lot of goods, especially when the fact is taken into consideration that the most of it represented gathered cream plants. One exception to this was in the case of Neils Beck, who is the butter maker for the Danish Creamery at Fresno. This big creamery has held its business down strictly to a whole milk proposition, and this is the third (and possibly the fourth) time that it has headed the list of scores at the fair.

It will prove interesting to butter makers to know that pasteurization secured a strong endorsement in the scores, as second place went to Mr. A. Jensen's Creamery in Humboldt county. Mr. Jensen is a staunch advocate of pasteurization of cream for butter making. Another lot of pasteurized butter exhibited was by Mr. Philip Leiser of the Crystal Cream and Butter Co. of Sacramento, who won twelfth place. The scores are given in the accompanying table.

Cheese.—As at all State Fairs the cheese entries were light, there being only four. The scores are as follows:

M. G. Salmina, Gilroy	85 0
Bryte & Augustine, Sacramento	83.0
A Surtman, San Gregorio	82.0
Frank O'Brien, San Felipe	79.5

Exhibitor.	Creamery.	Location.	Score.
Neils Beck	Danish	Fresno	97 63
A. Jensen	Central	Ferndale	97 42
John Carlson	Oakland Cream Depot	Oakland	96 92
Fred Leiser	Los Banos	Los Banos	96 5
Julius Madsen	Capitol	Ferndale	96 17
Ira A. King	Pioneer	Ferndale	96
L. P. Shaw	Crescent	Kingsburg	95 92
L. J. Siple	Pt. Arena	Pt. Arena	95 79
W. A. Snow	Ceres	Ceres	95 67
Nels Erieksen	Bridgeport	Miller	95 33
Charles Schwilk	The Creamery	Sacramento	94 92
P. Leiser	Crystal	Sacramento	94 92
Wm. Brush	Eel River	Waddington	94 17
J. D. Tupper	Stockton	Stockton	93 92
J. H. Severin	Modesto	Modesto	93 65
E. J. Knox	Honey Lake	Spoonville	93 41
Neils Beck	Sheppard	Pt. Arena	93 08
R. Pozzi	Pozzi	Marysville	92 92
L. L. Dorman	Selma	Selma	92 92
G. W. Lucy	Colusa	Colusa	92 75
Wallace Stevenson	New Era	Newman	92 42
Name lost.			91 83
Morris Neilson	Excelsior	Ferndale	91 75
Sciarini & Bacciorini	Golden	Collinsville	90 33
E. F. Hale	Orland	Orland	86 67

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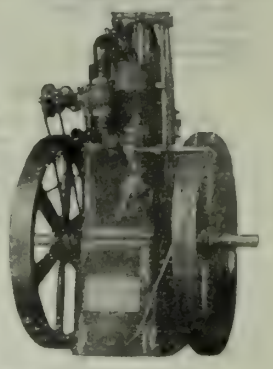
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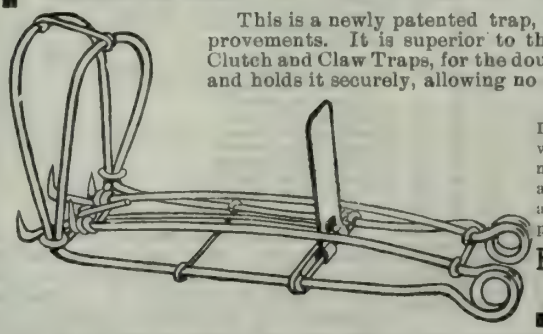
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ENTOMOLOGICAL.

Dr. Woodbridge has a Fungus for the Black Scale.

Dr. S. M. Woodbridge of South Pasadena gives the Los Angeles Post his observations on fighting black scale by propagating a destroying fungus. He says:

During the summer of 1898 I found on trees in San Bernardino county some black scale (Lecanium oleæ) that were evidently diseased. I brought samples of these scales to our laboratory in Los Angeles and had Prof. McClatchie make cultures of the fungus, which was apparently getting in its deadly work. Subsequently many cultures of this fungus were made and I distributed them widely through our scale infested districts. In some districts the work was quite effective that season. Mr. A. B. Smith of San Dimas had his ranch cleaned up by this fungus. In other places the disease seemed to make little headway. Believing that a disease is by far the cheapest method of getting rid of our scale pests, this department has persistently continued to make cultures annually and has distributed them widely through southern California. These have thrived, more or less indifferently, for a short time and then disappeared. This year the results were quite different and I find that this fungous disease has been doing very effective destruction in many localities, and it would appear to have become acclimated and I trust has come to stay, although it seems to have been "winter killed" for several successive years.

The object of this communication is to get your assistance in the perpetuation and distribution of this fungous disease of the black scale.

The fungus is grown in petre dishes, i. e., cultures are made of it on pieces of sterilized bread about 2 inches square. When the cultures are made or at the proper time thereafter, three of them are mixed with a barrel of water at a temperature of not less than 70° Fahrenheit. Such a barrel containing fifty gallons of water is enough to spray 1600 trees. I have done this by merely spraying through an ordinary hand syringe, say, one-half pint of the mixture on a tree; every fifth tree is enough to put the spray upon. Being a fungous and very light, it is quickly distributed to its proper host and does effective work under proper conditions. Just what these favorable conditions are must be further determined, and herein we need the growers' assistance.

The fungous disease effects only, so far as has been observed, the young scale after hatching and before leaving the old shell, but if one of the brood is attacked all seem to get the disease and die. To detect the presence of the disease turn up an old scale, and if a white fungus is found with the aid of a glass on the edges of the scale and on the young ones you will know the disease is present.

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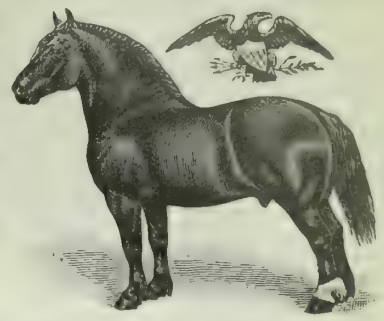
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THE VETERINARIAN.

Answers to Inquiries.

By E. J. CREELY, D. V. S., Dean of San Francisco Veterinary College.

A CASE OF INDIGESTION.

TO THE EDITOR:—Will you please have Dr. Creely tell me through your paper what can be done for a mule which scours badly even when fed only on dry hay. From the amount of foam accompanying a passage of the bowels it looks as though it might be indigestion. The animal is not old, as she is but now cutting her tusks, but she is thin and mopes as though sick. I have owned her ten months, and she has had the scours during all that time.—FARMER, Turlock.

The trouble is indigestion, caused by improperly cutting the canines. Make a crucial incision through the gums and apply a saturated solution of boric acid to the gums many times daily. Give a teaspoonful of copperas daily.

ELEPHANTIASIS.

TO THE EDITOR:—I have a horse which has some kind of a swelling on one hind leg. It is enlarged all around about the fetlock joint and nearly to the joint above. He has been in this condition for several years, it never seeming to get better or worse. He was never lame in it, neither did it seem to be sore. I have been told that it was first caused by a barbed wire cut. I do not know what kind of a swelling it is, but here it is generally called the "big leg." Is there any known cure for this kind of a swelling? I let the horse to a neighbor for awhile and he was sent home a few days ago with this leg swollen as large as two legs and clear to his body. It seems to pain him a great deal, and he is very uneasy and eats very little. I could not find out how he was injured. What is best for him?—A SUBSCRIBER, Lakeview.

The disease is elephantiasis, or chronic lymphangitis. Repeated attacks of lymphangitis would result in the condition described. It may result from a traumatic injury, but 90 times out of 100 it results from an irritation or derangement along the intestinal tract. Changing the method of feeding resulted in the last attack.

Treatment—One quart of pure olive oil given in one dose, and the following powders: Soda bi carb., 4 ounces; nux vomica, 2 ounces; salol, 1 ounce; mix and make twelve powders, and give three daily in a bran mash. Also the following external application: Goulard's ext. lead, 16 ounces; tinct. opium, 8 ounces; water, 1 gallon; mix and apply to leg three times daily, after which apply hot water blankets. Give nothing but bran and carrots for several days. E. J. CREELY, D. V. S.

510 Golden Gate avenue, S. F.

State Report on Anthrax.

Dr. Charles Keane, the State Veterinarian, conversed with a Sacramento Union reporter recently on the subject of the appearance of anthrax at Napa and the risk of contagion from the improper handling of hides from infected animals. Dr. Keane said it was substantially true that hides from diseased carcasses had been sold to a local tannery, but it was done in ignorance, and he had been able to make a timely interference and the hides had been burned.

Dr. Keane explained that the bacillus of anthrax is peculiarly tenacious of life, being able, in fact, to withstand the action of boiling water for several minutes. To destroy it the very strongest disinfectants are needed.

The disease is easily communicated by contact to human beings, although, of course, there must be some abrasion of the skin to permit of entrance. There have been cases of death in California from this cause, although it would not be correct to infer that there was any risk of contagion by means of boots or shoes. In some parts of the world anthrax in sheep had produced what is known as wool sorters' disease, which is a species of malignant carbuncle. It is hardly possible, therefore, to take too many precautions in the disposition of hides from infected animals.

Anthrax has broken out somewhat severely in Napa and the farmers were unaware of what they had to contend against. Carcasses had been dragged along the ground and elementary precautions had been neglected. Upon arrival at Napa he had taken prompt and effective measures. The hides that had been sent to the tannery and elsewhere had been recovered and properly destroyed and all chance of mischief had been obviated. He had also visited other ranches at Colusa and Grand Island where the disease had appeared, and had taken all necessary measures for its control. Quarantine had been established and the farmers had been instructed that the hides must on no account be removed from the carcasses of infected animals. There was, therefore, no occasion for any alarm.

NEW WHEAT MEASURE.—Tacoma dispatch to S. F. Chronicle: The Portland Chamber of Commerce lately requested the Washington State Grain Commission to change the test weight of a measured bushel of wheat from 58 to 59 pounds. The fact that this test of wheat is taken as a basis for grading makes the matter one of great importance to growers, millers and exporters. For years Oregon has had a 59-pound standard and California a 60-pound. Washington has kept to 58 pounds because that is the standard at Chicago and throughout the East. It is expected that from 4,000,000 to 6,000,000 bushels of this year's crop will be shipped to San Francisco. Low coastwise freight rates will make it possible to send Washington wheat to California for both milling and export purposes.

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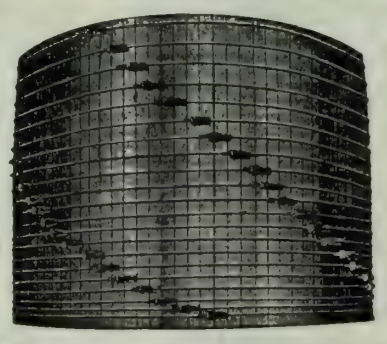
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THE STOCK YARD.

The Stock Breeders on Agricultural Education.

The following resolutions were introduced by Judge Shields at the Live Stock Breeders' meeting in Sacramento and were passed by the association:

WHEREAS, The Legislature at its latest session enacted a statute providing for the purchase of a university farm and the establishment of a school of agriculture thereon; and

WHEREAS, There has been considerable but unavoidable delay in the selection of said farm, with the consequent delay of the opening of said school, the commencement of experimental work and the conduct of short courses of instruction in agricultural practice; and

WHEREAS, It has been advised by certain authorized persons that many of the most important provisions of the bill be ignored or departed from; and

WHEREAS, This bill was a farmers' measure, originated by them, drawn and advocated by them and passed in their interests; therefore, be it

Resolved, That we demand the enforcement of the bill as it was passed and according to its strict terms; and be it further

Resolved, That we earnestly request of the members of the commission for the selection of the farm that they proceed with all possible haste to select the said farm, of the kind and in the locality provided for in the said bill; and be it further

Resolved, That we most earnestly oppose the suggestion that the farm be purchased in the vicinity of Berkeley or adjoining the University, because such selection would be in violation of the bill, and because suitable soil and climate cannot be had there, nor is the same susceptible of irrigation; and be it further

Resolved, That we deny the sole purpose of agricultural education is to prepare teachers, specialists and leaders of thought. This is only one of its purposes, and modern experience has shown that to be effective it must be supplemented by that type of practical and popular instruction which meets the demands of the great body of our farming people. We make no assault upon our College of Agriculture. Let it continue to prepare after its chosen method the very few young men which it is able to attract, leaving us free to educate our remaining youth to such extent as their means afford and in the manner suited to their needs; and be it further

Resolved, That as this is a farmers' bill, we demand that we be left free to realize all of its possible benefits. We submit that we are the best judges of what we want, and as the farmer and producer pays all the taxes, including such as support all the departments of the State University, we feel that we should be permitted to use some of our own money for the education of our own youth; and be it further

Resolved, That we favor the School of Agriculture provided for in our bill, and ask that it be immediately organized. There are thousands of our young men and women who need it and will immediately attend it for such length of time as their means and time afford, who are and will be unable to take a college course. We hold in indifference the claim that such youth at the end of their periods of attendance are not thoroughly educated. They will be better educated than when they entered, and by whatever name their position may properly be called, they have been assisted, enabled to earn better livings, to lead happier lives, and the State has been strengthened by having been given more enlightened citizens, who, as farmers, will create her wealth rather than having been driven into other walks to, in too many instances, become charges upon her bounty; and be it further

Resolved, That we favor that character of instruction which is qualified to reach the great body of our farm youth, which offers something to everyone, no matter what his time or means, and which includes within its scope practical as well as theoretical training, and which has the direct purpose and tendency to illustrate the best possibilities of an agricultural life, and to incline the student to the adoption of the profession of agriculture, and that we have confidence that our bill properly carried out will effect these ends.

C. B. CARRINGTON, Hayward, Cal., at the recent State Fair, got first and second prizes on pen; first, second and third prizes on cocks; first, second and third prizes on cockerels, having won first cockerel prize at the State Fair for the last four years in succession.

Patrons of Husbandry.

Tulare Grange Meeting.

TO THE EDITOR:—Tulare Grange convened in stated session at its hall on Saturday the 16th.

After reading and approval of minutes of last regular and special meetings, and the approval and payment of bills, committee reports were considered.

The special committee to consider subjects to be presented, by the representatives of Grange, to the State Grange which will convene in the city of Napa on October 3 next, reported in favor of the following:

We recommend the National Good Roads Law, as prepared by the National Grange and introduced in the House of Representatives.

We recommend a revision of the revenue laws of California by which ability to pay shall be the test of obligation to do so; by which realty shall be relieved of its, now, disproportionate rate of taxation; by which the State shall derive its revenue from other sources than direct taxation of real and personal property; by which the recipient of the income not derived from property taxed, shall pay his equitable pro rata of taxation; by which a portion of the State's revenue shall be raised by indirect taxation.

We recommend State legislation for the equitable distribution of water for irrigation; for insurance against fire by the State; for life insurance by the Federal Government.

We believe the Lorren's system of land registration is one of the most meritorious acts of legislation ever enacted in California. Justice to the land owner and purchaser alike requires it should be enforced with all the powers of the State. Its heretofore nonenforcement is a miscarriage of an equitable and just law in this State.

Each of these subjects was considered separately and a careful consideration given to them, and each approved by itself and all approved as a whole.

These several subjects have been considered, studied and approved by subordinate, State and National Granges, except the subjects of State fire insurance and Federal life insurance. These being new subjects received more than usual consideration; but it was conceded on all sides that in the well doing and well being of civilized society, efficient fire and life insurance is one of the most essential necessities. In no department in the administration of public utilities are greater wrongs perpetrated than in those of fire and life insurance; by the payment of undue commissions; by the use, by the officers of the companies for their own speculative purposes, of the company funds; by the payment to themselves of pensions and enormous salaries — salaries many times out of proportion to what any one man can equitably earn; the funds of the companies are speculated and juggled with to the detriment of the insured. No such culpable use of funds and no such exorbitant salaries are allowed, or thought of, in State or Federal administration, and this Grange greatly regrets to say, in its judgment, the abuse will not be remedied until fire and life insurance are departments of our State and Federal Governments. Tulare Grange asks the careful consideration of a thoughtful public to this subject.

Brother and Sister F. H. Styles were elected alternates to the State Grange.

J. T.

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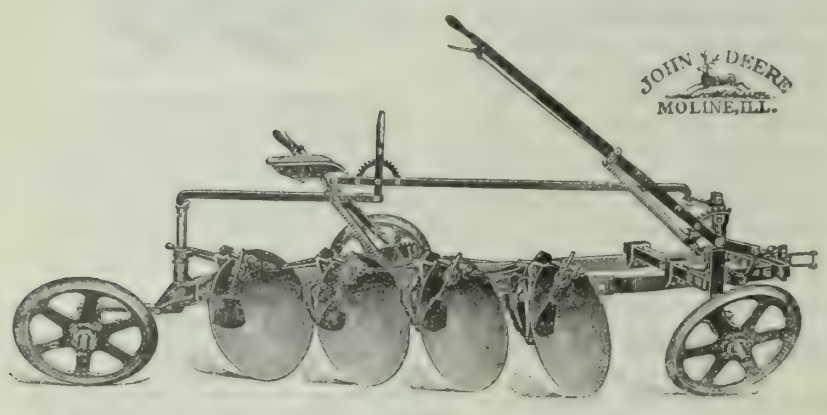
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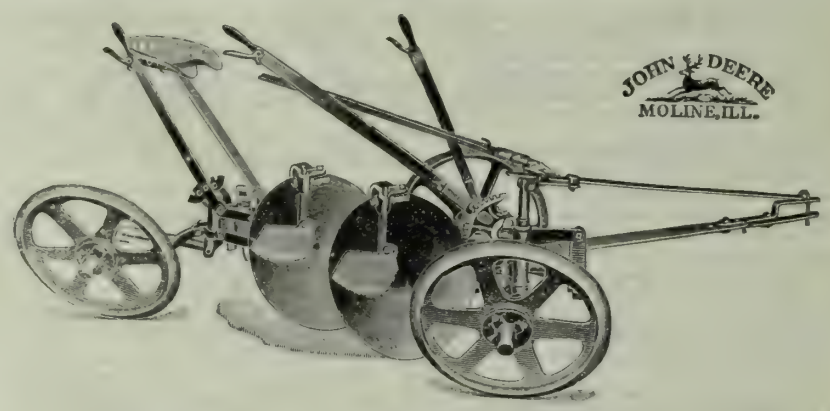
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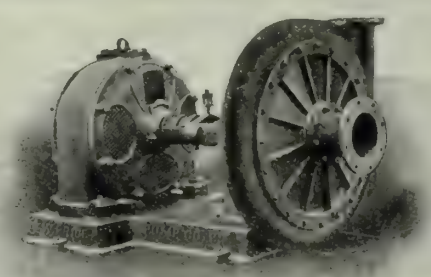
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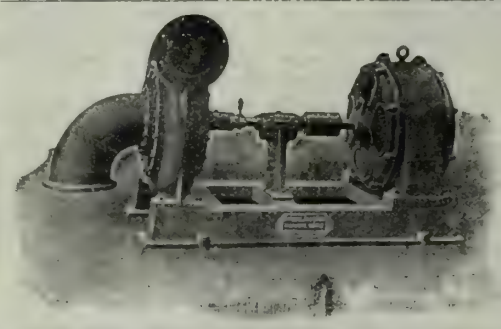
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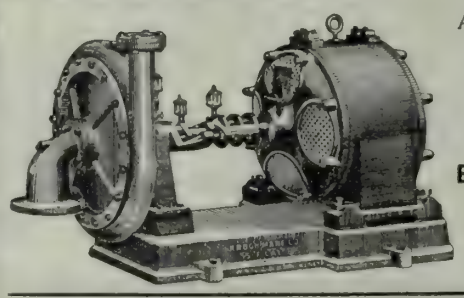
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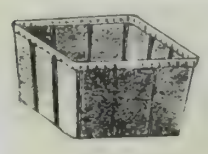
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Vol. LXX. No. 14. SAN FRANCISCO, SATURDAY, SEPTEMBER 30, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

The Fruit Industry.

We turn again this week to illustrations of the deciduous fruit industry of California and present two pictures illustrative of it as developed in the vicinity of San Jose, the brisk and beautiful city which is the center of the prune industry of the State, but ministers to many other fruits as well. In fact, the commercial fruit interests of Santa Clara county, tributary to the county seat San Jose, are quite diversified and include nearly everything that can be put into a box, can or a bottle to reach a purchaser. Although as great in no other line as in the prune, there is still enough of other fruits to comprise a large shipment of table fruits in a fresh state, a very large output of canned fruits and a respectable amount of dried fruits not of the prune class.

One of the fruits in which Santa Clara has distinctive excellence is the cherry, and the cherry is not content with all parts of California. It has in fact quite a narrow idea of suitable conditions and the largest product is around the bay of San Francisco, although some districts tributary to the Sacramento valley make a large commercial product. The deep rich loams of the Santa Clara district have, however, from the earliest times of American fruit planting shown their ability to do exceedingly well with the cherry, and there are orchards thirty years or more of age which yield a value and warrant a valuation which is fit to frighten a buyer who thinks of getting into the cherry game. The result is that during the last few years the cherry acreage has been considerably increased by new plantings.



A Colonnade of Blooming Royal Ann Cherry Trees at San Jose.

The picture gives a glimpse of the cherry trees on the Flickinger fruit farms at the blooming time, and the variety is the so-called Royal Ann, which is the queen canning and preserving cherry of California. Royal Ann is a local name—the cherry is really Napoleon Bigarreau—but the grafted trees brought into Oregon in the '40s lost their label and the pioneer fruit growers gallantly renamed the fruit after what they probably most longed for in their loneliness—a lady. And this lady came to California early in the '50s, and her beauty of form, her stately whiteness and firmness, and withal her refusal to assume anything but the most distant blush at the warmest wooing of the California sunshine declared her queenship, and so she was Royal Ann to Californians also. At this late date, with the name glorified by the prismatic colors which fruit canners choose for their labels and with the fruit rolling into cut glass dishes with only the faintest tint in the syrup so characteristic as to be widely recognized, it is doubtful whether the fruit will ever regain its relationship to the discontented Corsican. The picture shows how glorious is the blooming time in an old California cherry orchard.



Partial View of Drying Ground of J. H. Flickinger Co.—Apricots in the Sun.

The other picture on this page is suggestive of the fruit drying interests at San Jose. It shows part of a good drying plant of moderate size at the Flickinger orchards, where they put into dried form the surplus of the various fruits not required in their canning enterprise, which is the main line. The picture shows only the drying space and some of the sulphur boxes into which the trays go after filling and before they reach the sunshine. The cutting sheds, where the fruit is pitted and placed upon the trays, are somewhere out of view upon the right.

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SAN FRANCISCO, SEPTEMBER 30, 1905.

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The Week.

As we go to press on Wednesday the rainy season seems to be actually beginning in the central part of the State. The south has had a strong dash from the center of rainstorms in the Gulf of California and has had lightning displays and that sort of thing, which is rare in the California valleys. The north has had rains from the main supply region in the north Pacific ocean and the clouds seem set for the usual working down of such rains to include the central parts of the State. Probably as many people are now ready for it as there ever are at one time, although some late fruits are still out and many are anxious to start idle teams to field work. It is the beginning of another crop year and too soon, of course, to say anything about it, except to express the hope that it may have all the promise of the last and as much more of realization as is possible.

The beginning of the Northern wheat, which will figure very largely in the California markets this year, is now forcing its issue with what there is of a California crop. The market is, however, firm and buying active at a slight decline. Barley is active and a little better in tone than last week. Northern oats are selling well and black and red for seed purposes are much higher. Corn is doing well, but rye droops a little. New beans are arriving freely and prices are given in our Market Review. Millstuffs are in light supply and selling at an advance. Hay is unchanged, except that the choicest wheat and oat have gone above quotations. Beef is unchanged and mutton improved, while small veal is still lower and hogs rather weak. The best fresh butter is suffering in competition with storage stock, though medium and lower grades are going well. Cheese is in good demand and select eggs have scored a notable advance, although lower grades are abundant. Large arrivals of Eastern stock have brought down poultry prices. Potatoes and onions have receded again under stock demand, though onions are expecting renewed shipping demand. Citrus fruits, except pomelos, are doing well this week. Deciduous fruits have fluctuated as shown by our Market Review. Dried fruits are firm and holding advances well. Walnut prices are given in another column. Honey is being strongly held in expectation of shortage in other parts of the country. Hops are not behaving well, although growers are doing their best to hold up values. It looks as though the rains at the north might warrant the effort. It is claimed by Oregon growers that thousands of dollars' worth of damage will result if the rainstorm continues. There are, they say, about 5000 bales yet unpicked, and unless the weather conditions improve the pickers will become disgusted and return to their homes, suffering the remaining hops to go unpicked. Wool is dull and doing little.

In spite of all that may be said in the dealer's interest it looks as though wool would be high. We have frequently referred to the decline of the sheep census without visible movement to increase the product. The latest form of these facts is that given by Consul Williams of Cardiff, Wales, who calls attention to the serious decline in the number and concludes that there is an excellent chance for American farmers to profit by the facts. He says: "The world is eating up its sheep. Its flocks have been declining for three decades, and that decline has become perceptible in so many countries that it is regarded as the most remarkable agricultural movement of our times. A number of independent causes have co-operated to bring about this result." He notes the increasing popularity of mutton as a wholesome meat and emphasizes the decline of flocks except in countries where agriculture engrosses the attention of the people. To appreciate this, it is only necessary to study the table compiled from the annual report of the British Board of Agriculture for 1904, which shows an enormous decline in the number of sheep grown in most of the countries of the globe.

The losses in some of these countries have continued for a generation. For instance, the first report for Germany is that of 1873, and its flocks have declined ever since, the total decline to the end of 1904 being over 60%. Austria-Hungary's flocks have declined nearly 45% since 1869, those of France 30% since 1873, and those of the United Kingdom 15% in the same period. The decline in the latter country has been retarded by the heavy annual importations, both of mutton and live sheep. For instance, the importations for 1904 were as follows: Mutton, 3,530,659 hundredweight; sheep, 382,240 head. And yet the decline of sheep in the same year amounted to 432,619 head. The figures indicate that the flocks of the world have decreased at least 93,000,000 head since 1873, an average of more than 3,000,000 head a year. This decline must continue while present conditions prevail.

The effect of these facts on the prices of wool and mutton, and the outlook in these products, can hardly be questioned.

The importance of drainage in a semi-arid State was scouted in early days, but has been progressively realized in later years. The Legislature of two years ago passed a new and very good law on this subject and, although we understand lack of co-operation has restrained from use of the law, it will no doubt be largely employed in the future. An interesting project is reported from Mendocino county, where a drainage enterprise will be at once undertaken to release Little Lake valley from winter water, which now spreads for miles forming a vast lake, and in several instances has come near flooding the town of Willits, which is built on high ground. The land thus covered is the most fertile in the valley, and comprises several hundred acres, but is only used for grazing cattle a few months during the year. The draining of the outlet will prevent this land from being overflowed, and will open up the richest farming land in Mendocino county. The amount of water to be drained can be imagined when it is stated that over 40 inches of rain have been known to fall in the month of February. There are many other drainage enterprises which should be put through both against winter and summer water and alkali water from excessive irrigation.

The staff of workers for wheat improvement in California, an undertaking about which much is said in another column, has just been increased by the arrival of Mr. H. F. Blanchard, an expert from the Agricultural Department at Washington. Mr. Blanchard will work at the experiment stations, and will represent the Government, while Professor Shaw represents the State, in the experiments made. Mr. Blanchard has made this sort of work his especial study. He spent a year in Kansas working on the same sort of problems, and is regarded as peculiarly qualified to assist in the investigation work on wheat in this State.

QUERIES AND REPLIES.

California Forage Plants.

To the Editor:—Can you furnish me the name of some work on grasses of California, especially those varieties that will stand long dry seasons—similar to southern California? Can the seed of the alfilaria grass be secured in California? I am interested in a large cattle ranch in western Texas, and we have long dry seasons, and desire very much to improve the grass for pasturage. Any information you may extend will be greatly appreciated.—Ranger, Texas.

There is no comprehensive work on California grasses except the botanies, and they do not deal with the agricultural value of the plants very satisfactorily, nor do they include all introduced plants. The reports of the Bureau of Plant Industry of the Department of Agriculture mention many of them. We may say that the grasses which are proving most drought resisting in California are the Australian rye grass and orchard grass, although there are many situations in California which are too dry for them. They make good winter growth in such places, but will not survive the first dry season. Alfilaria is not a grass; it is a member of the geranium family, but it is one of our best growing forage plants, does not attempt to grow during the dry season, but makes seed enough in the spring to increase its area with each succeeding wet season. A forage plant which you should also try in the district of which you speak is the burr clover, which is very widely distributed in California, makes a fine winter growth and large amount of seed, which the cattle gather from the surface of the ground all through the dry season. You can get seed of these plants from the San Francisco seedsmen.

Is Saltbush a False Alarm?

To the Editor:—The matter of saltbush growing is of very deep interest to us in Australia, where until now no effort has been made to cultivate the saltbushes. There are millions and millions of acres of saltbush country in New South Wales, which now constitute not much other than a desert, but which proper saltbush cultivation could transform into valuable country. Most of this country has an average of 10 to 12 inches of rain, and outside of it there is still country of a lighter rainfall that could probably be utilized. The practice has been to eat out the country—kill everything in a dry time. No provision has been made for a drought by storing food. In years to come all this will be changed, and a great part of Australia be looked upon in quite a new light.—Australian, New South Wales.

The exaltation of saltbush was apparently rather premature, for although it has a very high nutritive content, as generally shown by analyses, and though it is acceptable to some kinds of live stock, such as sheep, goats and fowls, it has been disappointing in the fact that cattle do not take kindly to it, except as a preventive to starvation, and such a condition is not calculated to promote either flesh forming or milk yielding, which are necessary to make cattle worth keeping. For this reason, although there was some years ago quite a large acreage of saltbush planted in California, there is at the present time very little interest in the plant because so many have been disappointed in its acceptability to the animal. It rather seems as though the Australians in their attitude toward the plant were wiser than the Californians. The plant now occupies no important place in our agriculture. If any reader can give experience warranting a different conclusion we would like to hear it.

Guavas and Laurel Leaves.

To the Editor:—Can the guava be successfully and profitably cultivated in this part of the State, without irrigation, especially in the foothill region of the Santa Clara valley? Also, have the leaves of our native laurel or bay trees commercial value?—Reader, Mountain View.

In all probability the strawberry guava can be successfully grown in your district as this variety is the most hardy of the guavas, and makes rich red jelly, which is very popular. In southern California, near the coast, several varieties of yellow guava are grown, but these are more tender, and not so good in other parts of the State. The leaves of the native laurel have no commercial value.

Forestry Education.

To the Editor:—Having seen in a recent number of your paper, of which my father is a subscriber, an article on forestry, I take the liberty to ask for infor-

mation as to the location and other particulars about schools, to prepare for that profession.—Forester, Vacaville.

There are now forestry schools at Yale College, New Haven, Conn., and Michigan University, Ann Arbor, Mich. Both these are fully equipped with a full course in forestry, terminating with a degree or certificate testifying to qualifications for forest service. Our California institutions are not yet equipped in this line, although it is hoped that they will be before long. A part of the forestry course in any institution can be taken here, as the preliminary studies are much like those for other technical professions, and one can enter the University of California, pursue such studies for a year or two, and then go to an Eastern school of forestry, if our State is not equipped by the time that he is ready to go on with the higher work. There is also an opportunity to enter the forest service as a ranger, or other assistant, and work up that way, although a full university course in forestry is far better. We would advise you to write to the schools of forestry which we have mentioned; also to the Forest Service, care United States Department of Agriculture, Washington, D. C., stating your desire to them and asking for information.

Joint Worms—Beet Contracts.

To the Editor:—While at Le Grand a few days ago a farmer told me of finding in June last a small yellow worm about ¼ of an inch long in the hollow of his wheat stalks, and that, as the season advanced, the worm became brown and a little longer, and just before the wheat ripened these worms cut into and through the joints of the stalks, where the hollow sections seem to join. These worms, he thinks, ruined his crop, although he acknowledged that his wheat was badly rusted. What were those worms and how did they get inside of the wheat stalks? Can rust be prevented? Would you advise Fresno county farmers to plant sugar beets for the use of a corporation?—W. R. McIntosh, Valley Farmer, Fresno.

The Le Grand wheat grower probably told you about the joint worm, which is the larva of a minute fly, and it is its habit to burrow into the joint of the wheat stem, as its name indicates. It is an old enemy of the wheat plant and is frequently reported from the lower part of the San Joaquin valley, but is, fortunately, never very destructive to grain, because it is held in check by the current practice of burning the straw and stubble. It is, of course, possible that the insect may have been partly responsible for the loss of his crop, but rather more probable that he, like others, lost the crop through the rust and other manifestations of an unfavorable season.

Theoretically, it would be possible to prevent the rust of wheat by spraying with Bordeaux mixture or other fungicide, which would kill the spore as it came into contact with the plant which is thus protected; but practically it is not possible to do this, because the cost of prevention would be many times the value of the crop. The interior valleys have in ordinary seasons a natural protection against rust, because their normal atmospheric conditions are unfavorable to its spread, and perhaps not again in a lifetime will there be such a scourge of rust in the San Joaquin valley as there was this year.

We would certainly advise Fresno farmers to plant sugar beets for the corporation, providing the price is remunerative, and that they can only demonstrate by experience. They must have a contract in order to make it desirable to undertake the crop at all, and no one can make a contract on the buyers' side, except a corporation, because it requires so much capital to provide equipment for beet sugar manufacture. At the same time it must be said that in some parts of the State, after growing beets at prices which sugar makers are willing to pay for a number of years, the land owner found that he could use his land with better profit for other crops. Whether this will be true in Fresno, nothing but experience can demonstrate.

Cotton in the San Joaquin.

To the Editor:—I would like to be referred to a financial organization that will be interested in introducing Egyptian cotton to California and growing it on a commercial scale. I am a native of Egypt and have been in the United States for about four years. I graduated last June from the College of Agriculture of the State University of Missouri, and I have been a student in the Khedivial Agricultural College at Quizet, Egypt. During a trip through this State my attention was constantly attracted by the similarity existing between your soils, climate and flora and ours. I have always read the reports published by the Department of Agriculture on experiments relating to Egyptian cotton, and in my judgment there is no doubt of success if an attempt is made. A vast area of the uncultivated land of this State could be turned into the richest cotton fields in the world and populated by an intelligent and skillful race that has descended from ancient Egyptians.—George J. Salem, Stockton.

It has been amply demonstrated by the experience of the last thirty years that cotton will grow very successfully on suitable lands in the interior valleys of California, but no cotton investment has ever been profitable because of the impossibility to secure pickers at wages which would make the crop profitable. At one time there was quite a large introduction of negroes from the Southern States to pick cotton in Kern county, but the negroes soon found that they could get very desirable employment at much better wages and the undertaking was abandoned. Cotton seed has been distributed in considerable quantities from year to year and very good cotton has been produced for exhibition, but no one has yet been able to master the problem of harvesting at the price which would enable California to compete with the product of the Southern States. The probability is that if you were able to colonize Egyptians in California they would also find more profitable employment in connection with the fruit and other industries which can offer to pay higher wages. Until this difficulty of cost of production is overcome no cotton enterprise can be safely undertaken.

Alfalfa and Morning Glory.

To the Editor:—Will you kindly inform me if alfalfa would do well on land which is, to some extent, covered with morning glory, but, in other respects, well adapted to its production. Could you also inform me how many inches of water would be considered sufficient for irrigating alfalfa after the first crop has been harvested in the spring?—Enquirer, San Francisco.

It is something of a question as to whether alfalfa will keep down morning glory. It depends much upon the suitability of the land for alfalfa, the thickness of the stand which is secured and maintained afterwards by the right sort of treatment, including irrigation, calculated to maintain a most thrifty growth. Whenever the alfalfa stand becomes scanty the morning glory will reassert itself, and yet we can mention no crop which is so well calculated to keep down morning glory as a good growth of alfalfa. At the same time neglected alfalfa, or alfalfa on heavy, shallow soil and prone to die out in spots, will probably be overcome in the end by the morning glory, which is a plant better calculated to endure adversity. The amount of water required for the growth of alfalfa depends to some extent upon the character of the soil and the amount actually applied would range probably from 3 to 6 inches or more in depth for each cutting of the alfalfa. There is no literature in book form covering these subjects, but there is continual discussion of them in our columns, and in that way much interesting experience is brought to light.

Katydid Eggs.

To the Editor:—I enclose a portion of an almond hull on which were two rows of the creature like the three on this specimen. These were all pulled off except these three. They were very regularly placed like shingles. This one specimen came from an almond orchard in Orangevale. Is it anything that is worth attention?—Reader, Fair Oaks.

The bodies which you find on the edge of an almond hull are the eggs of the katydid, which is, as you know, a kind of a glorified grasshopper, which would be injurious as grasshoppers are, except that it is so conspicuous that it is held in check by its enemies and is never abundant. It is, however, quite common to find these eggs on the trees of small twigs of fruit trees, but we never before saw them deposited on the edge of an almond hull. No interest pertains to it except as one must feel an interest in all the wonderful things in nature.

Grain for Hog Fattening.

To the Editor:—Having located here in June, I am preparing land for the growing of alfalfa and would like to go somewhat into the raising of hogs for market, but am at a loss to know what is best to grow for fattening purposes. I am informed that alfalfa is splendid for growing food but will not fatten properly.—Beginner, Stanislaus county.

Probably the best grains which you can grow for fattening hogs are barley and Egyptian corn, or Kafir corn, both of which are varieties of sorghum, making a large, starchy grain. There are only a few places in California where Indian corn grows well; consequently the other grains which we have mentioned are used as a substitute, and, in connection with alfalfa, make a splendid ration for hog feeding.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending September 25, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Clear and warm weather prevailed most of the week, with high temperature Thursday and Friday and much cooler weather at the close. Conditions were favorable for maturing grapes, fruit drying and shipping fresh fruits and grapes. The picking of Tokay grapes is nearly completed in the Florin district and now progressing rapidly in the American river district. If not damaged by early rains, the grape crop will be larger than that of last season. Heavy shipments of grapes and fresh and dried fruits continue. The wineries are in full operation and raisin making is in progress. Citrus fruits are well advanced and in excellent condition, with indications of a heavy yield. Hop picking is practically completed and baling continues. Beans and corn are doing well. Dry seeding is progressing.

Coast and Bay Sections.

Clear and warm weather continued most of the week, with light showers in portions of the coast districts at the close. High temperatures prevailed in the interior on the 21st and 22d, causing slight damage to corn and garden truck. Grape picking is progressing rapidly in the central and southern districts, where the crop is reported large and of excellent quality. In the northern districts grape harvest has commenced and the crop is said to be below average. Prune drying is nearly completed. The apple crop is large and of superior quality in Santa Clara, Santa Cruz and Humboldt counties. Pears are of excellent quality, but the yield is below average. Walnuts at Peachland were injured by heat in July and August and the crop will be light. Cloverdale oranges are in good condition. Hop picking is nearly completed in Sonoma county and the crop is nearly average in yield and quality. Bean harvest is progressing. The hay crop is nearly all baled and stored. Grain thrashing is still in progress near Hollister and the wheat crop is larger than expected.

San Joaquin Valley.

The weather continued clear and warm most of the week, but partly cloudy and cooler near the close. Conditions were favorable for raisin making and fruit drying. The bulk of the raisin crop is in stack and nearly ready for the sweat boxes; some of the early crop is being delivered to packing houses. There is a fair crop of raisin grapes, and wine and table grapes are about average; all are of good quality. Wineries are in full operation. Heavy shipments of green and dried fruits continue. Almond harvest is nearly completed; the yield and quality are good. The prune crop is light, but the fruit is of excellent quality; drying is progressing rapidly. Olives are in good condition and a large crop is probable. Oranges are doing well. The fifth crop of alfalfa is being cut in some places. Dry feed is plentiful and stock are in good condition.

Southern California.

Generally clear and warm weather continued until near the close of the week, when thunderstorms, accompanied by rain, occurred in San Diego, Riverside, San Bernardino and the foothills and mountains of those districts. The raisin crop in San Diego county was not seriously injured by the rain, but grapes and raisins in San Bernardino county suffered to some extent. Grape picking, raisin making and wine making are in progress. Apples from the foothill districts are of excellent quality and the yield is good. Oranges are in first class condition and the prospect is good for a heavy crop. Large shipments of lemons are being made from San Diego. Walnuts are doing well and are nearly ready for harvest; the nuts are well filled, but the crop will probably be light. Harvest continues on beans and sugar beets.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Sept. 27, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.25	.27	2 11	1 23	68	48
Red Bluff	.00	.00	4.97	.79	100	54
Sacramento	.00	T	3.69	.41	98	50
San Francisco	.00	T	5.15	.43	86	52
Fresno	T	T	1.78	.27	102	56
Independence	T	T	.39	.29	90	50
San Luis Obispo	.00	.03	3 60	53	94	46
Los Angeles	.00	T	.45	.19	90	56
San Diego	.34	.50	T	.14	80	58
Yuma	.24	.26	.81	.66	100	66

CEREAL CROPS.

The Improvement of Wheat.

We had an interesting article last week on the efforts now in progress toward the improvement of California wheats. All careful observations are important and interesting to wheat growers just at this time. We note with pleasure that Mr. H. G. Smith of the Pioneer mills of Sacramento has given the Union the results of his long experience and observation and we haste to place these before our readers.

The Situation. — Mr. Smith declares that the wheat growers of California are confronted with a situation more serious and more threatening than is readily comprehended by a great majority of them. A few farmers have made themselves acquainted with the details of the disastrous season just closing, but a vast number are going ahead blindly and neglectfully in the same old way, knowing, of course, that they have had a "streak of bad luck," but taking it for granted that they were the exception to the rule, and not appreciating that the catastrophe of failure has spread its shadow over the entire wheat growing area of California.

Hard Grain Desired.—Mr. Smith declares that conditions are about as bad as they can be, and he can see no way of improvement except by awaking the farmers to the dangers ahead. He adds that there is available a possible source of immediate relief, and that is to induce wheat growers to sow the Turkey red wheat or some other hard grain that is rich in gluten for the next harvest.

"There is yet time for farmers to obtain all the Turkey red wheat they need for seed," said Mr. Smith, "and I only wish that I were able to convince wheat growers of the importance of taking action at once. They must do it, and do it quickly, or another season's work and expense will be lost beyond hope of redemption.

"While I am on the subject of Turkey red, I will say that our company stands ready to supply seed to any wheat grower in the State at absolute cost, or they can send to western Kansas and get all they need on their own account. All we ask is that they sow Turkey red, not only for their benefit and the benefit of the State, but also for the benefit of the millers. What helps one helps all. Millers naturally would prefer to buy their grain at home, but if it cannot be had here we must send abroad.

Importing Wheat.—"Just consider what is taking place right now. We are importing from Kansas and Washington 5000 tons of wheat a month, because California wheat is not ample for our demand. Other milling companies are doing the same. They have to do it in order to carry on business. From Kansas we are getting the Turkey red that is rich in gluten, and from Washington we have the bluestem wheat, which is a large, white starchy wheat somewhat similar to California wheat before it pinched out and shriveled to almost nothing. Now is the time for the wheat growers of California to wake up, and if the Union can arouse them and in any way induce them to plant Turkey red this season it will be conferring on them and on the State a substantial benefit that scarcely can be calculated in dollars and cents, and the paper will earn and receive the blessings of those who profit by the advice.

"I speak earnestly in this matter, because I understand the gravity of the problem. It is not merely a question of a difference in profit, more or less; it is a matter of life and death; a decision whether the wheat grower shall get something or nothing for his year's labor and the money that he puts into his crop. Another thing that I want to say is that I mention Turkey red wheat as the proper seed to be used this season because there is an amply supply that is available at a moment's notice. Furthermore, I don't believe Californians will ever get a better all-round wheat than the Turkey red, and therefore it is a wise selection on general principles."

Mr. Smith was asked to what he attributed the present unfortunate condition of the wheat-growing industry of California.

Causes of the Trouble.—"First of all, the farmers have worn the land out cropping it year after year and have never given it a rest. It is like drawing on a bank all the time and never putting anything back. It would be bound to get exhausted.

"Then the choice of seed by Californians was the worst in the world. Club wheat, club wheat, club wheat—that was all the California farmers could think of, and in my opinion club wheat never was worth anything anywhere, and least of all when grown in California. For forty years they have been cropping the same ground, and year after year sowing the same seed, over and over again, until at last it has just pinched out, and that is all there is to the story. Even Turkey red or Kubanka or any of the gluten wheats will deteriorate in California, owing to our climatic conditions, unless new seed is imported right along. We must send to cold States for seed if we expect to get anything from our wheat fields, and the sooner the farmers take this lesson to heart the better it will be for them. But they must also remember that the best seed in the world won't bring back the land to its original condition. They must resort to rotation of crops and let the land rest, or they might as well quit plowing and dismantle their big harvesters and reapers."

Mr. Smith said that the combined harvesters are much to blame for the sterility of California wheat in regard to the qualities needed in making flour. He holds that the grain is allowed to stand too long, as it is necessary to be quite dry before a combined harvester can be used to advantage. To the uninitiated it may be explained that a combined harvester "heads" or cuts the wheat, threshes or separates the grain from the straw and chaff, and that the grain is actually sacked on the machine as it moves along over the field, the sacks being dropped along the pathway traversed by the harvester.

Historical. — "California used to raise good wheat," said Mr. Smith, "and can do so again whenever there is a return to reasonable methods. I began in the milling business here in 1855 and have been at it ever since. Naturally, I have had a chance to notice the changes that have taken place. In the old days of reapers, when the grain was cut and stacked, the berry of the grain absorbed something from the straw that it needed and was worth milling, even though the variety was not the best. Then came the headers and things got worse. At last the farmers brought in the combined harvesters, and that settled the wheat question in California against the growers. The quality of the wheat has been retrograding steadily ever since. Those big combined harvesters are picturesque as they plunge through a field of grain, and it looks fine to see the owner of a big ranch driving along in a carriage watching the work of ruin to his crop and his land, but in the end the result is disastrous. The causes are not hard to find.

"Not only is the wheat made worthless by the method of leaving it standing under the burning sun until it is dry enough to handle with the combined harvester, but the land is so befouled by the scattering of the seeds of cheat and other weeds that the succeeding crop of wheat is choked by the quick-growing weeds and starved to death at the very start. By the use of combined harvesters the land is bound to get worse and worse every year. The only wonder is that the wheat farmers have been able to keep up as long as they have, considering how they have given themselves the worst of it all these years."

Turkey Red.—Mr. Smith showed a sample of Turkey red wheat grown in Yolo county, near Woodland, last season, which yielded eighteen bushels to the acre, and which brought the farmer $1.40 per hundred-weight, while his neighbors who stuck to the old seed got about nine bushels to the acre, for which they received something like 80 cents per 100 pounds. It is customary to sow from 80 to 100 pounds of seed wheat to the acre. The best Turkey red from Kansas at present costs $1.80 per 100 pounds, and California-grown wheat fit for seed costs $1.40 per 100 pounds. Mr. Smith points out that the increased expense of sowing Kansas wheat, rich in gluten, is about 40 or 50 cents an acre, and the increased profit, which he considers certain, would so overbalance the outlay that he declares that he cannot understand why wheat growers persist in following the beaten path of failure when there is open to them all a sure road to success by the exercise of ordinary prudence and business foresight in procuring gluten wheat for seed.

Summary.—Briefly stated, Mr. Smith advocates the procuring of fresh seed every year, the choice to be of some hard grain, rich in gluten, from a cold climate; the cutting of the wheat before it is dead ripe, and the stacking of in the straw for a time before threshing; the abandonment of the combined harvester, and, finally, the adoption of a systematic rotation of crops, or, better still, a method by which the land may be allowed to rest every once in awhile, so that its life-giving properties may be regained in the usual course of nature.

Rust-Resistant Wheats.

We have had so much wheat rust in California that the following account of rust resistance, taken from the writings of Prof. H. L. Bolley of North Dakota for the Orange Judd Farmer, may be interesting to many readers:

Resistance.—Breeding work in the past has not given much hopes of counterbalancing rust destruction; but the weight of results gained in the determined search made by some of our most advanced agriculturists for high yielding and high milling types of wheat have tended to indicate that some of the increase has come because of disease resistant features. What these resistant features, if they have existed at all, have been due to, has been wholly a matter of conjecture, and no definite way has yet been devised of arriving at a resistant type which would be open to easy trial by the ordinary farmer. However, late experiments conducted by the biological department of the North Dakota Experiment Station, devised along the line of always promoting the greatest possible development of a particular disease, have given wonderful results in the case of the flax wilt disease and rust on flax. We call the process promotion of disease to eliminate the weak. The same methods have been pursued in the case of wheat smut and wheat rust, and some astonishing results are apparent. I believe that we are at last on the right track to procure either immunized or highly resistant wheats. The work has gone far enough to make it very clear why it is that the experimenting agriculturist has gained such results by his ordinary practical methods of seed grading through such methods as fanning, grading by salt solutions, etc.

What Growers Can Do.—Our special experiments teach much that is of great worth to wheat growers: (1) That the survival of the fittest principle should be placed into active operation on the farm. (2) That the methods of grading and selecting farm seed, heretofore recommended and in use by most able farmers, are along correct line, and should be followed rigidly; because these grading processes not only tend to save the naturally big yielders, but to discard the weak and nondisease resisting strains of grain. (3) They teach that, when a farmer removes a light weight, shriveled grain either by fanning or screening, he removes from the seed a grain which came from a weak, sickly plant, or from one which could not produce a good plump grain under the conditions in which his crop grew. (4) That the farmer ought not continuously to change his type of seed grain, but should breed up a strong grain to fit his own local conditions. To do this he should grade out all the light weight, imperfectly shaped grains, and save the plump, perfect ones. These last grew on plants which could resist trouble, plants which were strong and resistant of disease and hard conditions of soil and weather.

All this applies quite directly to the question of using seed from a rusty crop. Because of the reasons just given, I recommend that the farmers in the rust infected districts procure seed from their own crops, if it is possible to screen out enough heavy grains for that purpose. Remember that a rust year is a good one to sort out a vigorous strain of seed wheat; for the rust shrivels the grain of all of the plants which cannot resist rust and the hard weather and soil conditions. Clean out this light, shriveled stuff, and leave the strong rust-resistant. Do this every year, saving the best.

As to the outlook for rust any given year, one can only say that no one can predict how destructive rust may be in a particular region, until ten to twelve days previous to the real destruction. The conditions govern. Farmers must learn to counteract a part of such conditions by the ordinary means open to culture methods, and to do the rest by seed selection or breeding. It seems probable that our experiment stations will also very soon be able to assist in this matter more definitely than ever before.

ARBORICULTURE.

The Eucalypts in California.

As the planting season is near, and as there are so many new home makers in California, we are giving much space to the discussion of shade and woodlot trees so that the beginners may proceed intelligently. The eucalypts can hardly be too frequently brought to notice. Mr. Ernest Braunton of Los Angeles, whose advice on street trees we recently published, now takes up the eucalypts in a very appreciative way in the California Cultivator and his words cannot be too widely circulated.

Appreciation.—We love to sing the praises of the great eucalypt family, for they serve us in a great variety of ways, overshadowing in importance the next three or four families in order of importance. To the people of tropic, semitropic, arid or semi-arid districts they are what the bamboo is to the Japanese, except they furnish few food products. Extensively as they have been planted, they are not yet sufficiently appreciated, for in their native land the timber and other products of the eucalypt are put to a most surprising variety of uses. To the people of California they are most generally known as a quick growing, drought resistant tree only, but this is only one of the important points in considering the tree, or family of trees, which has, in many districts, practically made life bearable on our treeless plains.

Eucalypts for Timber.—With our rapidly increasing population, and as rapidly diminishing timber supply—a supply wholly insufficient from the first—we will ere many years be forced to plant timber trees, because of the almost prohibitory price of timber for general uses. In various parts of California the following list of valuable timber species may be grown—not all are adapted to all sections: Botryoides, citriodora, corynocalyx, crebra, diversicolor, globulus, hemiphloia, leucoxylon, rostrata, rudis.

For Dry, Hot Sections.—Under semi-arid conditions we may grow four species very well: Polyanthema, rostrata, rudis, terticornis. Of these polyanthemos is the best, except that its growth is slow, although very hardy and therefore safe to plant generally. E. rudis is nearly as hardy and drought re-

sistant, a faster grower, a finer looking tree and far better adapted to general use. It makes a good street or shade tree. The other two mentioned are very close in appearance and much alike in every way, terticornis being the fastest in growth Neither of them are as hardy, however, as the first two mentioned, but will do well in all parts of the south end of the State.

For Wet Soils.—Where water stands near the surface part of the year, no doubt botryoides and rostrata will do best; citriodora and globulus are not impatient of wet feet, and crebra will stand some. Even that wonderful tree for arid sections, E. rudis, will thrive in quite moist soil—a jewel of adaptability.

Hardiness. — For cold situations, E. terticornis and leucoxylon are the best, perhaps the first is the hardier; it has been known to withstand 15° even when small. The following will probably stand more frost than the common blue gum: Corynocalyx, hemiphloia, melliodora, rostrata and rudis. Then comes a considerable number, such as crebra, diversicolor, globulus and viminalis. Most of these latter the writer has known to withstand 20°, and certainly all will safely pass through 24°, even if occurring continuously for some time.

Windbreaks.—Aside from their uses as timber (firewood, fence posts, etc.), eucalypts are more generally planted for windbreaks and for such purpose surpass all other trees. Any of the species suited to your particular section may be used for this purpose, but on account of their rapid and satisfactory growth when thickly planted the common blue gum forms most of our windbreaks.

Ornament and Shade.—For narrow country roads, or city streets, the writer believes the scarlet-flowering species (E. ficifolia) to be the best. This tree does not, however, thrive in case stunted, pot-bound plants are used. Such trees never regain their natural vigor. When well started this species makes a good-sized tree of splendid shape, and when in bloom easily surpasses all others for ornamental purposes. Experience with street and ornamental trees is forcing the recognition of this beautiful eucalypt.

For country roads, in general, we have a fine pink-flowering, silver-leaved variety of E. sideroxylon. This tree should occasionally be headed to make it umbrageous and also to keep the flowers where they may be seen.

E. leucoxylon makes an impressive tree for highway alignment; in age it is quite stately, quite striking in general appearance. Its tall, smooth-barked white trunk makes one think of a polished marble column. This tree may be headed and made more widespread, if so desired.

E. polyanthema is a round-leaved species, the most handsome foliage of all, silver gray in color. Where well started, with occasional summer waterings for the first year, this tree has given excellent satisfaction.

E. calophylla is a tree quite similar in appearance to the E. robusta, so extensively planted along streets in the past; but here the similarity ends, for calophylla is superior in all other respects. Some claim that robusta may be kept shapely if properly pruned, but it requires more pruning than any other species—its wood is the most brittle—it certainly is not the most ornate. Do not plant E. robusta.

In some locations, notably at Redlands, the narrow-leaved form of E. amygdalina gives splendid satisfaction, and for country roadsides would suit wherever the climate will allow of its growth.

Oils, Perfumes, Etc.—Many tons of eucalyptus oil are each year extracted from the common blue gum in southern California, and all druggists report an ever-increasing sale of the oil and its by-products. We have several firms who manufacture upwards of ten tons of oil per year. Owing to the fact that the blue gum is the one most extensively planted, that species is the only one used in such factories, though it is said others contain more oil, particularly E. amygdalina. On the other hand, the red gum will not yield one-fourth the amount of oil obtained from the common blue. Other than oils, there is manufactured eucalyptol, salve, soap, cough drops, perfumery, etc. For perfumery the best species seems to be E. staigeriana, the lemon-scented iron bark. Its foliage and twigs have a very heavy lemon smell. This tree is scarcely known in California at present. One hundred pounds of the dry foliage has yielded by distillation sixty-four ounces of lemon-scented oil.

Other Uses.—No mention has been made of the importance of eucalypts as honey plants, yet nearly all species are valuable for their honey yield. One species (E. terminalis) known as the manna gum, yields a sweet gum much relished by the natives as an article of food. Several species yield heavily of tannic acid, yielding above 65%. One quite extensively planted in California (E. terticornis) yields 62% of tannic acid and 28 ounces of oil from 100 pounds of dry leaves. E. naemastoma, which yields 66% of tannin, gives 33½ ounces of oil from 100 pounds of green leaves. E. siderophloia, well known here, yields 28% of tannin and 42% of arabin, by which it will be seen that they yield numerous products of commercial value. In Australia the leaves and small branches of E. microtheca are placed in water to poison fish, and the inner bark of the same species is used as a poultice for snake bites.

THE POULTRY YARD.

Poultry Possibilities.

We have previously had notice of the poultry work at the Maine Agricultural Experiment Station and the results gained in increasing the egg record by the process of selection toward the egg-laying habit, etc. The following from a recent bulletin of the Maine Station, prepared by Professor G. M. Gowell, the poultry expert, is very interesting as showing what hens can be made to do:

Last Year's Work.—The breeding season of 1904 opened with 170 yearling hens in our houses that had laid above 160 eggs each the year before; 80 pullets and hens whose mothers had laid over 200 eggs a year, and 28 hens that had themselves laid over 200 eggs a year. These birds were in 24 different pens and they were bred to selected cockerels whose mothers had yielded above 200 large brown eggs a year.

Among the pullets tested during the preceding year (1903) were found the following: No. 263a yielded 220 eggs; No. 225a, 220 eggs; No. 222a, 221 eggs; No. 224a, 222 eggs; No. 205a, 225 eggs. These birds were bred during 1904 to cockerels raised in 1903 from heavy producing mothers whose other sons were never used in our breeding operations. The mating of these five pairs of birds was to secure cockerels for our next year breeding operations.

At the usual time for the beginning of the yearly test of 1904, viz., October 30, we had 300 good pullets that were laying well out on the range. The construction of the building being erected for their quarters was interfered with by a question of labor over which we had no control, and they remained out in their small summer homes during a wet, cold fall and early winter until December 6, when they were moved in. This more than a month's delay and exposure cut into the year's work heavily, and the average production of the 300 birds was reduced to 131 eggs each during a little less than eleven months. Eight birds yielded above 200 eggs each before the close of the following October.

All of the breeding females we are now carrying are tested hens that have laid from 160 to 251 eggs in a year; and 150 pullets and hens whose mothers produced 200 or more eggs a year. All males used in breeding these two classes since 1901 had mothers that had laid 200 or more eggs in a year.

This Year's Work.—This season (1905) 600 pullets out of hens that have laid above 160 eggs a year, and whose fathers, grandfathers and great grandfathers were out of hens that yielded above 200 eggs a year, are being tested by the trap nests for additional breeding stock. All of the mothers of these pullets had fathers and grandfathers that had 200 egg-producing mothers.

The stock is strong and vigorous, and only few chickens that hatch are lost. The hardihood of the stock is shown by the fact that many cockerels have been sold to farmers and poultrymen in and out of the State during the last two years, and this fall many of them have ordered again, with the frequent comment that their pullets are laying earlier in the season and giving better eggs than they have ever done before.

Outline of the Work.—The numbers of the breeding stock now secured make practicable the avoidance of inbreeding, and this is strictly guarded against, as it is doubtful if the inbred hen has sufficient constitution to enable her to withstand the demands of heavy egg yielding. During only one season have birds as closely related as first cousins been bred together. Line breeding is followed, the matings now being only with distantly related birds. These breeding investigations have now been in progress for six years. The first year was consumed in testing pullets to find foundation stock The second year cockerels were raised from the large laying hens for future breeding, and the third year the first lot of pullets were raised from the selected stock, so that we have only the last three years in which to note results, and these three years can only show the first changes that have taken place. The stock that we commenced with was well bred, as flocks generally go. The hens were averaging about 120 good brown eggs a year, and had been doing so for several years. Three years ago they averaged 150 eggs, and the last two years, with the great setbacks caused as above indicated, which was no fault of the stock, the average was 131½ eggs. It must be borne in mind that 1902 was the first year we had pullets from the 200-egg stock to collect from. In the records only the eggs laid in the nests are accounted for. Had those found on the floor been reckoned in, the average per bird would have been slightly increased.

As the housing, treatment and food have been as nearly alike as we could make them during the last five years, there seems to be reason for assuming that the flock yields of 1902, 1903 and 1904 over those of previous years are the results of the breeding practiced.

Sufficient time has not elapsed since beginning these breeding tests to establish claims of increased productiveness, but the outlook is certainly very encouraging.

The Plan.—The plans on which we are working are based on everyday common sense. We are rejecting the drones and breeding producers together to secure producers. It is known that the laws of inheritance and transmission are as true with birds as with cattle, sheep and horses, and when we consider the wonderful changes that have been made in form, feather and egg production of hens since their domestication commenced, there is ample reason for assuming that a higher average egg production than the present can be secured by breeding only from those birds that are themselves great producers.

The purpose of this work should not be misunderstood. We are not trying to breed stock that shall average a yield of 200 eggs a year. If the average yield of the hens of the breed should be increased to the extent of a dozen eggs a bird, the value of the work would be many times its cost.

Preserving Eggs.

Dr. B. Bement, who has made many experiments with water glass for preserving eggs, tells the New England Poultry Journal that he has preserved eggs successfully for thirteen months with a 10% solution of water glass. He says:

"Now here is an application of attention to details that should not be lost. In making the solution it is imperative that the water used be first boiled and then allowed to cool. It may seem a matter of little importance, but unless this is done the organic matter in the water will decompose and spoil the eggs. Inattention to this detail was the direct cause of the majority of bad results.

"Testing eggs of different ages, I used a 10% solution and found that eggs not more than a week old kept well, while older ones varied in quality, though very few proved worthless as old as three weeks after kept in the solution five months.

"I make a solution of one part (by measure) silicate of soda, nine parts boiled water. I place this in a stone vessel, and after August 1, all of the eggs not required for the house go into this solution each day as they are laid. In case there is not solution enough at any time to cover the eggs more may be added. The eggs will stay down without the use of an inverted plate, but it is important that at all times there should be solution enough to cover the eggs completely. I cover the jars to prevent things getting in that I do not care to preserve. I keep the crocks on the cellar bottom, and my cellar is not rat proof. The method is simple, clean and successful.

"The important points to be observed are: Boil the water and allow it to cool before mixing with the silicate. Have solution enough to cover the eggs at all times. Keep in a cool place.

"After a time the solution will curdle, but that is only a chemical change that takes place through the contact of the organic matter in the shell with the soda. Eggs may be removed at any time without injury to those remaining."

THE FIELD.

The Hop Growers' Organization.

Articles of incorporation of the California Hop Growers' Association, which includes in its membership many of the producers in this part of the State, were filed last week in Sacramento, according to an account in the Union. As expressed in the articles, the purpose of the corporation is the selling of hops owned by the members who are producers. There is no capital stock, and the principal place of business is in that city.

The directors, who were elected at a largely attended meeting, are as follows: Robert Merkley, Riverside Road district; Ed Palm, Yolo County district; W. W. White, American River district; P. M. Rooney, Cosumnes River district; Charles Colquhoun, American River district. Daniel Flint, the pioneer hop grower of the Pacific coast, presided over the meeting and A. A. Merkley acted as secretary. A meeting of the directors will be held speedily and measures taken to promote the signing of agreements by members.

A more detailed statement of the association's purpose was set forth in the following interview with F. V. Flint:

"This is not a trust, nor is it a pool," said Mr. Flint. "It is simply an aggregation of a number of growers who, by selling as a unit and directly, expect to take advantage of market conditions. The grower who is a member sells at the price satisfactory to him. He retains possession of his hops in his own warehouse, and is not bound by any agreement to sell at an arbitrary figure.

"Agents of the association are sent into the Eastern markets and the information secured by them is at the disposal of each member. Each member may use this in arriving at his determination as to when he shall sell and at what figure.

"The association will endeavor to place the crop

of each member to the best advantage, and will make an effort to secure for him regular customers. In return it is expected merely that he shall support the association and pay his pro rata of the expenses.

"While we expect, through these methods, to get a better price than is generally quoted, we are opposing no individual or combination. There is no element of speculation and the association buys no part of any crop. It is, as may be readily seen, a simple plan to get better prices for the members."

Fertilizing the Wheat Crop.

One of the farms belonging to the Ohio Experiment Station had been rented for many years before it came into possession of the station and was reduced to a very low state of productiveness. On this farm a five-year rotation of corn, oats, wheat, clover and timothy has been maintained since 1894, the rotation being so planned that each crop is represented every season.

Part of the land in this experiment has had no fertilizer or manure of any description since the test began; another part has had acid phosphate only, used at the rate of eighty pounds per acre each on corn and oats and 160 pounds on wheat, making a total of 320 pounds for each five-year period. Another part has received the same quantities of acid phosphate, with 260 pounds of muriate of potash in addition—80 pounds each on corn and oats and 100 pounds on wheat. Still another part has received the same quantities of acid phosphate and muriate of potash, with 400 pounds nitrate of soda—160 pounds each on corn, oats and wheat. The total cost per acre for these different combinations of fertilizing materials for each five-year period has been as follows:

For acid phosphate alone	$ 2 40
For acid phosphate and muriate of potash	8 90
For acid phosphate, muriate of potash and nitrate of soda	20 90

The average yield of wheat on the unfertilized land for the twelve years, 1894 to 1905, inclusive, has been 8.6 bushels per acre. This yield has been increased by the different fertilizing mixtures to the following twelve-year averages:

	Bushels
By acid phosphate alone	15.9
By acid phosphate and muriate of potash	17.5
By acid phosphate, muriate of potash and nitrate of soda	24.3

If we value wheat at $1 per bushel, corn at 50 cents, oats at 33⅓ cents, hay at $8 per ton, corn stover (fodder) at $3 and straw at $2, the total increase from all the crops from each rotation in this experiment would have the following total and net values, the net value being obtained by deducting the cost of the fertilizer:

	Total.	Net.
From acid phosphate alone	$16 72	$14 32
From acid phosphate and muriate of potash	24 08	15 18
From acid phosphate, muriate of potash and nitrate of soda	40 72	19 82

It is apparent that on this worn soil the complete fertilizer, containing nitrogen and potassium, as well as phosphorus, has produced by far the most profitable increase of crop, although the cost of this fertilizer has been more than eight times as great as that of acid phosphate alone.

In another experiment on this same farm corn, wheat and clover have been grown in a three-year rotation since 1897. Part of the land in this test has received no manure or fertilizer, while a part has been manured for the corn crop with cattle manure, used in all cases at the rate of eight tons per acre and plowed under, the corn being followed by wheat and clover without further manuring or fertilizing.

Part of this manure has been taken from an open barnyard, where it has lain during the winter; part has been allowed to accumulate under the feet of the cattle in their stalls until it could be hauled directly to the field, and with a third part—also stall manure—acid phosphate has been incorporated during accumulation, the phosphate being used at the rate of forty pounds per ton of manure, or 320 pounds per acre.

In this test the unmanured land has produced an average yield of 8.9 bushels of wheat per acre; the yard manure has increased the average yield to 16.3 bushels, the untreated stall manure to 17.9 bushels, and the phosphated stall manure to 24.2 bushels.

Taking all the crops of the rotation, and estimating the value as before, the total value of the increase from each method of treatment has been as below:

From 8 tons yard manure, untreated	$20 35
From 8 tons stall manure, untreated	27 58
From 8 tons stall manure, phosphated	44 35

The nitrate of soda and muriate of potash used in the first experiment have cost $18 50 per acre for each rotation, and have been paid for with a large profit besides, in the increase of crop; but the 8 tons of stable manure, used in connection with the same quantity of acid phosphate, has produced a much greater increase of crop than the expensive chemicals.

These experiments demonstrate the vast importance of furnishing the wheat crop with an abundant supply of nitrogen and potash, as well as of phosphorus, when it is grown on worn land, and show that in farm manure we have a most effective source of nitrogen and potash, the value of which may be more than doubled by protection from the weather and re-enforcement with phosphorus.

A Good Hop and How to Get It.

George D. Sanborn of Santa Rosa has issued a circular to hop growers giving some important information on "What Constitutes a Choice Brewers' Hop," and some hints on the curing and handling of the hop crop. He says:

The actual value of the hop to the brewer depends largely upon its having a correct flavor—that sweet, natural smell that is found only in the well ripened and properly cured hop. There is a science in the processing and drying of the hop. Slack drying is a defect very commonly met with, as the grower is tempted to go to the limit on this point in order to obtain more weight. The slack dried hop is easily detected, both by the sense of touch and also by the slack, dry, musty odor, which impairs the flavor and may even go so far as to render the hop worthless. The moderately slack dried hop can be used by the home brewer, but it is totally unfit for export, as it is sure to gather more moisture during a sea voyage and may arrive at its destination in a dangerously damp condition.

Another important point in the drying process of the hop, and one which, if overlooked by the man at the fires, is sure to produce a faulty hop, is the matter of high heat. The temperature should not, at any time, be greater than 160° F. A slight degree of overheat is always suspected in a badly broken hop with a brittle core, and a greater degree of heat produces what is known as a scorched hop, which is easily recognized in the odor, and also changes the color—a bright golden color—to that of a dull brown. We have also seen nearly the same result occur from allowing hops to heat badly in the sacks when coming from the fields and before being spread upon the floor, producing a faulty flavor similar to that of the scorch.

The ripe, golden color so desirable in the hop cannot be obtained from a green, unripe hop. The bleaching process, to be sure, helps the color of a green hop to some extent by paling it, but it still remains a green hop, deficient both in flavor and quality. Nature only can give them their ripe, golden color, and the grower can assist her most by allowing the hops to remain upon the vines until thoroughly ripened.

Hops may be strictly first class in every other respect, and if badly picked—that is, if they contain any considerable amount of stem or large leaves—cannot pass upon the market for a first class article. This is one of the hardest problems the hop grower has to contend with, as he is almost compelled to hire all classes of labor in order to save his crop within the short time in which he has to accomplish the work.

Hops are usually spread upon the dry floor from 10 to 18 inches in depth, and when a floor is ready to turn off there is always a certain amount of hops that have lain close to the bottom all the time, and consequently have every bit of the moisture dried out of them. In order to correct this there should be a certain amount of partially dried centers (cores) at the time of turning off. These become thoroughly mixed by the time they are in the bin, and after lying for a few days they equalize their moisture throughout the entire lot and go through a mild sweat. They are then ready for the press, and should contain just enough moisture to make them slightly pliable and prevent breaking during the baling process, and no more. There are other minor points to be looked after, such as correct and uniform weight of bales, neatness and durability of package, etc., but the items we have mentioned above bear upon the main points which go to make up a thoroughly first class and marketable hop, so far as the grower has any control in the matter.

Onions and Popcorn.

To the Editor:—Do onions, generally speaking, require a large or small amount of moisture, and at what stages of growth do they require more water than others? Which method of planting (transplanting) is advisable in soil which has considerable sand, but which has enough clay to make it bake? Would it be advisable to plant in beds 4 feet wide and let water run in ditch on each side? This method would allow four rows to be planted on bed, and if onions do not require much moisture (provided, of course, the running of ditches 4 feet apart would not supply more than required amount of moisture) it would save considerable labor which would be caused by allowing water to flow over top of ground, thus causing it to bake. By this method roots would receive ample moisture and the surface could be kept in first-class condition. Would summer heat bake or otherwise injure the bulb if bulk were kept above surface, thus allowing ample room for its complete formation? Would not the tops form ample protection against sun's rays? Would it be practicable to use wheel hoe and attachment in ground of pretty heavy consistency? What can you tell me about the culture of rice popcorn?—Beginner, Orange county.

Onions should receive most water when they are making most growth—that is, the seed should be handled with a very small amount of moisture, because it is quite perishable, and when the onion attains its size and begins to mature the amount of moisture should also be less, in order that it may not be induced to make a second growth, but to ripen properly. Transplanting onions is not much done in this State, because it is so easy to grow them from the seed; but, still, those who have practiced transplanting speak very highly of it. It certainly would be better to irrigate the onions, without allowing the water to flow over the surface of the ground, if you can succeed in doing that. The common practice, however, is to run small ditches between each two rows, rather than four, because with four rows the center ones would be apt to suffer, unless so much water was applied as to make the outside rows too wet. There is occasionally some trouble with sunburning of onions and the tops do not make much shade as the ripening proceeds. The wheel hoe and adjustments work best in the light, sandy loam and come to be rather unsatisfactory as the ground gets to a clay character. The culture of popcorn has to be undertaken very carefully, because there is only a moderate demand.

AGRICULTURAL SCIENCE.

Weeds in Alfalfa Seed.

To the Editor:—The following is the report of three purity tests of alfalfa seeds made for Mr. Clark McChesney, Banta, Cal. Each sample contained about one teacupful of alfalfa seed. The foreign seeds contained in the samples were:

Name of Seeds.	Number of Seeds in Sample 1.	Number of Seeds in Sample 2.	Number of Seeds in Sample 3.
1. Amaranthus albus—tumble weed	4	...	...
2. Amaranthus blitoides—low spreading amaranth	...	2	...
3. Ambrosia artemi-iefolia—ragweed, Roman wormwood	9	...	107
4. Ambrosia psilostachya—Western perennial ragweed	...	...	1
5. Atriplex truncata—wild saltbush (harmless)	1	...	1
6. Brassica campestris—common yellow mustard	119	...	...
7. Bromus—wild brome grass	1	...	...
8. Bromus secalinus—chess, cheat	5	1	...
9. Chætochloa (Chamæraphis) viridis—green foxtail grass	47	...	...
10. Chenopodium album—lamb's quarters, goosefoot	22	...	...
11. Cuscuta arvensis—field dodder, love vine	3	...	...
12. Cuscuta epithymum—clover dodder, love vine	194	6	26
13. Unbroken seed vessels of Cuscuta epithymum	8	...	4
14. Echinospermum Redowskii—small beggar's lice	2	...	...
15. Grindelia squarrosa—gum weed	13	...	...
16. Helianthus—sunflower	5	...	...
17. Medicago lupulina—black medik, none such.	3	...	2
18. Melilotus alba—sweet clover, Bokhara clover	6	...	7
19. Phleum pratense—timothy grass (harmless).	43	...	...
20. Polygonum aviculare—wire grass, yard grass	20	...	...
21. Polygonum convolvulus—black bindweed	2	...	...
22. Rumex crispus—curly dock	11	...	...

Cuscuta, dodder or love vine, is the parasitic vine that proves so objectionable in clover and alfalfa fields.

The seeds of Cuscuta epithymum are usually, as in this case, so tiny that they may be sifted out by means of a selected wire screen, No. 20, made of wire of the proper thickness. The seed vessels, containing mature seeds (which are seldom present), cannot be sifted out of alfalfa seed.

There is no method by which the seeds of Cuscuta arvensis may be separated from alfalfa seed.

Amaranthus blitoides is an undesirable weed. These seeds are larger than the other and more common species of amaranthus, and cannot be sifted out of alfalfa seed.

Ambrosia artemisiæfolia is an obnoxious weed of the middle Western States that is very hard to eradicate. It is very troublesome in grain fields. The hard stems remain to infest the hay of the next year's crop. The seeds have six hornlike pointed projections surrounding the pointed apex, consequently cannot be cleaned out of the grain or other seed in which they are found.

Bromus secalinus is a bad weed in the wheat fields of the Eastern and middle Western States, though not frequent in California. There has been a popular fallacy that wheat turns to chess. Chess really springs only from chess seeds. These seeds probably retain their vitality for a long time.

The so-called chess or cheat of California is a species of large rye grass; Lolium temulentum, poison darnel.

Chætochloa is an objectionable weed.

Eichinospermum redowskii is an objectionable weed, the seeds of which are burrlike, and attach themselves to clothing and to the hair of animals.

Polygonum convolvulus is a very objectionable twining or running annual that is very hard to be rid of.

Practically all of the seeds of Amaranthus albus and Phleum pratense, and nearly all of Chenopodium album may be sifted out by means of the above mentioned screen.

Alice F. Crane,
Tester and Examiner of Seeds.
314 Cherry street, San Francisco.

Agricultural Review.

FRUIT SHIPMENTS.—According to reports of traffic officials of the Santa Fe and Southern Pacific, the number of cars of oranges sent East during the season just closed was 29,000. This includes shipments from Butte county and the San Joaquin country as well as southern California, the bulk of the business, however, coming from the latter section. All shipments are included that went out of the State by rail. In these 29,000 cars there were 10,498,000 boxes. The total value of the shipments was about $23,925,000. Of this amount it is figured that the orange growers and shippers got $14,500,000. The remainder, or $9,425,000, went to the railroads and refrigerator car lines for freight and icing charges. For the season which opens early in November the railroad people estimate that there will be 37,000 cars for the Eastern market. Up to September 15, 4800 carloads of California green fruit have been sent East, with Chicago, New York and Boston as the principal distributing centers. This is an increase of 500 cars over the same period last year, when 4300 cars had been shipped up to September 15, 1904. In other words, 124,800,000 pounds of green fruit were sent East up to September 15, as compared with 111,800,000 pounds for the same period of last year, or an increase of 13,000,000 pounds. The season will close early in November, and the railroad officials say that by that time 2000 additional cars will have gone East. This will make a total for the season of 6800 carloads.

Butte.

FRUIT LABELS.—Oroville special to Sacramento Bee, Sept. 22: The directors of the Butte County Citrus Association met yesterday and adopted three labels to be used in marketing their products. The fancy brand for the choicest fruit is to be known as "Gold of Ophir," and bears a design of a beautiful cluster of oranges. For the next grade the label has a view of the Oroville Citrus Association's grove, with Table mountain as a background. For the standard brand a view of the Feather river was chosen, showing the old Golden Gate dam.

DAIRY FARM.—Chico special to Sacramento Bee, Sept. 14: The local dairy industry is to take on larger proportions. Outside capital is interested in the venture, and from the steps which have already been taken by the parties concerned it is evident the business is to be placed on a firm footing. The parties interested are F. W. Johnson, formerly proprietor of the Marysville Appeal, and G. F. Parks of Marysville. B. Cussick, agent for the Bidwell rancho, states that he had sold to the Marysville people 400 acres of alfalfa land along the Sacramento river, the tract being a part of the river subdivision of the Rancho Chico. It was also stated by Mr. Johnson that it was the intention of the purchasers to keep about 400 milch cows upon the land. Whether or not the product will be sent to Marysville, or a local creamery established, has not been determined upon yet.

CLING PEACH TREES SCARCE.—Gridley Herald, Sept. 22: It is to be regretted that there is an apparent shortage of choice varieties of cling peach trees for sale in the nurseries of the State. There is going to be a good demand for this variety of fruit trees the coming season, as the demand for this kind of fruit has been excellent for several years. The price for canning peaches has advanced steadily for the past three or four years, and there appears to be no good reason why the demand will not increase for many years to come. The canners are anxious to contract for all this kind of fruit they can secure for ten years at prices very materially in advance of that paid five years ago on five-year contracts.

Fresno.

GOOD DAIRY RETURNS.—Fresno Republican, Sept. 24: Laton correspondence states as an example of the returns possible from good dairy cows the following milk checks for the month of August are reported by the parties: Miss Gratia Evans, seven cows, $52.18; D. A. Vanderpool, two cows, $18; Fred Cooper, eight cows, $54.50; Miss Evan's cows were fed largely on green fodder, Mr. Vanderpool fed mostly green sorghum, and Mr. Cooper's cows were fed on alfalfa pasture.

Humboldt.

BIG SHIPMENT OF APPLES TO AUSTRALIA.—Eureka dispatch to Chronicle, Sept. 25. The first of 20,000 boxes of apples intended for shipment to Australia began arriving to-day. The entire shipment will be sent to San Francisco on the steamer Pomona on October 6. The apples must be in San Francisco for shipment on the Sonoma for Australia on the 12th. It is believed this will be the first of a big trade that will ultimately be built up for Humboldt fruits in Australian markets.

Kings.

RECEIVING RAISINS.—Hanford Journal, Sept. 22: Manager L. S. Smith, of the Armsby packing house, at Armona, said that the raisin crop has commenced to come in and that his crew is working day and night at the present time. As yet the same crew that works during the day is kept on until about 10 o'clock at night, but very likely in a few days he will have to secure an extra crew of men and have them work at night. The Armsby house is one of the two houses in the county that are to receive the association goods and so they have expected a rush of business. The J. B. Inderrieden packing house is the scene of much business these days, as the raisins and prunes are being delivered there in great quantities. Manager Hoag has twenty-two men at work and only keeps them busy during the day, but has them work until 10 o'clock every night. Wednesday the grader was busy grading prunes and Thursday the stemmer is taking care of the raisins as fast as possible. About forty tons of Sultana raisins have already been stemmed and boxed.

Placer.

PLACER WINERY.—The new Placer County Winery, at Roseville, is in successful operation. The main building is 90x160 feet. The cellar, whose cement walls are 20 feet high and 2 feet thick at the base, has a capacity of 1,500,000 gallons, but owing to the hot spell in July and grasshoppers, which have reduced the crop of grapes, but half the space will be utilized this season. Eight 20,000-gallon and eight 12,000-gallon tanks occupy one-half the cellar floor. The main building contains fourteen tanks, two of which are 8-foot, and the remainder 12-foot tanks. Four water tanks stand outside back of the brick building, which joins the main buiding on the south, and which will be used for a sherry bake. The office, with testing room and laboratory above, has been built into the triangular space between main and brick buildings. The boiler and still house is a large wooden structure south of the brick building, and contains, beside the boiler, the latest improved still, with a capacity of 24,000 gallons. The scales, crusher, engine and pump are placed outside. W. Haman is chief wine maker. The company, of which Charles Paff is president and manager, holds fifteen-year contracts with growers at the price of $15 per ton.

Riverside.

FINISHES HARVESTING.—Perris Progress, Sept. 21: H. H. Evans has finished harvesting his crop, after the combined harvester had been out seventy-two days, though some several hundred acres had been cut for other parties during that time. Mr. Evans had about 1300 acres this year, of which 1200 were cut for grain and 100 for hay. A total of 7000 sacks of grain were threshed, which consisted chiefly of wheat. The best yield was obtained on the 600 acres 2 miles south of Perris, where 4200 sacks were threshed, making an average of seven sacks per acre.

San Bernardino.

CITRIC ACID FACTORY PROPOSED.—Colton correspondence to San Bernardino Sun, Sept. 22: A proposition has been set afoot looking to the erection of a citric acid factory. The orange growers of this section are all interested in the project, as it means for them a means of gaining some revenue from oranges which are not marketable. Every year there is some portion of the orange crop which for one reason or another is not shipped to the East. A local chemist has interviewed several of the heaviest fruit growers and had a talk with men of means, with a view of interesting them in a citric acid factory, and pointed out the financial success which would crown such a venture. The acid of citrus fruits has a market value of $2 an ounce. A factory could be established and could use up all the waste fruit from the local groves, and also be supplied from the groves about Rialto, Highland, Redlands and Riverside, thereby having at hand ample raw material. It will be formally taken up by the Board of Trade at the next meeting.

GROWERS TO SELL FRUIT AT HOME.—Dispatch to Chronicle, Sept. 27: A mass meeting at Rialto was attended by 100 citrus fruit growers, who gathered for the purpose of cutting loose from the present methods of marketing fruit through Eastern agencies and compelling the buyers to purchase at home auctions, paying cash. Committees were appointed to interest the citrus fruit growers throughout southern California, with a view to all combining to secure the success of the new scheme. By strong resolutions adopted unanimously it was decided that shipping fruit East on the free on board consignment plan is folly, and so long as it continued red ink and poor returns are all that can be expected during heavy shipping seasons. It was pointed out that since May Rialto has sold two-thirds of her crop on the new plan.

San Joaquin.

GRAPES LOW IN SUGAR.—Lodi Sentinel, Sept. 23: The wine grape crop of northern San Joaquin will not come within 75% of reaching the total of last season, due to the hot spell which wilted the vineyards last July. The grapes are also running low in sugar. At this time last year grapes averaged 30% in sugar, but this year, according to Adolph Bauer, local superintendent of the West Wineries, the grapes are so low in sugar that from 24% to 26% is the average. Sweet wine grapes are also poor on account of the low percentage of sugar. The wine grape season is about half through.

San Luis Obispo.

OIL FOR DIPPING.—San Luis Obispo Tribune, Sept. 22: County Veterinarian Faulkner has ordered a carload of light grade oil to be used in the dipping of cattle in San Luis Obispo county under the direction of the Live Stock Association. The county, through its supervisors, has agreed to furnish a tank for the reception of the oil in this city. It will be furnished at cost to all the cattle men in the county for dipping purposes, and they are all urged to use it that the tick may be eradicated.

BIG MELONS.—Paso Robles Record, Sept. 23: V. M. Corbaley has the premium so far this season for big melons. He has sent two to the Portland Fair, one—a watermelon — weighing ninety-four pounds, and the other—a muskmelon—weighing thirty-two pounds. Mr. Corbaley is farming in Hog canyon, where without irrigation he is raising melons and tomatoes.

Santa Clara.

FORGE VALLEY DRIER BURNED.—San Jose Mercury, Sept. 26: The Forge Valley fruit drier, owned by Philip Theasby and located on the Los Gatos-Saratoga road, was destroyed by fire Sept. 25, causing a loss of building, machinery and fruit valued at $3500. There was some green fruit in the building and over twenty tons of dried prunes. The fruit was fully covered by insurance.

BUILDING SILO.—Santa Clara Journal, Sept. 22: James W. Rea, president of the Vendome Dairy, is having several large tanks put up near the barns for the purpose of preparing silo for winter use. This food is said to excel either bran or grain for dairy cows. It is something new to Californians, and the success attending the experiment will be watched with great interest. While but little known in this State, the silo is extensively handled by Eastern dairymen with great success. Mr. Rea is confident that silo properly prepared will excel either bran or grain for milch cows.

Sonoma.

THE LAST PEACHES. — Healdsburg Tribune, Sept. 21: The last peaches of the season were packed at the cannery Saturday. The season's work has been very satisfactory. Tomatoes are now being handled and a large pack will be put up. The pack of the cannery for the season will be about 40,000 cases, made up of 25,000 cases of peaches and 15,000 cases of tomatoes.

HOP PICKERS.—Windsor Herald, Sept. 23: Hop picking is progressing nicely and in a few days will be a thing of the past. Like the grapes, hops have ripened very uneven in this section. Some were picked too green, it is said, and will have a bad effect on the market. Pickers are not making the money that has been made heretofore, owing to the crop being short. "Pick clean hops" is the order of the day and an effort is being made to enforce it. It is reported that thirty-five pickers were laid off at the T. Boone Miller ranch for persistent violation of this rule. Trouble is apparent for both the grower and the picker of hops. There is a well defined movement among the pickers to ask for better wages next year. This gives the grower little concern, for it is but a repetition of what happens every year. But, on the other hand, there has been an effort made by the Japanese to contract the picking in some of our yards, as this paper predicted a few months ago, and one grower advises us that he had a proposition wherein the Japs offered to contract his crop at 75 cents per 100 pounds. It does not seem unreasonable, for the Jap would have to pick only 200 pounds per day to make more money than he usually requires for his labor. Short as the crop is now, the average picker is getting 250 pounds per day, so the Jap has offered a proposition that is entirely safe from the Jap's view point.

GRAPES.—The C. W. A. and the Hotchkiss wineries began crushing grapes Monday afternoon. The crop is found to be lighter than was thought a few days ago. A claim is advanced by a few growers that the hot weather of Monday and Tuesday damaged the crop considerably. The grapes are not ripening evenly. In many vineyards raisins, ripe and green grapes can be found upon the same bunches; but the sugar test is exceptionally high, one grower stating that samples of his crop tested 26% sugar, while 22% is considered normal. Wine makers state that the present condition of the grapes will not produce wine of the quality that is usually made in this section.

Siskiyou.

SHIPPING BEEF CATTLE. — Gazelle special to Sacramento Bee, Sept. 23: A drove of exceptionally fine beef cattle, consisting of 642 head, reached this place from Modoc county. These cattle were the property of Cox and Clark. of Sacramento. On reaching this place they were purchased by the Edson & Foulke Co. Another drove of 264 head, belonging to the Ivory Livestock Co. of Alturas, reached here Sept. 19th. These were purchased by B. Horns Sons, of San Francisco. The Ivory cattle will be shipped to San Francisco to be slaughtered, while the other cattle will be fed for some time by the purchasers. These two droves inaugurate what promises to be a busy season for this section of the State.

Sonoma.

GOOD PRICES FOR GRAPES.—Cloverdale dispatch to Chronicle, Sept. 25: The Italian-Swiss colony at Asti has advanced the price of grapes for this season's crop from $18.50 to $20.50 a ton. J. B. Cooley, who has charge of the colony's Cloverdale winery, announced the advance today, and many are coming in to contract their crop at that price.

Sutter.

GRAPE HARVEST ABOUT OVER.—Sutter County Farmer, Sept. 22: The grape men are now finishing picking their crops, and at most of the vineyards the work has been completed. At the Stabler vineyard a large force is still employed picking for drying and also for shipping. At the Onstott, Pease and Wilkie vineyards all the grapes have been gathered. Many of the smaller vineyards shipped most of their grapes. While the crop was not large this year prices held out well on the fresh grapes and the dried product will sell at high figures from the present prospect.

Tehama.

HOP PICKING FINISHED. — Tehama dispatch to Sacramento Union, Sept. 22: Hop picking on the A. Clemens-Horst Co.'s ranch at Bohemia is finished for this season. The yield of young vines, which were planted last winter, was far better than anticipated, and an additional acreage will be planted next year.

Tulare.

GOOD CROP OF ORANGES. — Hanford Journal, Sept. 22: Arthur Clark, who is over from his orange ranch, near Porterville, says he has a very good crop of oranges on his place this year. Some of the trees are not yet old enough to be in full bearing, but he will have about 1500 boxes on the thirty-two acres. He also says he thinks the price will reach $2.50 per box this season.

Yuba.

DATE OF WOOL SALE FIXED.—Marysville dispatch to Sacramento Union, Sept. 24: The Wool Growers' Association selected October 13th and 14th as dates for the fall wool sale.



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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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THE LAWRENCE-WILLIAMS COMPANY, Cleveland, Ohio.

The Home Circle.

The Day That Summer Died.

The day that summer died we saw a change
Creep slowly o'er the sunshine of her face—
A fleeting beauty, dim and wholly strange,
Unlike the brightness of her earlier grace.
We felt a chill in every breeze that blew
And saw across the meadows green and wide
A veil of frost that silvered all the dew
The day that summer died.

The day that summer died a red leaf fell
From out the maple's green and stately crest,
And all the slender fern leaves in the dell
In robes of white and palest gold were dressed.
A late rose shed its petals one by one,
The poplar stirred its trembling leaves and sighed,
A glowing dahlia blossomed in the sun—
The day that summer died.

The day that summer died the forest stream
Crept forth to catch the blueness of the skies;
The hills grew dim and hazy as a dream
Or, like a vision viewed by tearful eyes,
A growing shadow, chill and vaguely drear,
Swept o'er the landscape like a rising tide,
And winter's footsteps sounded all too near—
The day that summer died.

—Emma G. Weston.

Doctor Goodcheer's Remedy.

Feel all out of kilter, do you?
Nothing goes to suit you, quite?
Skies seem sort of dark and clouded,
Though the day is fair and bright?
Eyes affected—fail to notice
Beauty spread on every hand?
Hearing so impaired you're missing
Songs of promise, sweet and grand?

No, your case is not uncommon—
'Tis a popular distress;
Though 'tis not at all contagious,
Thousands have it, more or less;
But it yields to simple treatment,
And is easy, quite, to cure;
If you follow my directions,
Convalescence, quick, is sure.

Take a bit of cheerful thinking,
Add a portion of content,
And with both let glad endeavor
Mixed with earnestness be blent;
These with care and skill compounded
Will produce a magic oil
That is bound to cure if taken
With a lot of honest toil.

If your heart is dull and heavy,
If your hope is pale with doubt,
Try this wondrous Oil of Promise,
For 'twill drive the evil out.
Who will mix it? Not the druggist
From the bottles on his shelf;
The ingredients required
You must find within yourself.

—Nixon Waterman.

The Overcoming of Satan.

Marsley, manager of the Horseshoe ranch, was tireless himself, and had the faculty of getting the maximum of work out of his assistants. He paid well and treated his men well, but tolerated no indolence nor incapacity among his riders. He knew half the cowboys in the State, and seldom hired a stranger. The Horseshoe ranch—so called because its brand was in the shape of a horseshoe—was owned principally by Eastern men who had never seen it, but left Marsley with undisputed sway over their property in the Southwest.

The second year that I worked there, however, one director had spasmodic fits of interest in the ranch. In one of these fits he sent us Satan; in another he sent us Medby.

Satan was a fine Hereford bull. He was docile enough at first, but as summer advanced he became cross, and even vicious. No doubt he suffered by the change from a rich, tree-shaded pasture to the uneven range, all exposed to a hot, glaring sun.

Medby came with a letter of introduction from the fitful director, who wrote that the youth was a student of fair promise and excellent habits who needed a term of recuperation in the Southwest. The director courteously hoped that Marsley could give Medby some employment. Marsley was not in good humor when he received the letter, for he had just been having trouble with Satan.

The director's courteous phrases would have counted for little had Medby not walked from the railroad to the ranch—sixty miles—in two days.

There was no speaking harshly to the footsore, sun-blistered and hungry youth at once; so Marsley told him to get his supper, gave him some of his own blankets to sleep in, and said he would talk to him another time.

It was no uncommon thing for parties to write such letters to Marsley, but they were seldom presented. The bearers generally lost curiosity when they learned that the manager of the Horseshoe Ranch was sixty miles from the railroad. Marsley liked Medby's pluck, and tried him as a rider; but he was not a cowboy, and never could become one. "Young-man-afraid-of-his-horse" Ike Storm dubbed him, and there was truth in the gibe.

He got along for a few days, but so awkwardly that the boys forbore to play the pranks usually performed on a novice. He created fun enough without any practical joking. Yet he tried hard, for, as he confided to me later, he wished to earn something to aid him in pursuing his studies in mechanical engineering that autumn.

Marsley, seeing that the boy was a failure with rope and saddle, left him in one day with orders to fix up the corral at some weak points. He did this well, and then voluntarily repaired some gates and door-hinges. This gave him an appropriate niche; he fell to repairing things generally about the yards and ranch buildings, often making ingenious and convenient contrivances.

At that time many watering places were drying up, and we had hard work to keep the cattle near drink and feed. Sometimes Marsley and the riders would be away twenty-four hours, and were seldom at the ranch by daylight. Meantime young Medby entered on a plan of his own for bringing water to the buildings. Heretofore it had flowed away at several hundred feet distance, and was often muddied near the ranch by animals rushing for a drink. It came from a stream that fell from a high plateau back of the ranch buildings, and rushed down very swiftly.

Medby made use of some ready-made pipe—the property of a bankrupt and vanished hydraulic mining company—which had been left at the ranch two years before. By getting a little help from the cook, the only other man in camp, he extended these pipes up the hill, and led a strong stream of clear water to a watering trough near the yards.

About seventy-five feet of good rubber hose had also belonged to the mining company. Attaching this to the lower and smaller end of his pipe, he could send a stream of water a hundred feet from the end of the hose.

Finally to the end of the hose he fastened an old adjustable nozzle, with which he could increase or diminish the size of the stream, that flew, in any case, with terrific force. The pressure would soon have burst the hose had not Medby wrapped it with strips of fresh, well-stretched rawhide, making it almost as strong as the iron pipe, yet leaving it flexible.

In the latter part of August, when the "water-works" had progressed thus far, Marsley and I were riding together about three miles from the ranch, when we encountered Satan. The bull had been rather quiet of late, though he still held aloof from other cattle. Now he was lying down. He glared sullenly at us, but did not rise, though we rode almost beside him.

"Maybe he's hurt," said Marsley, and dismounted to ascertain. Instantly Satan jumped up and charged viciously.

Marsley was separated from his own horse; but fortunately he could leap up behind me, and so escaped.

The bull did not return to the charge. Had he attacked any one else so savagely, I think Marsley would have killed him at once; but he disliked to let it appear that he was at all afraid—as he was not. Moreover, the animal was valuable, and we hoped that he would become docile with cool weather.

"I would give a month's wages to any one who would cure that brute without injuring him," he said to me when he had remounted his own horse. "But I am afraid that we cannot tolerate him much longer."

We returned to the ranch at about sundown, and found Satan shut up in one of the yards, bellowing and pawing. He had attacked some of the boys as they returned from the day's ride. They "roped" him, but he broke loose and charged them again. In the tussle one pony was badly lamed, and one cowboy had a narrow escape.

After supper it was too dark to execute Satan, but Marsley determined to have it done in the morning. It was not safe to keep him about.

But in the morning Medby diverted us by showing off the water-works. He sent a crackling stream of water high into the air, but in trying to shift it the hose overpowered him, and tossed him back against the corral fence. The stream caught two of the cowboys, nearly knocked them off their saddles, then crashed through a window, drenching the cook and making a great clatter of tin dishes.

All but the drenched men laughed heartily at this. These laughed, too, when Ike Storm and I tried to capture the whirling thing, which twisted about like an immense boa-constrictor, and tossed us aside drenched and bespattered. Breakfast and a good laugh made several of the men intercede for Satan, and it was decided to give him a respite, but keep him corralled. Medby was at work all the rest of that day weighting the hose so that he could easily control the nozzle.

The next day I came to the ranch buildings about the middle of the afternoon. The air was sultry, and there was a peculiar haze in the sky. Satan was bellowing ominously. A bunch of fresh saddle horses, brought in by Storm during the forenoon, were moving about uneasily in the yard. Storm, Medby, the cook and I were the only men about the place.

After eating I went out to saddle up for another ride, and then suddenly saw the cause of the peculiar haze in the air. A prairie fire was raging to the west and south of us, and a breeze was driving a wedge of it straight at the buildings. The ranch seemed doomed.

Usually there was little danger from such fires, but this year things were parched, and the vegetation about the place had been protected by a fence so as to afford fall grazing for our saddle ponies.

I hastened back to the quadrangle formed by the ranch buildings, wondering how I might save the horses, which are such stupid animals when endangered by fire. Once singed and confused, they refuse to leave the fire; or if forced out, they may rush back again.

Medby now showed himself ready-witted. On seeing the fire, he ran to his new water-works, and soon showered buildings and yards so copiously that it was plain he could save the ranch.

I kept the horses shut in the yard, and he douched them and the fence about them once in a while. Still he could not save all the yard fences, for the stream could not reach the outer ones. But these we quickly put out when the fire swept past and spent its force. In twenty minutes all this danger was over.

I started on a tour of the buildings to make sure that no spark had caught. All at once I heard a furious bellowing. "Satan is loose!" shouted the cook. The fire had burned away part of the fence near him so that he easily broke through, dashed furiously into the enclosure, and confronted me just as Medby was about to stow away his hose.

I was standing near a grindstone set up on a frame over which Medby's coat hung. The bull lowered his head and rushed at me. I darted aside but he kept on, struck the grindstone frame, knocked it rolling, fell to his knees and seemed dazed for a moment. Soon he caught sight of me again, rose, and stood for a moment irresolutely pawing the dust. I moved behind a small log shanty, and looked between the projecting corner logs at him, wishing to hold his attention until Medby could get safely out of the way, when I knew I could swing myself out of Satan's reach.

I had his attention, full measure, for he again rushed at me. I dodged around the cabin, somewhat hampered by my spurs and heavy leather "chaps" and clambered up to the roof. In his fury Satan struck the projecting end of a log, and so knocked it out of place, that the cabin trembled frightfully.

Meantime the cook had run into the eating shanty and was holding the door open, shouting for Medby to join him. But Medby was still standing out in the open ground. He had a strong stream leaping from the nozzle of his hose into the air so that it sprayed down on the horses, but he was watching the bull.

Meanwhile Satan was bellowing, tossing his head furiously and glaring at me. Soon, however, he caught sight of Medby, lowered his head and rushed straight at the lad. Medby instantly swished the nozzle round so that the stream met Satan square in the forehead.

The bull continued his mad rush a little unsteadily, but, blinded by the water, ran aside and turned again to charge.

This time Satan's rush was very vicious; but Medby shot the stream against the lowered forehead with terrific force. The result was as before, except that the bull returned so quickly to the fray that Medby had barely time to turn the hose.

Now Satan dashed in with exasperated bellowing and tossing of the head; but his opponent avoided the charge and trained the stream on the left side of the beast's head as he passed. The bull was so confused that he galloped on until he brought up against the corral fence, where the force of the stream was pretty well spent.

Satan stood, perhaps, a minute, panting and tossing his head, and then resumed the battle, but with changed tactics. As the stream struck him he veered off at an angle and rushed at Medby from another direction. But the lad was quick enough to stop him with the blinding volley of water.

As he swished the stream around it struck me for a second squarely on the breast with a force that nearly knocked me off the cabin, and fully informed me why the bull was foiled. Again and again Satan charged, but the blinding column of water hammering steadily about his head and often entering his open mouth, stunned and choked him.

In one of his short dashes he encountered the overturned grindstone frame, tossed it high in the air, and when it fell near him, made another rush at it, crushing it to the ground and flinging the pieces right and left.

This apparent victory seemed to increase his rage; or perhaps it was due to the respite which Medby gave him. The lad had ceased dousing the bull, and was adjusting the nozzle by the thumb screw so as to make the stream smaller but with more force.

Satan paused awhile, taking breath, and then, by a swift, sudden rush, almost caught Medby, who was not quick enough to direct the stream against his enemy. But with agility that would have done credit to a Spanish bull fighter, he leaped aside, still retaining control of the hose.

Before Satan could wheel round and renew the attack, Medby trained the stream on the side of his head. At this point the bull and boy were quite close together. Satan turned and tried to reach the plucky fellow, but the smaller stream pounded so fiercely that he choked and stood irresolute, coughing and wheezing while the water plunged into his nostrils and mouth. It was too much for him to bear.

Satan turned, panting and choking. But Medby kept the stream hammering the side of his head. Satan bellowed now with despair; he was weak; he was conquered; he retreated across the quadrangle at a wavering, unsteady trot, now as eager to get away as he had been to enter the combat. But Medby still followed him with the stream.

Blinded by the water, Satan ran plump into the angle of an L-shaped building, where he turned and twisted,

trying in vain to escape the torturing stream.

A good general is like Phil Sheridan, relentless in pursuit till the enemy completely surrenders. Medby held the stream on the vicious brute's head until he bellowed with terror, and finally lay down, screening his head as much as possible from the dreadful douche.

Medby's victory was complete. There was no fight left in Satan. He lay there sulkily until afternoon the next day. No amount of prodding or tail-twisting could make him rise. And from that day to this he has been a good, tractable, useful bull, enjoying life well, it seems. So that Medby was really kind and not cruel in forcing him to utter humiliation.

The victory had hardly been gained when Marsley rode up. He had seen the fire, and ridden back expecting to find the place in ashes with half his available saddle horses destroyed. Such a loss at such a critical time would have almost ruined the Horseshoe ranch, and Marsley knew it well.

"Well," he said to me when I had finished telling him about the fire and bull fight, "that fellow is a brick and I have come near overlooking the fact. I wish you would find out quietly just what kind of a fellow he is, and whether extra dollars on payday would be apt to spoil him."

"Nothing will spoil him except long adversity, and that will spoil the best," I said, "but I'll tell you later what I can find out about his need for cash."

On the first of October Marsley gave Medby a check for five hundred dollars, and gruffly overruled the lad's protests that it was too much.

"You've done us good service; we've had a prosperous year and can afford it," he said, shutting up his desk and putting on his spurs.

The next day, when Medby was leaving to resume his studies, Marsely gave him a letter, saying, "This will get you a pass to Kansas City. Good luck to you. Come back here next year if you want a job."

But Medby has never been back. After completing his course in mechanical engineering he at once entered the employment of a big machinery manufacturing concern, and has been steadily promoted until now he gets almost as much pay as Marsley. Meanwhile many of the handy contrivances he fixed for us at the Horseshoe ranch are out of repair, and we are sadly in need of Medby or some other such genius.

But, as Marsley says, I fear there is none other like him.—Youth's Companion.

Care of the Teeth.

Careful, intelligent care of the teeth is as necessary to the health as that devoted to any other part of the body. Fungoid growths which occur among the teeth are said to be the cause of dangerous diseases of the throat. At least once a week the teeth should be thoroughly washed out with a saponaceous dentine. Ordinarily white castile soap is one of the best articles for this purpose. If it is used daily it may make the teeth yellow; therefore, it is better to limit the use to once a week. It is one of the best things for destroying living organisms that are so liable to infect the teeth. The alkali of a mild soap also arrests decay by counteracting the acid of various foods. A simple, excellent tooth powder, to be used daily, is made as follows: To one-half ounce of the best English prepared chalk add one dram each of pulverized cuttle fish bone, pulverized Florentine orris root and pulverized borax and pure powdered sugar. Mix these ingredients to an even powder. Let the chemist season it with a few drops of oil of wintergreen. Put the powder in a large mouthed bottle and cork tightly. One of the best washes for the teeth is tincture of myrrh used occasionally. Purchase 10 cents' worth at a time. After brushing the teeth thoroughly with powder put a few drops of myrrh in a tumbler of water. Rinse out the mouth and teeth well with this solution. None of the expensive French washes which are recommended for perfuming the breath and hardening the gums are better than this preparation of myrrh.

To Pack a Trunk.

There is a right and a wrong way of doing everything. In particular, there are right and wrong ways of packing trunks. In the first place, you ought to do your packing leisurely. Very few things can be successfully done in a hurry, and this is among them. Books, music and any other things of the kind you may want along may form a bottom layer. Next, put in your lingerie, petticoats and dress skirts. Be careful how you fold the latter. Don't have a crease down the middle of the front gore. Fold it so that the front lies flat and spread it out the width of the trunk. Fold over the top to get in the excess length and tuck a roll of paper in the fold. Have plenty of soft tissue paper on hand and by its means puff out all the full sleeves and fluffy bows—anything, in fact, which would be hurt by being crushed. In this manner it is well to stuff all lingerie waists.

It is better to put the latter in a tray and pin them, so that they cannot shake around.

Shirt waists may be laid flat, as they are easily renovated with a flatiron.

Be sure that all the corners are filled, otherwise your good packing goes for nothing. For this purpose stockings and other odds and ends of that kind may be utilized.

Hints to Housekeepers.

Rice may be used at the noon meal in place of potatoes; it has a medicinal value in the season when bowel disturbances are more or less prevalent.

For a beautiful flower centerpiece fill a glass bowl with carbonated water and immediately arrange in it nasturtiums with plenty of leaves. The flowers will soon be covered with sparkling dew, presenting the coolest appearance.

To dip broth or soup from the kettle when cooking, and the fat is on it, draw the kettle forward to the hot part of the range, making the soup boil furiously This raises a large bubble in the middle of the pot from which a cupful of soup at a time may be dipped out—the fat all goes to the sides of the pot.

Pineapple juice is delicious flavoring to use in whipped cream. This will be found worth trying with the cake crumbs. Mix cream and crumbs exactly as directed for the maple cream, but flavor with pineapple instead, and have slices or bits of pineapple at the bottom of the dish and also on top.

The practice of letting little children run barefoot is a very dangerous one. If we could be sure that there were no rusty nails or bits of glass around it might be all right. Even an ordinary scratch coming in contact with tetanus germs might lead to very serious results. Clothe your little boy's feet in lightweight cotton stockings and roomy, stout-soled shoes (or sandals).

Several good suggestions for preserving cut flowers are contributed to the August Good Housekeeping. Heliotrope, which is so hard to keep fresh, should have the leaves stripped from the stalks as soon as it is cut. Greenery can be mixed with the flowers afterwards. Poppies, very fragile blossoms, should have the ends of tbe stems seared with a lighted match or candle before being placed in water.

Serve fresh, ripe fruit for the first course for breakfast as at other meals.

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At sanitariums the patients are expected to eat fruit before the cooked food. This may be an innovation in the country. The family are accustomed to sit down at the table and eat heartily of fried meat, fried or boiled potatoes, and strong coffee, and then have little desire for fresh berries, apples, peaches and other fruit in its season. The strength recuperated by the rest of the night must largely be expended in digesting hearty, unsuitable food, whereas as much as possible should be in reserve for the day's labor.

Domestic Hints.

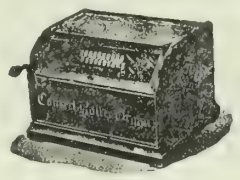
Baked Custard.—Break eight eggs in a bowl; add to them six tablespoonfuls of sugar, a quart of milk, a tablespoonful of vanilla, and a sherry glass of brandy. Mix well together, strain, and bake in a slow oven for about forty minutes, having it well colored on top. Serve ice cold.

Rice Salad.—A cup of boiled rice, cooled. Four hard-boiled eggs and one head of lettuce. Arrange on a platter alternate layers of the rice, shredded lettuce leaves, slices of hard-boiled eggs, and mayonnaise dressing. Over the top layer of dressing press yolk of egg through a sieve, and garnish the edges of the platter with lettuce leaves.

Steamed Plum Pudding.—Stone a quart of plums, add a pint of sugar mixed with a rounding teaspoonful of flour, and put into a buttered granite pudding form. Sift together a pint of flour and a level tablespoonful of baking powder and with the tips of the fingers work in a rounding tablespoonful of butter. To a well-beaten egg add two-thirds of a cup of milk and combine with the flour mixture. Pour this batter over the plums, cover closely and steam one hour. To turn out, put a large round pudding plate over the pan, invert them, and as the pudding comes out, the crust will be underneath and the plums on top. Serve them at once.



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The Markets.

San Francisco Produce Report.

San Francisco, Sept. 27, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Sept.	Dec.
Wednesday	84¼@ 83⅝	84⅛@ 83¾
Thursday	84⅜@ 84¼	85⅛@ 84
Friday	85⅛@ 84¼	85⅝@ 84½
Saturday	85⅜@ 85	85⅜@ 85⅜
Monday	84 @ 83⅝	85⅛@ 84½
Tuesday	84½@ 84¼	85⅝@ 84⅜

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Sept.	Dec.
Wednesday	52⅝@52½	45¼@44¾
Thursday	52⅛@52¼	45⅛@45⅛
Friday	52⅛@52	45⅜@44⅞
Saturday	52⅛@52⅛	45⅛@45¼
Monday	52¼@52⅛	45⅛@44⅞
Tuesday	52⅜@51⅝	45⅛@44¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 35 @1 34⅛	$ —@—
Thursday	1 35⅝@1 34⅝	—@—
Friday	1 35⅜@1 35⅜	—@—
Saturday	1 36¼@1 35⅝	—@—
Monday	1 35¼@1 34⅜	—@—
Tuesday	1 35¼@1 35⅛	—@—

Wheat.

The arrival of a considerable quantity of Northern wheat in the local market has caused the price of California wheat to drop several points. Milling is now rather scarce, but owing to the fact that it comes into competition with Northern wheat the price has weakened considerably. The quotation on California No. 1 shipping is practically nominal, as there is practically none in the market and very little to arrive, owing to the failure of the crop in most sections. Buying was rather brisk on the decline and the price of milling is now ruling steady at $1.40 to $1.45. Trading in December option was quite active and a number of transactions are reported at figures ranging around $1.35¼. A New York exporter gives out the following views: "Consumptive demand for grain in this country has not been reduced during the first ten weeks of this crop year. As we approach winter it must swell, because of the curtailment of fruit and other stuffs that have taken its place. Last year it was believed some effect on wheat values would be developed by the largeness of the apple crop. This year such competition is not likely, owing to the bad outlook.

California Milling	$1 40	@1 45
Cal. No. 1 shipping	1 30	@1 32½
Oregon Club	1 30	@1 32½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.36½@1.36¼.

Flour.

The local market shows some improvement, owing to large export orders from Russia which are keeping all the mills busy. The Chinese boycott is still on, so there is as yet no trading in flour with that country. A prominent Philadelphia miller brought the news that the millers generally in Pennsylvania and New York were running night and day and that a good portion of their business was for export. This was counted rather surprising in view of the relatively lower prices current for Manitoba wheat. It was taken to mean that foreign buyers wanted prompt delivery. Minneapolis reported the largest day's flour sale of the season—83,000 barrels. This was in excess of the day's output of all of the mills there.

Superfine, lower grades	$3 25	@3 50
Superfine, good to choice	3 50	@3 75
Country grades, extras	4 25	@4 50
Choice and extra choice	4 50	@5 00
Fancy brands, jobbing	5 00	@5 25
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market is firm in tone, with the price of spot goods of all kinds somewhat stiffer. Trading has been fairly brisk, both in spot and in futures. Choice bright lots of feed barley are in demand at the advance noted, while off grades are moving rather slowly. The price of December option has also advanced several points, having gone up to $1.06½ early in the week and ruled steadily at about that figure all through the current week.

Feed, No. 1 good to choice spot	$1 07	@1 10
Feed, fair to good	1 02½	@1 05
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 15	@1 20

Oats.

White oats from the North are arriving and selling at quotations. Black and red oats for seed are in demand in the local market, with blacks finding ready takers at the advance of 15c in the price of choice. Eastern reports say that speculative buying of oats increased to such an extent that prices were carried beyond the level at which exporters could do business. In a few instances, however, the foreign bids followed the futures, but not sufficiently to admit of a large shipping trade.

White oats	$1 42½	@1 45
Black oats	1 30	@1 75
Red, choice new	1 30	@1 45
Red, fair	1 10	@1 27½

Corn

White corn found slow sales in this market during the current week and the price declined slightly under only normal receipts. Large yellow corn has developed a little more inquiry owing to light stocks in the hands of local dealers. Reports of the market situation in Chicago with regard to buying for export trade say that sufficient September corn has been sold out and deliveries of actual grain made on September contracts practically to insure no further serious attempts at manipulation this month. Meanwhile the last week's shipments have exceeded the receipts by about 200,000 bushels. Stock have been so depleted by the inroads of shippers and vessels chartered so liberally that shippers could take no more chances on September car loading this month. There is a good domestic call for old and new corn.

Large White, good to choice	$1 35	@1 40
Large Yellow	1 37½	@1 40
Small Yellow	1 50	@1 55

Rye.

The market for rye is inclined to be quiet and a slight decline has taken place. Dealers here look for a still further decline, as the demand is light and receipts have indicated a fair sized crop, though the quality has been nothing to speak of.

Good to choice	$1 45	@1 47½

Buckwheat.

There is now no buckwheat changing hands in the local market. There may be one or two odd lots in the hands of the millers, but there is not sufficient stock on hand to justify a quotation. It is reported that the price of seed is $2.50.

Good to choice	—	@—

Beans.

Just at present the bean market is in a rather indefinite state owing to the fact that large quantities of new beans of several varieties are arriving daily. Bayos were quoted at $3 to $3.25, but with the immediate probability of a decline. Limas are fairly steady at $4 to $4.50, though reports from the growing sections state that favorable weather of the past few weeks has greatly helped the prospects of the growing crop and a decline is looked for as soon as it is harvested. Arrivals of white beans both small and large have been quite large. Very few pinks are arriving and the appearing quotations are for old crop damaged stock now in the hands of local dealers. Blackeyes are ruling firm at quotations and are expected to remain so for some time, as the first part of the crop has already been contracted for.

Small White, good to choice	$3 50	@3 75
Small White, damaged	1 50	@2 75
Large White	2 00	@2 65
Large White, damaged	75	@1 50
Pinks, damaged	1 50	@2 00
Bayos, good to choice	3 00	@3 25
Bayos, damaged	—	@—
Red Kidneys	3 50	@4 00
Reds	2 50	@3 00
Limas, good to choice	4 00	@4 25
Black-eye Beans	3 75	@4 00

Dried Peas.

Arrivals of California green peas are light and are meeting with a fair demand at the advance noted. Niles are ruling firm at the quoted price. None of the local dealers have large stocks on hand and no immediate slump in prices is anticipated.

Green Peas, California	$2 00	@2 25
Niles	1 85	@2 10

Hops.

The hop market, as has been predicted for some time, has taken a still further slump, and even at the decline there is small trading. This dull condition of the market is something entirely unusual for this time of year, as very large lots are generally bought immediately after harvest. In Washington some sales were made at 10c for fair brewing hops with the choicest grades now quoted at 12c. Since the season has opened not more than 1000 bales have changed hands in the entire State of California, which is a record for quiet trading almost without a parallel for the month of September. 1904's are now being quoted at 7c to 10c per pound and 1905's at 10c to 12c. Since the crops all over the world have now been made and there were no failures, there is very little prospect of prices making a material advance in the near future.

Good to choice 1904 crop, nominal	10	@ 12½

Wool.

There is no traffic in fall wool and there will be none till dealers succeed in reducing the large stocks of spring wools still on hand. There seems to be an impression among wool growers that buyers have combined to place the market in its present condition. This is an absurd conclusion, because when there is an active demand for wool at the main centers of the country's market there is always a local demand, and no combination has ever yet succeeded in influencing the price, as the market is of too widespread a character. When there is a demand for one kind of good wool, it does not follow that there will be a demand for the inferior quality of wool which is produced here in the fall. All fall wools will have to go through the scourers; but even they are not inclined to operate in falls, as they can not find buyers.

FALL

Humboldt and Mendocino	17	@20
Northern, free	15	@17
Northern, defective	10	@13
Middle County, free	13	@15
Middle County, defective	10	@13
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	12	@17
Nevada	16	@20

Hay and Straw.

Hay arrivals for the week were about the same as for the week preceding. Arrivals of alfalfa have been quite heavy. The choicer grades of wheat and tame oat hay have been scarce and in good demand all week, selling considerably above ordinary quotations. A scarcity of freight cars has greatly hampered shipments. The market has not been particularly active, the only buyers being the city retailers. Alfalfa hay seems to be a little weak, owing to large arrivals and to continued fair weather. Arrivals of straw are very light and an advance in prices is looked for.

Wheat, choice	$13 00	@	14 50
Wheat, other grades	8 00	@	12 00
Wheat and Oat	8 00	@	10 00
Tame Oat, fair to choice	7 50	@	11 00
Wild Oat	5 00	@	8 00
Barley	7 00	@	9 50
Clover	6 00	@	9 00
Alfalfa	5 50	@	9 00
Stock hay	4 50	@	5 50
Compressed	10 00	@	13 00
Straw, ₱ bale	30	@	45

Millstuffs.

There is a good demand for all kinds of millstuffs. Stocks of bran are very light and prices have advanced 50c per ton. Owing to the fact that the market for cheap river barley is pretty well cleaned up and that the choice grade is ruling higher in price, rolled barley is now quoted at $23 to $23.50 per ton—an advance of 50c per ton in price. Cornmeal and cracked corn are also firmer in price.

Alfalfa Meal, ₱ ton	$18 00	@	20 00
Bran, ₱ ton	22 00	@	23 50
Middlings	28 00	@	30 00
Shorts, Oregon	23 00	@	24 00
Barley, Rolled, choice	23 00	@	23 50
Cornmeal	32 00	@	32 50
Cracked Corn	33 00	@	—
Oilcake Meal	—	@	—
Cocoanut cake or meal	21 00	@	22 00

Seeds.

Stocks now in the hands of local jobbing firms are very light and prices are being maintained, though trading is light. Flax seed is very scarce and stiffer in price. Yellow mustard seed is a shade firmer, as the crop is not turning out as well as had been anticipated. Mixed lots of mustard seed will not bring the quoted price, but a choice lot of Trieste would bring an advance.

Flax	$3 25	@	3 50
Mustard, Yellow	3 00	@	3 50
Mustard, Trieste	4 00	@	4 25
			Per lb.
Canary			6½@—
Rape			2½@ 3
Hemp			3½@ 4
Timothy			5 @ 5½

Honey.

Despite the fact that some parts of the United States have short crops, there is apparently no anxiety on the part of dealers here to buy California honey. Apiarists seem to be holding their honey at a 5c basis, which, under the circumstances, seems to be a little above the present value of the goods. Were holders a little more willing to accept conditions as they exist and sell at 4½c at shipping points, there might be considerable business transacted, but as the matter now stands, it is extremely problematical whether they will get 5c for their honey or will have to let it go at the best the market affords.

Extracted, Water White	5	@ 5¼
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	9	@10
Amber Comb	7	@ 8

Beeswax.

There is a fair amount of trading in beeswax and stocks have been still further reduced. Prices are ruling somewhat firmer, good to choice light finding ready takers at 26c to 28½c. Off grades are moving slowly and are somewhat weaker in price.

Good to choice, light ₱ lb	26	@28½
Dark	23½	@24½

Live Stock and Meats.

The meat market generally has been in a fair condition during the current week. Beef is steady and mutton somewhat firmer in price. Veal is arriving plentifully and the small variety is somewhat weaker in price, owing to the size of arrivals. Lambs are in demand at advanced quotations. The hog market is quiet and prices are ruling weaker.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@	5½
Beef, 2nd quality	3½@	4
Beef, 3rd quality	3 @	3½
Mutton—ewes, 5@6½c; wethers	8½@	9½
Hogs, hard grain, 150 to 250 lbs	5½@	—
Hogs, large, hard, over 250 pounds	5¼@	5½
Hogs, small, fat, under 150 lbs	5¼@	—
Veal, large, ₱ lb	5 @	7
Veal, small, ₱ lb	7 @	8½
Lamb, spring, ₱ lb	8 @	10

Hides, Skins and Tallow.

The hide market continues to strengthen and the last word from Chicago is to the effect that at the present moment hides are higher than ever known before. Even at present prices there seems to be a scarcity. In San Francisco local consumption has put a stop to the shipment of California hides East. During the last week California tanners bought very heavily, owing to the fact that they had been holding off as long as possible in the hope of lower prices. Prices are quotably unchanged.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

There has been a good wool bag demand up until quite recently, but it has now fallen off somewhat. Calcutta grain bags are now held in this market in very limited quantities, though there is quite a fair-sized supply of domestic bags on hand. At present the bean bag demand is engrossing most of the attention of dealers, as it is known that the crop will be more than average in size.

Bean Bags	$ 5¼@	—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7 @7½	
Fruit Sacks, jute, as to quality	6½@7½	
Grain Bags, Calcutta, 22x36, spot	7½@7¾	
Wool Sacks, 4-lb	33 @	34
Wool Sacks, 3½ lb	30 @	31

Poultry.

Last week saw a decided slump in the poultry market because of the unexpected heavy arrivals of Eastern live and dressed stock. These were sufficiently large to produce a temporary stagnation. The holdover stock is now pretty well cleaned up and the appearing prices will be maintained unless receipts should prove more than liberal. The Jewish holidays, beginning Friday afternoon, will have a tendency to keep the market steady.

Turkeys, choice Young, ₱ lb	$ 24	@	25
Turkeys, live gobblers, ₱ lb	21	@	22
Turkeys, live hens ₱ lb	22	@	23
Hens, California, ₱ dozen	4 50	@	5 00
Hens, large	6 00	@	7 00
Roosters, old	4 50	@	5 00
Roosters, young (full-grown)	5 50	@	6 00
Fryers	3 50	@	4 50
Broilers, large	3 00	@	3 50
Broilers, small to medium	2 50	@	3 00
Ducks, old, ₱ dozen	4 50	@	5 00
Ducks, young, ₱ dozen	4 00	@	6 00
Geese, ₱ pair	2 00	@	—
Goslings, ₱ pair	2 00	@	2 25
Pigeons, old, ₱ dozen	1 25	@	1 50
Pigeons, young	2 00	@	2 25

Butter.

The market is steady on extras as the demand has turned more in the direction of storage stock. Stocks of first quality creamery have a tendency to accumulate, though the receipts are only normal. Medium grade creamery butter is somewhat stiffer in price and dairy also shows an advance.

Creamery, extras, ₱ lb	25	@27
Creamery, firsts	23	@25
Creamery, seconds	21	@23
Dairy, select	20	@22
Dairy, firsts	20	@—
Dairy, seconds	18	@19
California storage	22	@24
Mixed Store	17	@18

Cheese.

Receipts were of fair size and good

quality, prices being well maintained by a liberal demand.

California, fancy flat, new	11	@	12
California, good to choice	10	@	10½
California, fair to good	9½	@	10
California, "Young Americas"	11½	@	13½
Eastern, new	15½	@	18½

Eggs.

The egg market is now in an active state, and owing to the falling off of receipts, which is the rule at this time in the year, and partly to the fact that medium grade and Eastern eggs are plentiful, select stock has made a big advance, being now quoted at 40c for large white and fresh stock. The principal effect of this advance is to bring the secondary grades more into requisition.

California, select, large, white and fresh.	38	@	40
California, select, irregular color & size.	28	@	30
California, good to choice store	18	@	24
Eastern firsts	21	@	23
Eastern seconds	18	@	19

Potatoes.

The market is now very quiet—almost dull—both as regards the local and the shipping demand. Under only normal receipts stocks have a tendency to accumulate and prices have weakened. Local dealers do not anticipate any immediate betterment of the market, as the State of Washington is just launching a tremendous crop on the market and Colorado potatoes are now being shipped into Texas and New Mexico, thereby cutting off the demand for California product in that section.

Cal. Early Rose, ₱ cental	45	@	50
River Burbanks, ₱ cental	60	@	70
Salinas Burbanks	85	@	1 15
Chile Garnet, ₱ cental	55	@	65

Vegetables.

The vegetable market is somewhat weaker in tone than at last quotations owing to the arrival of large receipts in the local market. The demand is only fair, but owing to the good weather, stocks remain in good shape. Lima beans are a shade firmer in price owing to a perceptible falling off in receipts. String beans are weaker and wax beans nominal. Garlic is in good demand and somewhat firmer in price. Owing to the great falling off of the shipping demand for Yellow Danvers onions, the price has weakened, but may advance later with renewal of the demand for Australian shipment. Tomatoes are very abundant and somewhat weaker in price.

Beans, Lima, ₱ lb	—	@	2½
Beans, String, ₱ lb	2½	@	3
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	75	@	1 25
Egg Plant, ₱ box	25	@	—
Garlic, ₱ lb	5	@	5½
Onions, New Yellow Danvers, ₱ ctl.	60	@	75
Onions, Australian Brown, ₱ ctl	70	@	85
Peas, Green, ₱ lb	4	@	5
Peppers, Bell, ₱ box	30	@	40
Peppers, Green, ₱ box	35	@	50
Summer Squash, per large box	35	@	50
Tomatoes, ₱ box or crate	50	@	60

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The general tone of the fresh fruit market is firm. This is caused largely by the extremely favorable weather which has prevailed lately. Owing to large receipts of apples, some of which are of rather an off quality, the range is somewhat wider, but select lots are still bringing the same quotations as heretofore. Grapes are somewhat weaker in price, and peaches are firmer. Bartlett pears are now rather more plentiful than they have been heretofore this season and, as a good many off grade varieties are now appearing, it is necessary to quote three grades, as follows: Choice to select, $1 to $1.50; good to choice, 75c to $1; fair to good, 50c to 75c, all in 40-pound boxes. Berries of all kinds are firm and rather scarce.

Apples, choice to se'ect, ₱ 50-lb bx	1 00	@	1 25
Apples, good to choice, ₱ 50-lb. box	60	@	1 00
Apples, fair to good, ₱ 40-lb box	35	@	60
Cantaloupes, pony crate	1 25	@	1 50
Cantaloupes, ₱ box	50	@	75
Crabappies, ₱ small box	—	@	—
Figs, ₱ one layer	50	@	75
Figs, ₱ two layer	75	@	1 50
Grapes, Seedless, ₱ crate	75	@	85
Grapes, ₱ small box	50	@	65
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ large box	75	@	1 00
Peaches, ₱ small box	40	@	60
Pears, Bartlett, choice to select, 40-lb box	1 00	@	1 50
Pears, Bartlett, good to choice	75	@	1 00
Pears, Bartlett, fair to good	50	@	75
Plums, large, ₱ crate	65	@	90
Plums, ordinary, ₱ box	40	@	60
Raspberries, ₱ chest	5 00	@	7 00
Strawberries, Longworth, ₱ chest	8 00	@	10 00
Strawberries, large var., ₱ chest	4 00	@	5 00
Strawberries, Santa Clara, ₱ chest	5 00	@	7 00
Watermelons, ₱ doz	1 20	@	2 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The local market is in very fair shape and stocks have been still further reduced during the current week by a fairly brisk demand. Apples, both evaporated and sun dried, are firmer in price, being quoted at 6½c to 7c for fancy stocks of evaporated and 3c to 4c for common sun dried stock. These prices are expected to be well maintained, as there is talk of a crop shortage in some of the heaviest apple growing sections of the East, and it is not improbable that a considerable Eastern shipping demand will develop later on, even at these figures. Prunes are firm at 3½c for Santa Claras and a 3-cent outside basis. Red Nectarines are on a 6-cent basis for choice.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6	@	6½
Apples, extra choice to fancy, 50-lb boxes.	6½	@	7
Apricots, Royal, good to choice, ₱ lb	6½	@	7
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box. 1-lb cartons	55	@	62½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	6
Peaches, unpeeled, good to choice	7	@	7½
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ₱ lb	7	@	7½
Pears, choice to fancy	8	@	10
Plums, Black, pitted	5	@	6
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2½	@	3
Figs, Black	3½	@	4

Raisins.

There is as yet no change in the raisin situation as regards the local spot market. There are no spot goods left in the hands of jobbers, and as the new crop prices are so near at hand, there is little buying of futures. It is believed that prices will be named by the Association next Saturday, September 30th. An Eastern report says that much curiosity is displayed regarding the delay in the announcement of opening quotations on loose and seeded Muscatels, which it is now generally understood will not be made before October 1st, although one or two in the trade have information from the coast which leads them to believe that the prices will be cut at the end of this week. It is understood that the directors of the new company will meet this week, probably on Thursday, and at this meeting the question of prices is to be considered, but whether they will be fixed and immediately issued remains to be seen.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	85	@	—
London Layers, 3-crown, 20-lb box	90	@	95
Fancy Clusters, 4-crown, 20-lb box	—	@	1 30
Dehesas, 20-lb box	—	@	1 85
Imperials, 20-lb box	2 25	@	2 35
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	4¾	@	—c
4-Crown Standard	5	@	—c
Seedless Thompsons	4½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	6½	@	—c
Choice, 16-oz. Seeded	5	c	
Fancy, 12-oz. Seeded	5½c		
Choice, 12-oz. Seeded	4½c		

Citrus Fruits.

The market is steady on nearly all varieties of citrus fruits. Valencia oranges are rather scarce and a shade firmer. Lemons and limes are steady and grape fruit weaker. Crop reports from the growing sections continue to indicate that this will be a big orange year.

Oranges, Valencias, ₱ box	3 00	@	4 50
Lemons, California, select, ₱ box	3 00	@	4 00
Lemons, California, good to choice	2 00	@	3 00
Lemons, California, fair to good	1 50	@	2 00
Grape Fruit, ₱ box	2 00	@	3 00
Limes, ₱ box	5 50	@	6 00

Nuts.

Walnut prices for the coming season were fixed at a meeting of the growers held at Los Angeles Sept. 23rd. The prices are: No. 1 soft shell, 13c; No. 1 hard shell, 12½c; No. 2 soft shell, 9c; and No. 2 hard shell, 8½c. A few orders have been confirmed at these figures. There is some disappointment among the trade in general over the prices made on walnuts and almonds. Prices on California stock are so high that it seems almost inevitable that foreign nuts will be placed on this market again. Last year's crop of walnuts was between 750 and 755 cars and they were sold at a high price, as foreign crops were short and the danger of competition was therefore eliminated; but dealers are doubtful about moving this year's crop, though it will be only three-fourths as large as last year's, at the figures named by the Association. The almond crop is about 225 cars while last year's was only seventy-five cars.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ₱ lb	12	@	13
Almonds, Ne Plus Ultra, ₱ lb	12	@	13
Almonds, Nonpareil, ₱ lb	13	@	14
Almonds, Languedoc, ₱ lb	9	@	9½
Almonds, Golden State, ₱ lb	9	@	9½
Hard Shell, ₱ lb	—	@	6

Wine.

Crushing is now on in the wine producing districts, and with one or two exceptions reports of the yield indicate that it will be very light. Some authorities state that the dry wine vintage will be only about 66⅔% of the average and the sweet wine vintage nearly as short. Owing to a fair supply of last year's vintage still on hand and a determination on the part of the manufacturers not to discourage consumption by making the price prohibitive, it is probable that the opening prices on 1905 wines will be about normal.

FRUIT MARKETING.

Systematic Handling of Almonds.

TO THE EDITOR:—We note in your paper of last week a statement from the News Bureau in regard to prices named by our Association, etc.

The Davisville Almond Growers' Association are packing their almonds for shipment this season in the best possible manner, and are availing themselves for this purpose of the advantages offered by the new almond packing house owned and operated by Walter G. Read. This plant consists of a large two-story building, equipped with machinery and appliances for uniformly sulphuring, cleaning out the light and faulty nuts and blending the individual lots so that each car goes out as one straight pack. Mr. Read has spent a great deal of time and money in perfecting this plant, and our Association, by reason of his efforts, are without doubt sending to the Eastern and other markets the finest and most uniformly packed almonds which have ever been shipped from the State.

The fact that others are imitating the plan entitles Mr. Read to the credit of erecting and installing the first plant for sulphuring, grading, cleaning, blending and shelling almonds in the State. J. E. LA RUE, President.

Davisville, Cal.

A Wonderful Fruit Trade.

It is telegraphed from Red Bluff that Attorney P. H. Coffman has moved the Superior Court for a new trial in the matter of Tehama county vs. four members of the Board of Supervisors, better known as the "County Fruit Case." This case created a great amount of discussion about a year ago, when it was tried before the Superior Court and a verdict rendered against the supervisors.

The cause of the action originated about three years ago. The indigent sick fund of the county was at a low ebb and the fiscal year was fast drawing to a close. An epidemic disease made its appearance in the county and the supervisors, seeing the necessity of maintaining a strict quarantine and caring for the afflicted, went to work to stamp out the malady. Money was needed, and as the bills for that year could not be paid from the funds of the coming year, four of the supervisors voted to sell the fruit crop on the county hospital grounds to a local business man for $800. The crop was worth but a few dollars, but the price was paid, and at the first meeting in the succeeding fiscal year the board bought the fruit crop back, paying the man $800 for it, thereby bridging over the difficulty. No objections were raised at the time, but in the course of events political disagreements arose, and the District Attorney brought suit to compel the supervisors to pay into the county treasury $800 with interest. The case was tried before Judge Ellison, who ruled that the Supervisors had exceeded their powers in selling the fruit crop and buying it back again, and that they, the four who voted to do this, should pay into the county treasury the sum of $800 and interest. Should a new trial be granted the case will be hotly fought.

Resolutions of Respect.

West Park Grange has adopted fitting resolutions of respect to the memory of Bro. N. P. Peterson, in whose death the organization has lost a good member, his family a kind father and husband, and the community an exemplary and useful citizen.

HOOKER & CO. have moved to their new building, 530 Townsend street, San Francisco, Cal., where they have nearly 80,000 square feet floor space.

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Land for Sale and to Rent.

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Glenn County, - - California.

FOR SALE IN SUBDIVISIONS.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular rips

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Elbe.

For further particulars and for maps, showing the subdiv'sions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn at Chico, Butte County, California

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110 acres of the finest berry, seed, vegetable, alfalfa, dairy and apple land to be found in the valley. Soil deep, dark, rich alluvial. Within three miles of Palo Alto, in the artesian belt. No improvements. Good roads to the property. We are authorized to sell this property far below its real market value. Price $130 per acre.

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FOR SALE—DAIRY RANCHES.

Account making a change in our business, we will sell our four alfalfa dairy ranches, 20 and 30 acres each, in Dos Palos Colony; well improved, cheap and on liberal terms. For information, write BEDELL BROS., Dos Palos, California.

FOR SALE—Fine ranch, Ventura county; over 300 acres; sole owner plenty of water which goes with estate; 33 acres bearing fruit—oranges, olives, peaches, grapes; 20 acres newly set oranges and lemons; ½ mile R.R. station, school. Cause for selling, old age. Easy terms. Investigate; 150 acres besides fruit under plow. Owner, Box 334, Santa Paula, Cal.

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THE DAIRY.

A Dairy Fish Story.

Not the least of the triumphs of modern scientific methods in man's utilization of natural resources (says a Port-au-Basques, N. F., special in the Chicago Chronicle) is forecast in the brief announcement just received from the Balena whale fisheries, to the effect that Prof. Muller has succeeded in domesticating a herd of fifty sulphur-bottom cow whales, and has perfected an apparatus for milking the mammoth cretaceans.

The yield of milk from a full-grown whale is from five to seven hogsheads a day. The milk is fresh and sweet and peculiarly rich in nutritive and medicinal qualities. It is much thicker and richer than the best Jersey milk, and possesses a peculiarly pleasant and distinctive flavor, which those who have tasted it pronounce superior to any known product of the lacteal variety. Chemical analysis has shown that the milk of the sulphur-bottom whale is rich in those same fats and proteids which give to cod liver oil its value as a remedial food.

Prof. Muller's experiments with whales have been carried on in comparative secrecy for several years, and have resulted in many remarkable discoveries in the line of utilizing the different parts of the huge carcasses which have hitherto gone to waste.

By far the greatest triumph yet attained by the erudite professor lies in the domestication of the cow whales. Like all scientific men, Prof. Muller would rather conserve than destroy. The whales are still abundant in Newfoundland waters, but under the old system of killing them for their oil and casting the carcasses adrift it was a question of only a few years at most when they would become so rare as to make their pursuit unprofitable. It will now be for the financial interest of whalers to capture the young whales and keep them alive, because of the promise of richer reward from the dairy products than can be realized in their destruction.

It is impossible to give an adequate idea of the infinite care and patience which it has required to tame the whales. The whale, as every school boy knows, is a warm-blooded animal of the mammalian group, more nearly related to the seal and walrus than to the fish. The whale at times displays a high degree of intelligence, and, reasoning from the analogy of the seal, Prof. Muller several years ago made up his mind that the difficulties in the way of domesticating the largest of all animals were only those which arose from the unwieldy size of the subjects.

The professor looked about until he found a suitable inlet, a salt water lake about ⅛ mile across, the entrance from the sea being about 50 feet across. He arranged a gateway of iron bars by which the inlet could be completely closed. Late in the fall about two years ago a herd of whales was sporting in the offing, and it was noticed that there were a number of young heifers in the herd. By careful work ten of these heifers were separated from the main herd and coaxed and driven through the strait into the lake.

Then began the work of taming them. They were watched and studied until their favorite kind of food was learned. This was a peculiar kind of kelp or rock weed which grows in abundance in about twelve fathoms of water off the coast. Large quantities of this rock weed were gathered and stored near the professor's headquarters at the upper end of the inlet.

Twice a day this food was put outside, where the young whale heifers could get it. Within a month they had learned to come to the feeding place for their meals. Within another month the creatures were quite tame and a name was given to each one. Gradually the cretaceans learned to respond to their names and after six months of training could be summoned from any part of the inclosure.

The problem of teaching them to permit the operatives to milk them was a more difficult one. An apparatus was devised to do the work, but when an effort was made to try it there was trouble at once. It was necessary to drive the whales up on the flats at low water to do the milking, and it has been this part of the work which has absorbed the attention of the professor for more than a year.

Patience in the face of all discouragements with a determination to succeed finally conquered. The first captives learned gradually to go of their own accord to the milking ground. The herd has been increased a few whales at a time until it now numbers fifty, and it requires the services of a staff of sixty men to carry on the daily milking.

Just what the plans of the company are is not generally known, and none of the officials will say. It was learned on good authority, however, that as soon as the dairy experiments in the way of butter and cheese making are complete, and the canning plant is ready, the herd will be driven down to an inlet on the Maine coast, which has been fitted for a pasture. There the dairy will be established permanently.

Experiments have been made recently in permitting several of the tamer cows to go outside the inlet. These experiments have been peculiarly gratifying. In every instance the cow has returned, indicating clearly her preference for domestic life, and on two separate occasions cows of the herd have brought back with them strange companions. The strangers are now thoroughly domesticated and have become valuable members of the herd.

If, as is now believed, the whale milk is of rare medicinal value and proves to be a palatable substitute for the nauseous cod liver oil, it is easy to see the possibilities which lie in the new industry of whale culture. The butter and cheese products are said to be of exceptional delicacy.

SHEEP AND WOOL.

Tanning Goat and Sheep Pelts.

Angora goat skins, says Orange Judd Farmer, require special care, as they are difficult to tan right. Some well-known Southwestern breeders advise the average beginner to have an experienced tanner do the work. The yellow color is hard to obviate and many goat raisers are compelled to dye their robes. William L. Black of Texas, in his work, "A New Industry," says the hair should be washed thoroughly with lukewarm water and soap and rinsed well. If the skin has been dried after removing it should be thoroughly soaked over night in cold water and then scraped with a blunt knife, in order to open pores, etc.

A dressing preparation is made of two parts powdered alum and one of fine salt. These ingredients are thoroughly mixed and sprinkled over the fleshy part of the skin, covering to the thickness of ⅛ inch. The skin is then folded, flesh to flesh, and allowed to remain for a day. It is then again opened and sprinkled with a solution of alum, salt and water, made as noted above with the addition of water. A little bran may also be applied. The skin is folded, and the same process may be followed for a couple of days more, after which the skin is hung up to dry, an operation requiring several days.

After drying a little water should be applied in order to soften it. Again the robe is folded and laid aside for twenty-four hours with a heavy weight upon it. It is then ready for stretching. The skin is stretched little by little, commencing at the outer end and working all around, as nearly uniform as possible, until it is brought back to its natural shape. It is then folded and a heavy weight placed upon it to retain the moisture. After several workings the robe will be soft and dry. Bear in mind that there must be sufficient dampness in the skin to permit of its being stretched, otherwise it will split and crack during the operation. Comb the hair as little as possible.

In preparing Angora skins, C. P. Bailey & Sons of California use the salt and alum tan until the skin is nearly finished, when a little butter is worked in by machinery. This tends to keep the skin soft. For cleaning, sawdust is used. They say the ordinary salt and alum tan alone does the work but leaves the skin a trifle hard. Soap and water followed by gasoline will make the skins nearly white and then bleaching with sulphur will help some to remove the yellow color.

Preparing Sheep Pelts.—Another suggestion to relieve skins of hardness is made by Alois Freyman of Iowa. He advises that neatsfoot oil be applied. Mr. Freyman urges great caution in dyeing Angora fleece and says ordinary methods remove the delicate silky appearance so highly prized. A successful method for tanning sheep pelts with the wool on he describes as follows:

"Wash pelts thoroughly in warm water, removing fatty parts. Take four ounces fine salt, four ounces powdered alum, one-half ounce powdered borax, one quart of hot water and add sufficient rye meal to make a thick paste. Spread this mixture on the flesh side of the skin, fold lengthwise and allow to remain fourteen days. Then wash off paste and when the skin is nearly dry scrape the flesh side with a crescent shaped knife or flint paper. The softness of the pelt will depend upon the working it receives."

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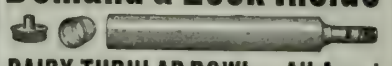
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Olive Oil Making at Home.

The method of making olive oil at home, as adopted by C. C. Elkins Jr. of Fillmore, Ventura county, and described in a local journal, may be helpful to others:

In grinding the olives use a large cider mill, called "Whitman's American." Grind the fruit, seeds and all, as it is found that the broken seeds do no harm.

After the fruit is ground place it in burlap in the press. A frame about 18 by 30 inches by 2 inches high is used. Lay a spread of burlap over the frame and dump the pulp into it; then pack and smooth it out on top level and fold the burlap over and cover it. This makes a cake in the bottom of the press. Next place on top of the cake a framework of light boards nailed together, leaving spaces between the boards. This framework must be 3 or 4 inches larger than the cake. On top of the framework build another cake, using the same frame to mould it. In this manner a stack of ground fruit is built up high enough that the jackscrew will just reach the top of the press. When the screws are run down apply blocks and keep the pulp under pressure from eighteen to twenty-four hours. After it has been pressed for this length of time it is taken out and pulverized. Use a large scoop to chop it into bits. It is ground and pressed again, then taken out and pulverized, and is ground and pressed the third time. The refuse left is used either for fertilizer, feed or fuel.

The juice which runs off is allowed to set. In a few hours the oil will come to the top and the acids and water will go to the bottom of the tank. The oil is carefully dipped off the top and the water run off the bottom. The oil is filtered from three to eight times before the bitter taste leaves it. The filtering will hardly remove the bitter taste, if the olives are not as ripe as they should be. Oil from good, ripe olives does not have any bitter taste after the third or fourth filtering. After the oil is allowed to set for a few months it is ready for shipment.

Presses are made of beams of pine 10x12 inches and about 6 feet long. At the top and bottom, and connected by upright iron rods, two at each end, bore holes through the beams a few inches from the end and secure with solid washers running to both rods. The rods should be 1 inch in diameter. The beams are held apart by pine boards, 2x12 inches.

A pan about 6 inches larger than the framework is placed on the bottom beam to catch the juice as it is pressed, and a small drain pipe in one side conducts the juice into the can, from which it is poured into large tubs. The cider mill used should have two handles; a smaller one will hardly answer the purpose.

In running up the jacks use a 6-foot crowbar, with two men. The jacks should have a screw 18 inches long, 3 inches in diameter.

Oil from the first pressing is as good as that from the third, if the work is done right. A fair product from a ton of olives is about thirty gallons.

The cost of the mill is about $32. The jacks cost $6 each, two being used for each press. The tanks cost from $5 to $7.50, according to size.

ON October 19, 1905, at Suisun, Cal., Messrs. Rush & Pierce will hold the first of a series of annual sales of blooded Shorthorns. The animals to be offered are by prize winning bulls, out of prize winning cows, and possess an individuality that should win for them high merit in the show ring. They are in excellent condition. The owners say that all are as good as scientific breeding, careful selection and extreme care can make them. Owing to this being their first sale, Messrs. Rush & Pierce are very anxious to make a favorable impression on cattle breeders and buyers for future business. With this object in view it may well be believed that only the best will be offered. They want to emphasize the fact that this is not a "culling out" sale. For illustrated catalogue send to Fred H. Chase & Co., live stock auctioneers, 1732 Market street, San Francisco, Cal.

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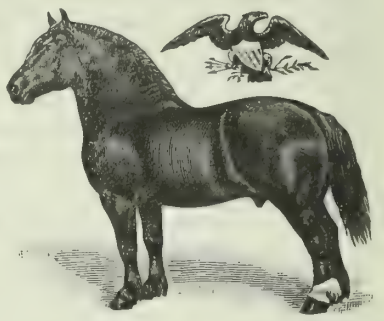
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How World's Weight is Calculated.

When Newton set himself to find the law by which an apple falls to the earth and the planets revolve at varying speed along their orbits, he constructed a formula which would explain these phenomena. He laid it down as a law that the force with which the earth attracts the apple or the apple the earth, or the planets one another, is equal to the mass of the one multiplied by the mass of the other, and divided by the square of the distance between them—the whole multiplied by a constant called G. G is the Newtonian constant of gravitation. It is of all the constants the most important to physical science; it is a constant for the more accurate determination of which Prof. Boys has been willing to spend five years of arduous and minute observation. Mitchell first devised an instrument by which it would be possible to obtain, by actual observation, the attraction which two bodies have for one another.

Cavendish improved upon Mitchell's observations, Cornu carried it on. Professor Boys has carried it two decimal places further. If Professor Boys were to hang a couple of 50-pound lead balls by two fibers he would find it as impossible to measure the inclination of the two fibers to one another as to weigh a sunbeam. But there is a possible way of measuring the attraction, and Professor Boys has made it more practical by the employment of quartz fibers to suspend some of the balls he uses. He uses four balls—two gold balls ¼ inch in diameter, weighing forty or fifty grains, and two lead balls, 4½ inches in diameter and weighing each sixteen pounds.

Suppose these four balls in their first position suspended in one plane. The two little gold balls are suspended by quartz fibers on either side of an oblong mirror, to which they are attached. If any force were to pull one gold ball a little way forward, and at the same time to pull the other little gold ball a way back, it is obvious that a twist, an oscillation, would be imparted to the tiny mirror. So delicately is this mirror, with its gold balls, hung on its tube, that a force equal to the hundred-millionth part of a grain will set it swinging. With this degree of sensitiveness attained, one begins to get near some means of measuring influences upon it. The influence we can measure is that of the two lead balls. We imagined them to be, in the first instance, in the same perpendicular plane as the little gold balls. Suppose we move them contemporaneously and coequally, so that one lead ball moves in front of one gold ball and the other lead ball moves, exactly in the same way, behind the other gold ball. If the hanging of the mirror and its gold balls is delicate enough, it is obvious then that the force exerted by the attraction between the gold balls and the lead balls will give the mirror to which the gold balls are attached a little twist and will set it oscillating. The instrument is delicate enough.

Seated 80 feet away the observer can time it. He therefore can measure the force which the lead balls and the gold balls exert upon one another; he can measure the distance which the balls are apart; he can measure the balls. Therefore, knowing the force, the masses and the distance between them, he can determine the great constant G, and, knowing G, he can determine the specific gravity of the earth; he can find its weight. Prof. Boys, after years of experiment, has found the specific gravity of the earth to be 5527. Before this time we were content to regard it as 5.5. He has taken five years or more to establish these other two decimals. Taking this as a basis, the weight of the world may be figured as 5,882,000,000,000,000,000,000 tons.

The instrument which contains the system of gold and lead balls is put in the corner of an underground crypt in Oxford. There is too much tremor of the earth in London. It is boxed up in a thick octagonal wooden box. It is separated from the observer by a series of felt curtains. He sits 80 feet away and examines its movements by means of a telescope through slits in the felt curtains and in the wooden box, and in the metal tubes holding the gold ball system.

The mirror reflects a 9-foot scale with 5000 divisions placed behind the observer's head. To avoid creating currents of air, Professor Boys has the scale illuminated only by a little traveling lamp. To avoid tremors of earth, he works at dead of night, for a train switching a mile away will move that tiny mirror; and once an earthquake in Transylvania, on the other side of Europe, was marked by it. As to the measurements, the distance of the lead balls from one another is calculated by micrometer and microscope to the three hundredth part of an inch, the distance of the gold ball quartz fibers in the ten thousandth part of an inch, ard a force equal to the millionth of a grain would be sufficient to send the reflection of the mirror right off the scale.

STATEMENTS made by a party as to the value of goods when selling them where no confidential relations exist between him and the buyer, and the property can be seen and inspected by the latter, are considered as mere seller's statements, and furnish no ground for an action for damages for false representations, as such statements do not relieve the buyer from responsibility of investigating for himself before purchasing.

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IN a case of poisoning by phosphorus, sulphate of zinc in 10-grain doses, dissolved in water and given at intervals of ten minutes till vomiting ensues, is the best antidote. A half-teaspoonful dose of old turpentine is also recommended. No oil of any kind should be administered.

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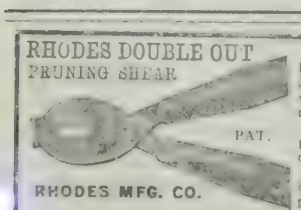
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FRUIT PRESERVATION.

A Review on the Pear Blight.

As we have already stated, Mr. M. B. Waite of the Pomological Bureau of the U. S. Department of Agriculture has been in California again helping along the fight against the pear blight. He has given a Fruit World writer some points on pear blight which are not new to our readers, but as restated may be helpful to new subscribers and those who have not heeded earlier exhortations on the subject. In speaking of the situation, Mr. Waite says:

Pear blight is a contagious bacterial disease of pear trees, and while it attacks apple, quince and other fruits of that family, it does not attack stone fruits seriously. It is caused by a tiny microbe, and, no matter how favorable other conditions may be, the presence of this germ is necessary in order to produce blight.

This bacteria has only entered California in the past few years, but it has been very destructive, particularly to apple trees in close proximity to pear orchards, and is known to be a serious apple pest in Colorado and the Mississippi valley, where it has created havoc amongst growers of Imperials, Missouri Pippins, Ben Davis and Winesaps. In the past summer it has blighted apple orchards in Pennsylvania, but as a rule it is not so bad in apple as in pear orchards. In apple orchards it usually attacks the twigs, but not the tree itself to the extent it does the pear trees, particularly Bartletts.

The extent of the possible damage from this germ to the magnificent apple orchards of this valley it is of course impossible to predict in advance.

It is, however, very much easier to control this blight by beginning a fight against it when it first enters a district, and, therefore, while there is very little of it, than to wait until it has secured a good foothold.

The spread of the pear blight germ may be likened to the spread of a noxious weed. At first there is only a little, and at that time it can be easily wiped out; but after it has become widespread complete eradication is almost impossible. However, in the case of pear blight, it can be controlled by the use of proper methods in fighting it.

The orchardists of California should be on the alert for the first appearance of blight, either on pear or apple trees, and all trees of this sort should be watched carefully for any sign of blight. If any dead twigs or dead branches appear, and they can not be readily accounted for, samples should be sent to Prof. Ralph E. Smith of the State University at Berkeley for identification. The attention of the County Horticultural Commissioner also should be called to the matter. If any incipient blight is discovered, prompt steps should be taken to eradicate it by cutting out the diseased part, being careful to do the cutting in the sound wood a foot or so below the lowest point of discoloration in the bark. Care, too, should be taken to keep the knife and the wounds made thoroughly disinfected.

The best disinfectant is a solution of corrosive sublimate in water—1 part to 1000 parts of water. Prepared tablets can be procured which will produce the required solution by dropping one in a pint of water.

It should be borne in mind that corrosive sublimate is a deadly poison. A careful and convenient way of using it is to saturate a small sponge with the solution and tie it to the end of a string a couple of feet long, which can be fastened to the operator's clothing. The solution is absolutely harmless except when taken internally, when it is deadly. As a bottleful of the preparation costs but 1 cent, it should be emptied on the ground as soon as no longer needed.

The blight spreads mostly in the spring on the blossoms, at which time it is widely distributed from tree to tree and from orchard to orchard by bees, etc. Occasionally it is carried long distances by bees and other flower-visiting insects, and, no doubt, by birds.

The next form of distribution is on the tender tips of young twigs, water sprouts, etc. Here, again, insects play an important part in carrying the disease and inoculating it into trees by puncture.

Twig blight is less abundant than blossom blight, although lately some severe cases of the latter have been discovered in this State.

In apple orchards in the East in some seasons this blight has been very severe, killing nearly all the twig growth, and thus not only partially destroying the crop of that year, but interfering with the next year's fruiting.

Both blossom and twig blight may extend downward onto the larger limbs and in some cases even onto the body. When the disease keeps on spreading, this form of blight is responsible for the carrying of the germ over winter, and is therefore called "holdover blight." Blight on the body and main limbs is occasionally infected direct into the fleshy bark. Usually, however, it runs down from the top or extends in from a blossom cluster, small twig or water sprout.

In eradicating by cutting out, which is the only satisfactory method of control, there is but little difficulty in trimming out the blight from the tops of the trees. The real problem comes when one attempts to cut out blight from the main limbs or body. In doing this a careful examination should be made with the knife, beginning at the bottom of the tree and proceeding upward, to make certain where the blight has reached the lowest point. This line should be followed clear around the branches of the tree, and, when the point is determined, the cutting should be done well below it. There is no real difficulty in getting rid of blight when it is above the forks of the main branches; but when the disease has spread down into the body, it is usually dangerous to attempt to save the tree, and the best thing to do is to pull out that particular tree.

The pear orchards in the San Joaquin valley and, in fact, most all in southern California, have been totally destroyed by pear blight. It is now spreading with considerable rapidity through the great pear districts of Sacramento and other adjacent valleys.

A great fight to exterminate the blight will be made by the growers in these sections of California, and they will be aided by the U. S. Department of Agriculture and by Prof. Ralph E. Smith and his assistants from the State Experiment Station at Berkeley.

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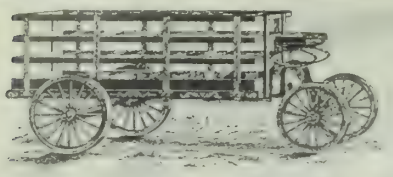
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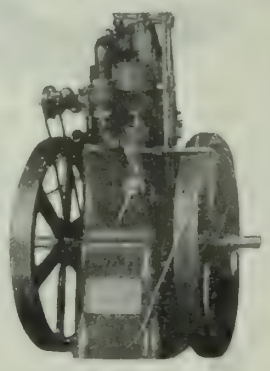
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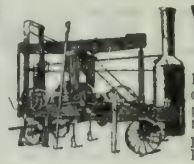
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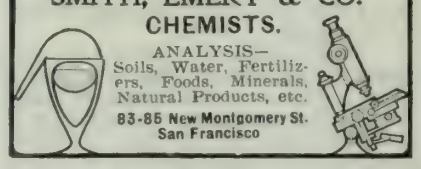
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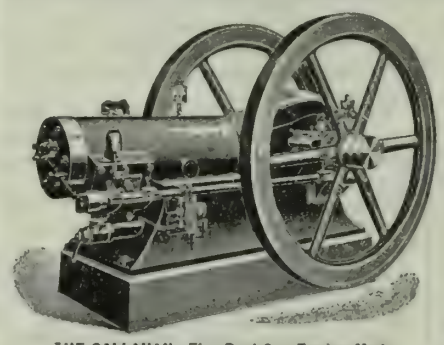


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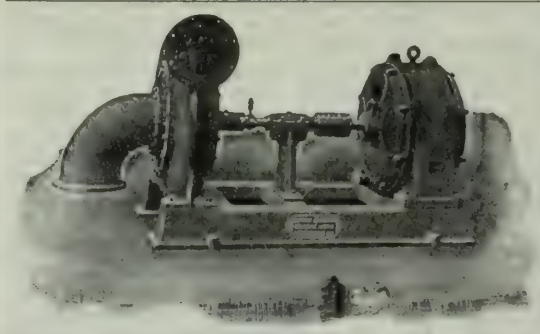
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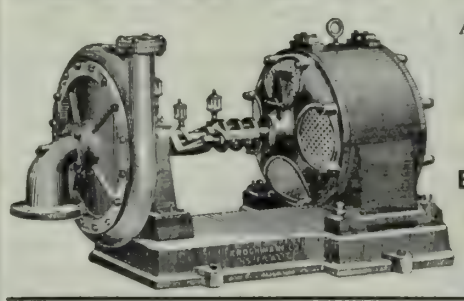
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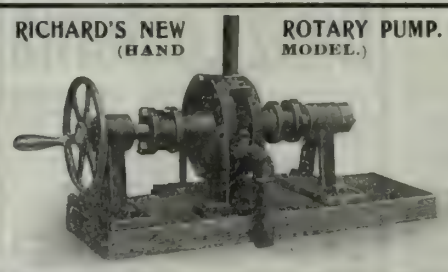
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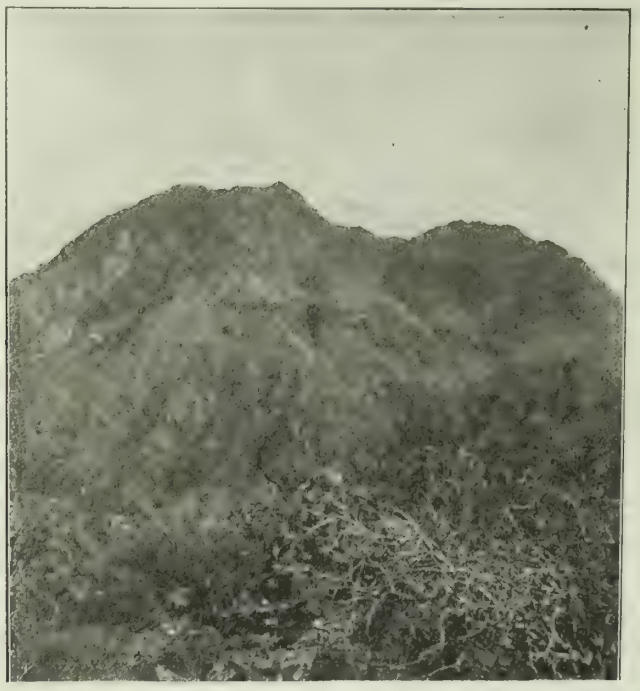
Vol. LXX. No. 15. SAN FRANCISCO, SATURDAY, OCTOBER 7, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Scenes in Mexico.

We turn this week from the cultured beauty of California orchards to the rather more primitive picturesqueness of the older country to the south of us, whence the first movements proceeded for the civilization of our State. During the last half century our connections have been largely toward the East and North, whence most of us came, or where others who participated in the westward American enterprise had chosen to labor for the development of the country. Mexico has, therefore, had a scant share of our attention, although political development in that country has been of a kind to win our sympathy. It is likely that in the southward direction of California, through the attention which the Panama canal will achieve, we shall be better neighbors to the Republic of Mexico. The pictures on this page tell their own story.



A Glimpse of a Portion of Mazatlan.



La Reforma Peak in Santa Maria Mountains.



Unloading Lighters in the Roadstead of Mazatlan.



Gorge in the Lava Rocks of the Santa Maria Range.



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SAN FRANCISCO, OCTOBER 7, 1905.

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The Week.

There has been another delightful week throughout California, favoring the idle with delicious days for idling and the workers effective days for working. Even in districts where showers fell there was quick surface drying and no notable loss of late fruits is reported. This is particularly fortunate, because prunes and grapes, either for wine or raisins, are money this year, and many are getting their pockets lined. The Eastward movement of fruit is also proceeding and prices in distant markets are satisfactory. We are gaining in the fruit this year the value lost in the failure of wheat, and the aggregate will be gratifying.

The California Promotion Committee announces that the prospect for travel this fall promises to exceed any colonist movement toward California during all the influx of several years past. Colonist or one-way rates commenced September 15, and advices from passenger agents in the East indicate many inquiries in the Eastern and Middle West States on the part of intending settlers who expect to take advantage of the present rates. People are certainly getting pretty thick on the cars, if our observations in running about in California are a true measure thereof.

Wheat on spot is unchanged. The free receipts from the North are met by an activity among the local millers and a slight reduction in the price of flour. Futures are somewhat unsettled, and the outlook not very clear. Barley is firm for spot and likely to be higher, because of moderate supplies, while futures have been active and higher. The minor cereals have been steady at old rates. Beans have dropped in the face of large receipts of the new crop and, though the prophets are doleful, it is too soon to declare that the crop will be large enough to warrant it. Dry peas are higher. Bran and middlings are still scarce and high. Hay is quiet and unchanged. Beef is in large supply, but the active demand saves the value so far, while mutton and lamb are in good shape. Veal is lower and hogs unchanged. Fresh butter is only steady because recent advances have helped stored stock. Cheese is doing a little better and eggs steady. Poultry is dull on medium-sized stock and active for large. Potatoes are weaker, but not changed, and yellow onions higher. Oranges are quiet, while lemons and limes are weaker. Orchard fruits are selling well; grapes are especially active and advanced. Dried fruits are strong and mostly out of first hands, which is unusual at this date. In nuts there is an issue between buyers and sellers on Association prices. Honey is being strongly held because of the short crop in distant regions. Hops are unchanged. Wool is slow in this market.

Many of our readers will be interested in the fact that the agricultural department of the University has made unusual preparations to render this year's Short Courses in various branches of agriculture attractive and helpful to many classes of producers. These Short Courses are open without examination to men and women of all ages, who desire to spend a few weeks in an effort to gain some knowledge of agricultural science and improved practice—particular emphasis being laid upon the practical side. There is no charge for instruction, except in the Dairy course, in which a small fee is required to cover cost of material used. This year's Short Courses will have a new feature in the fact that they are conducted in co-operation with various State organizations of agriculturists who are represented in both the lecture work and discussions. The subjects in which instruction will be given are the following:

(1) Fruit growing, including injurious insects and plant diseases. October 18 to October 31.

(2) General agriculture and the animal industry, including dairying. October 25 to November 21.

(3) Irrigation and the reclamation service. October 25 to October 31.

(4) Nutrition of both men and domestic animals, including poultry. November 16 to November 21.

(5) Special work in entomology. November 2 to November 28.

(6) Special course in viticulture. January 16 to February 14.

The plan is that a pupil may remain through the whole period from October 18 to November 28 and take the different subjects as they come along, or remain for one or more subjects. The special course in viticulture is detached and later, because it is a more leisure time for those interested. Full particulars about all courses are given in an illustrated pamphlet, which can be had by asking the Agricultural College at Berkeley to send it.

We answered a query recently about transplanting large palms. It is interesting to note that last month J. W. Poole of Redwood City successfully carried out a contract to move a large palm from San Mateo to that place, which is about 7 miles distant. The palm is described as 40 feet in height and 5 feet 3 inches in diameter. Mr. Poole's estimate of the weight of the tree was between thirty-five and forty tons. Twenty-eight horses hauled the tree on a large truck, taking about two days. The tree came from the residence of the late Alvinza Hayward at San Mateo, and has been replanted near the residence of W. J. Dingee of Redwood City. The local authority speaks of it as the "largest of its kind in the State," which we doubt; for, if it is a California fan palm, there have been taller ones moved in Los Angeles. But there is a more interesting possibility than this about it because the chances are that it is one of the two palms which the late Mr. Latham bought in San Jose and had delivered on his place in San Mateo (a distance of about 30 miles), for $1000. It would be interesting to know if it is really one of those old palms which has grown in San Mateo for a third of a century and started back toward its birth place in San Jose. Perhaps some local plant lover will write us about it.

And so we seem to be in trouble again about lye-peeling of peaches. Formerly the disturbance has been the use of the process by peach driers; now the canners are impeached, so to speak, for lying. The story comes from New York that several carloads of the 1905 pack of California canned peaches have been rejected here recently by jobbers on the score that the fruit was not up to the contract standard. The imperfect condition of the fruit is attributed to the "lye process" used in peeling peaches. It is alleged that samples drawn from the packs of several packers show the presence of lye. One jobber, who rejected a carload, said the fruit he sampled was so strongly impregnated with lye as to cause a sharp biting of the tongue. This all means that possibly canners have used lye and not cleansed sufficiently with fresh water, but have allowed their rinsing water to become foul with lye. There is no more objection to the use of lye for peeling than there is to the use of lye in making hulled corn—providing it is properly done and the fruit adequately cleansed.

QUERIES AND REPLIES.

Transplanting Evergreens.

To the Editor:—I transplanted a madrona last August. I dug a hole 6 feet deep, 4 feet wide, in which I placed the tree, laid the roots out carefully and filled the hole with fine manure and rich sandy loam. I watered it every day for a month, but it slowly died. In removing, the roots were carefully preserved, but most of the dirt fell away, which I have thought was probably one of the principal causes of its dying. Should I have cut away the roots somewhat? The madrona had small branches within a foot of the ground. I cut them all off except one or two little ones near the top. A lawyer friend who has been very successful in transplanting (deciduous trees, however), tells me he thinks I should have cut off all the branches, even the top or main branch, or trunk. I so placed a shade made out of gunny sacks to protect it from the heat during the warmer part of the day. I judge the madrona was seven or eight years old. It stood about 7 feet from the ground, was nearly 2 inches through at the butt. I am going to try my luck again this fall, when conditions should be much better than in midsummer, but before doing so I thought I would try and find out where I made a mistake and ask you what is the most successful way to transplant.—O. N., San Francisco.

Evergreen forest trees are difficult to transplant, and you must not be discouraged at a few failures. You may have erred in several particulars. The time to transplant an evergreen is, as near as you can decide upon it, when the new growth is about to start. This is when moisture and heat are adequate to growth. Evergreens which make several breaks of new growth in the season, like the orange, can be transplanted successfully in several months, providing you can keep the moisture right. Evergreens which are not so kind in this respect as the orange, must be taken each at its own best time. Our own observation is that August is not such a time, nor is January in most parts of the State. The first has too much dry heat; the latter too much wet cold. On the whole, the best season is from February to May, according to the region you are working in. Heat is then adequate and not excessive, and moisture is adequate. Everything feels like growing under these conditions and the tree quickly establishes itself. The deciduous tree can be safely transplanted during the whole of its dormant period unless the ground is cold and water-soaked; the evergreen does best near the close of its dormancy. Even if you had struck the season right, it is doubtful if the tree would have done well in such a pile of manure as you arranged for it. In any fairly good soil the tree does not need manure in the hole; if you wish to push it, use the manure on top when you are sure that it has re-established itself. It is also probable that you used too much water; no tree needs watering every day. You probably had your tree in a hog wallow before many days passed. All evergreens should be taken up with a ball of dirt, if possible; it is a great deal better to get part of the roots in natural position than to get all the roots with their natural connections with the soil destroyed. The deciduous tree is actually dormant as the evergreen never is; consequently the former will stand more disturbance of rooting. It is well to reduce the top at transplanting, but it is not necessary to cut away as your lawyer friend suggested. That is done with deciduous fruit trees chiefly to get branching and strong new shoots where they are wanted. That consideration does not largely hold with ornamental trees. You can preserve the natural form, and most of the growth also, if the tree is small and conditions are right for a quick start of the sap in the new place.

Pollenizers for Royal Ann.

To the Editor:—Please tell me the best kind of cherry trees to plant with Royal Ann to fertilize them. I am a newcomer from Canada and intend planting ten acres this winter. Would prefer a shipping variety, if they bloom at right season.—Planter, Lodi.

The Black Tartarian, the Black Bigarreau and the Bing are all used in the San Jose district for the cross-pollenization of the Royal Ann, and there are probably many others that would perform the same office; but you can hardly make a mistake with the Black Tartarian and the Bing as good shipping varieties blooming with the Royal Ann.

The Rye Grasses Again.

To the Editor:—What is the difference between Australian rye, Italian rye and Hungarian rye? I have some land that is very wet during the winter but dry in the summer; some is adobe and the rest has sediment over it. I want to plant something that will grow high enough to cut for hay, and be good pasture afterwards; and I do not know which is the best. Australian rye is said to grow high and make good hay, but what we have sown in town for lawn does not seem to grow over 18 inches or 2 feet high. What do you recommend?—Farmer, Napa.

Australian rye grass is identical with English rye grass (Lolium perenne); Italian rye grass is another species (Lolium italicum). The latter has something of a reputation as an annual plant, but in California it certainly has a disposition to take on perennial habit. The Italian rye grass is generally considered to be more leafy in its growth, and some prefer it on this account to the Australian, but the Australian is more trustworthy, and more likely to be permanently satisfactory. There is no Hungarian rye, but you probably refer to the Hungarian brome grass (Bromus inermis). This brome grass is rather coarse, has considerable drought resistance and is a good winter grower, but is not so good on the whole for California as the Australian rye grass. For the situation which you describe Australian rye grass is probably most promising for experiment, but there is quite a question as to whether it will live through the dry season without irrigation, although it will endure saturation and overflow during the winter season. Its growth is proportional to the moisture, and although it will make a low growth on a lawn, will grow many times as high in a field where it has more room and other favorable conditions.

Spelt and Other Grains.

To the Editor:—Has spelt been raised in this State this season, and if so, do you know where I can get some of it? Also can you tell me where I can get Moravian barley, Turkey red wheat and Macaroni wheat? And of these two kinds of wheat which is proving the better in this State?—Grower, Ventura county.

We cannot tell you where you can get spelt, unless the San Francisco seedsmen have some, because, although it has been introduced a number of times and somewhat distributed through the State, we do not know of any one who grew it the second year. We do not seem to require the extra hardiness which this grain has, because barley is hardy enough for almost any place where they desire to grow grain in California. You can probably get Moravian barley from Mr. August Hagemann, Livermore; Turkey red wheat from Mr. Smith, manager of the Pioneer mills, Sacramento, and Macaroni wheat from F. McMillan, Fair Oaks, Sacramento county. The Turkey red wheat pleases the millers much better than the Macaroni, because it has the sufficient gluten content and is not so hard to grind as the Macaroni wheat. Probably all these varieties of wheat which are now attracting so much attention can be ordered through seedsmen advertising in the Pacific Rural Press.

Red Humped Caterpillars and Water Cores.

To the Editor:—I have mailed to you some caterpillars I found on my trees, and would be pleased to have you tell me what they are and how to exterminate them. They commence at top of tree and clean every leaf off. I have a small orchard of about six acres, principally apple trees. At the northwest end I have a double row of eucalyptus trees, and it is that end of the orchard where these caterpillars have stripped several two-year-old trees.

I find most of the apples growing in this vicinity have what is called water core. Do you know if it is the soil or climate that causes it?—Grower, Sonoma county.

You send fine specimens of the red humped caterpillar. They are injurious, but are usually held in check by their natural enemies, that it is seldom that the orchardist has to undertake their destruction. They can be poisoned by spraying the tree with Paris green, and other preparations such as are used for codlin moth. Probably the eucalyptus trees had nothing to do with the occurrence of these insects. A single wandering moth could have laid eggs enough to produce all the worms you have found.

The occurrence of "water core" has never been explained. Some varieties are a great deal more subject to it than others, but fortunately in the varieties which are chiefly grown for commercial purposes it does not occur often enough to be of any great injury.

A Gold Bug.

To the Editor:—I send under separate cover a ladybug I found on the beans in my garden, which is a new one to me. The wing covers were gold, brilliant, as if plated; but the color turns to silver and to brown, either of its own volition or by propinquity of other objects. Would you kindly tell me his name, and what particular kind of scale or louse it feeds upon?—Amateur, Placerville.

The little box which you send was crushed in the mail, the insect evidently took its chance to escape and nothing was found in the box but the cotton. It, however, from your description, seems to be Cassida aurichalcea. It does not belong to the ladybug family at all, although it has the general resemblance in size and form. It is a vegetable eater, but has never received a prominence, because it is exceedingly rare. If you find other specimens we would be glad to receive them in a tin box in order that this identification may be verified or corrected.

Cinnamon Growing.

To the Editor:—Have you any data regarding the culture of cinnamon in the United States or more particularly in California? If you have any information regarding culture methods used, and where such experiments have been carried on, or where I could receive such information, I would be pleased to receive it.—Enquirer, San Francisco.

There is no cinnamon commercially grown in the United States, although plants have been introduced from time to time in both Florida and in California, but never planted, so far as we know, on a commercial scale. The tree is a little less hardy than the camphor, which is a tree of the same genus, but there could undoubtedly be places found both in California and the Gulf coast where the plant could be grown. The situation is, however, probably much the same as with camphor. The amount available in Asiatic countries is too great to warrant production; in fact, ruling prices render local production impossible of profit, because we cannot compete with labor supply in the countries where these products are now prepared.

Non-Bloating, Alkali-Resisting Forage.

To the Editor:—Can you tell me whether Egyptian clover will bloat cattle? Can you recommend a number of grasses for irrigated pasture on light sandy land with a touch of alkali, so as to have green pasture the year round, and pasture that will not bloat? The same care is to be given as to alfalfa.—Pasturage, San Joaquin county.

We have no doubt that Egyptian clover would bloat cattle just as red clover does if fed green in excessive quantities to cattle which have been living on dry feed. Nearly all the clovers, so far as we know, will do that. The best plant for alkali land is Bermuda grass, but Bermuda grass will not grow in the winter. The best grass for summer growth on land which retains moisture enough is Australian rye grass, but Australian rye grass will not endure much alkali. Unless the alkali is too strong you can get a combination of Australian rye grass and Bermuda grass and get both summer and winter growth, and this is perhaps the best thing that can be suggested under the circumstances.

Green Grain Silage.

To the Editor:—What can you tell me relating to silos filled with oats or wheat, cut green, and would this keep moist through a dry summer? Irrigation costs as much as the crop is worth, or nearly, up this way.—Farmer, Grass Valley.

The siloing of unripe grain is not nearly so satisfactory as the siloing of corn, and for that reason green grain is not much used. It does not work well to put it down in a silo without cutting into short pieces with a regular silage cutter, just as they do corn, for grain taken in sheaves or bundles holds so much air in the inside of the straw and between the straw that it does not keep well. We can hardly encourage you to undertake silage on the basis of oats or wheat.

Alfalfa on Shares.

To the Editor:—What per cent of the proceeds is customary for the person who rents alfalfa land on shares to pay the owner when the planting and the irrigating are paid for by the owner?—Subscriber, Hollister.

We would like to have the facts from the different alfalfa districts.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 2, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Cool and clear weather prevailed most of the week. Light rain on Wednesday was followed by brisk northerly winds, neither of which caused any material damage. Fruit drying is progressing rapidly and satisfactorily. Grape picking continues and heavy shipments are being made to markets and wineries. The grape crop is turning out somewhat better than expected and the grapes are of good quality. Oranges continue in excellent condition and give promise of a heavy crop. Olives are doing well. Walnuts were injured by heat in July and the crop will not be as large as expected. Hop baling and shipping are progressing. The fifth crop of alfalfa hay has been harvested. Dry seeding is in progress in some sections. Feed is still fairly good and cattle are looking well.

Coast and Bay Sections.

Generally clear, warm days and cool nights prevailed during the week. Light rain fell in nearly all sections Wednesday, but caused no damage. At Upper Lake the temperature fell to 28° in the morning of the 29th, but no injury resulted to grapes or other crops. Grape harvest is progressing rapidly in all sections; the fruit is of excellent quality and the yield fair, though below early expectations. Large shipments of grapes are being made and the wineries are in full operation. The apple crop appears to be the best for several years in all the apple growing districts, and the supply exceeds present demands. Fruit drying is nearly completed. Deciduous fruits have turned out considerably better than expected. Tomatoes are plentiful. Apricot pruning has commenced. Hop baling and bean harvesting continue. The bean crop is late in maturing, but will be large. Fall plowing is in progress. Dry feed is plentiful and stock are in good condition.

San Joaquin Valley.

The weather was clear and cool most of the week, with light showers in the central and northern districts Wednesday and Thursday. The rain was followed by strong northerly winds. No damage was done to raisins, owing to timely forecasts, but raisin making and fruit drying were somewhat retarded by unfavorable conditions. The raisin crop is nearly all in stack or sweatboxes and large quantities are going to the packing houses. Present conditions are that the raisin crop will be far better than estimated. The second crop is now on the trays. Wine grapes are being harvested and the wineries are in full operation. Almond harvest in the Lodi district is completed; the yield and quality are reported good. Oranges are in excellent condition and prospects are good for a heavy crop. The fifth crop of alfalfa is not as heavy as expected. Pasturage is plentiful and stock are in good condition.

Southern California.

Warm and clear weather prevailed most of the week, but light rain fell in San Diego and San Bernardino counties on Thursday, and the first snowstorm of the season occurred in the San Bernardino mountains on the same date. The weather forecasts were generally heeded and raisins in the San Diego district were not injured. Slight damage was done by the rain to unprotected baled hay. Grape harvest is progressing rapidly. Raisin making is well under way and wine grapes are going to wineries. Fall melons are in bloom in the Coachella valley. Oranges continue in excellent condition and at Upland it is expected the fruit will be ripe for the holiday trade. Walnut picking has commenced; the nuts are of good quality. Bean harvest is progressing; in Ventura county the crop is reported unusually heavy and in the Santa Maria district about average. Sugar beet harvest continues. The late cutting of alfalfa is light.

Eureka Summary.—Generally cloudy, with light showers. Harvesting grain is over; the quantity of barley per acre is the largest ever turned out. The pea crop is reported very large. Shipments of apples are increasing.

Los Angeles Summary.—Light local showers latter part of the week did neither good nor harm. Hot northerly winds at close of week may possibly hurt walnuts, but nothing known yet. Beet sugar harvest continues.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Oct. 4, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week.	Total Seasonal Rainfall to Date.	Total Seasonal Rainfall Last Year to Same Date.	Average Seasonal Rainfall to Date.	Maximum Temperature for the week.	Minimum Temperature for the week.
Eureka	.15	.28	2.11	2.15	68	46
Red Bluff	.02	.02	4.97	1.27	90	50
Sacramento	.02	.02	3.69	.56	90	48
San Francisco	.00	T	5.15	.58	92	50
San Jose						
Fresno	T	T	1.80	.50	94	44
Independence	.24	.24	.39	.37	88	46
San Luis Obispo	.00	.03	3.60	.58	94	42
Los Angeles	.00	T	.45	41	96	54
San Diego	.00	.66	.07	.21	86	56
Yuma	28	.54	.81	.72	102	56

HORTICULTURE.

International Horticultural Exhibition at Edinburgh.

Written for the Pacific Rural Press by Prof. W. L. Jepson of the University of California.

An international horticultural exhibition was held at Edinburgh, Scotland, September 13, 14 and 15, under the auspices of the Caledonian Horticultural Society. Something like $7000 offered in prizes attracted exhibits to the number of 1860, arranged in 263 classes. While the term international was not justified, the Paris firm, Vilmorin, sent a splendid exhibit of vegetables to strengthen the entente cordiale.

In flowers there was a remarkable cleavage between hot house and hardy exhibits. Moreover, the former were mainly exhibited as single blossoms, arranged in rows, half dozens or dozens on flat trays or in formal patterns on shields. In some cases the single flowers on a bench were prettily banked with filmy ferns or gysophila; but for the most part single blossoms, like pansies, were laid in the center of a little paper circle with laced edge, or, as in the case of dahlias, with the short stem thrust into the mouth of a water bottle. The individual flowers were, however, so fine that one disregarded the primness of the rows and gave his attention to the variety of form and color. While the dahlias were remarkable for their size, correctness of form and color, they were far outclassed by the cactus dahlias, the most striking and handsome flowers in the show. These, in their great size, variety of form and range of color, seemed to open up wholly new possibilities. The colors were remarkable for their purity and solidity, ranging from terracotta shades to pure canary yellows and intense crimsons. "Violetta," "Gladiator" and "John Burns" were three remarkabie strains. Gladioli came next in interest. Never had I seen so many perfect flowers on one spike. The leading strains were Gargantia, MadamePalmer, Fra Diavola and Aphrodite. Chrysanthemums, pinks, asters, sweet peas—in fact, all the hardy plants—were so inferior to the California grown that they did not receive from me the attention they doubtless deserved.

The competition for table grapes was a strong feature of the exhibition, the crowds of people being very dense about the long tables where the exhibits—invariably single bunches—were shown. The chief prizes went to the Muscat of Alexandra, but the Alicantes were superior, viewed with Californian eyes. The bunches of all varieties—all hothouse, of course—were very large and full, while the berries were singularly perfect. The hothouse peaches were not so satisfactory. Small-sized apples were of good form and quality, but the large, selected ones tended invariably to malformation.

Selection played a less strong part in the display of vegetables. The potatoes, carrots, parsnips, turnips and onions looked very much like those hawked about the narrow streets of Edinburgh, in great bunches hung on the ends of carrying sticks, a la Heathen Chinee, almost the only familiar mode of transportation observed here.

Vegetables are cheap and meat is not dear in Great Britain, but fruits and flowers are high priced. The minimum price paid for hothouse grapes is $1 to $1.25 per pound. Peaches, the equivalent of those selling for 4 to 8 cents a pound in California, are 25 to 50 cents apiece. Bananas are cheap, one or two a penny. In Glasgow I saw No. 1 Californian dried peaches offered at retail for 16 cents per pound and dried pears for 8 cents.

There is only space for me to refer to the show of hardy and foliage plants, pitcher plants, bedding plants and shrubs and garden appliances. All were noteworthy and offered unique features. An attractive novelty was the competition of handsomely decorated dinner tables, which was highly appreciated by throngs of the fair sex of Scotland.

Edinburgh, Sept. 14.

A Chinese Sweet Pomelo.

Consul Anderson calls attention to the pomelo or Chinese bread fruit, a member of the citrus family: In a report from Hangchow on the fruits of China I called attention to the fact that, alone of all Chinese fruits, the pomelo could, in my opinion, be introduced with profit into the United States upon a more extensive scale than it has been. The number of inquiries received both from individuals and from Government experiment stations, as a result of that report, shows an extraordinary interest in the subject, and the requests for seeds, which cannot be met until the pomelos come in next autumn, promise that something definite will be done about the matter in the United States and Cuba. I understand that the fruit is actually grown in several portions of the United States by a few persons who have introduced it from China themselves, but it is not grown commercially, or at least not upon any great scale. Foreigners agree in declaring that, all things considered, the pomelo is the finest fruit in the Far East. In my opinion it is one of the finest fruits grown, and I would be very glad to see it produced commercially in the United States. It combines the good points of the orange with the good points of the grape fruit. It is more easily handled than the orange, and has not the peculiar bitter quality of the grape fruit. In general description it may popularly be known as a cross between the orange and the grape fruit, but it is probable that, if not the original citrus fruit, it is older than either the orange or the grape fruit. Apparently it has been cultivated here in China for at least 2000 years.

It requires ordinarily only three years to grow the tree from seed to bearing period, although, of course, the first year's crop will be very small, and, commercially, it will pay to hold back the bearing period at least a year. Its bearing period with ordinary Chinese care probably ranges from twenty to twenty-five years. The tree apparently grows upon any kind of ground, good soil, of course, producing more and better fruit than poor soil; but the habits of the tree require no particular soil or soil conditions.

Climate and Soil Required.—The best pomelos are grown farther south in the lower portions of Fukien Province and the upper portion of Kwangtung Province. This corresponds in latitude with Key West and in winter climate with central and southern Florida, although probably the summers are somewhat warmer. It has much of the characteristics of central and southern Florida and lower coast Texas, but its soil will hardly average as good for citrus fruits as that of the American States mentioned. The best pomelos in the world are said to come from a little valley near Chang Chew, a large Chinese city in the interior from Amoy which has not yet been opened to foreign trade, the village in this valley named Po Nan being the center of the trade in fine pomelos. The pomelos grown there are of exceptionally fine flavor and size and of splendid and showy appearance. They bring high prices. So famous are the pomelos grown there that each year a special tribute of Po Nan pomelos are sent to the Emperor at Peking. The summers in this valley are hot and rather damp. The winters show considerable frost but practically no freezing. The temperature will often go as low as 28° F. and has been known to go as low as 25°, although damage was done at that time. The summers are of higher temperature and the winters of lower temperature than Amoy, on an island on the seacoast and of the same latitude. I believe the extremes may fairly be said to be practically the same as those of many valleys in central California.

The pomelo is grown far in the interior of China, having been reported as common by travelers in even the drier portions of Szchuan Province. I believe that it is even more adaptable to climatic differences than the orange, but it would probably do better in a warm and comparatively damp climate like Florida than in the dry atmosphere of California.

Bearing Capacity of Trees.—The Chinese say that a good-sized tree will ordinarily produce from 600 to 700 pomelos. I have no doubt but that many trees will produce more. When it is considered that many pomelos will run as large as 7 or 8 inches in diameter and even larger, it will be appreciated that such a tree is bearing a load. The fruit is more oval than round. Its color and appearance are those of the grape fruit. The structure and covering also are practically those of the grape fruit, except that the skin and pith padding may average somewhat thicker, and the small globules of juice and fiber or "meat" are more perfectly separated. Each section of the fruit contains a large number of seeds, but the seeds are close together on the inner edge of the section of the fruit and are easily separated from the edible portion without breaking into the juice cells. The Chinese pick their pomelos, as they do all their fruit, too green to get the best results, and often the quality of fruit is poor simply because it has not been allowed to properly ripen. This premature gathering of fruit probably also interferes with the maintenance of the highest quality of their seedling trees. Many of the producers practice grafting from trees of unusual merit, but the general rule is to raise trees from the seeds. Early picking also prevents the fruit from keeping as long as it otherwise would, but in spite of green picking the fruit will keep for months. We have had pomelos here in March from a crop which ripen in October and November. The Chinese have no particular means of caring for the crop. The pomelos are handled in bags and receive little care. Their keeping qualities naturally could be greatly increased by more careful handling. As it is they are shipped in bags all over China and Japan and to the East Indies, and, in spite of rough usage and more or less bruising, they keep indefinitely, apparently lasting until the demand for them has exhausted the supply. I believe that with modern methods of caring for and shipping the fruit the pomelo would become one of the most popular fruits in the United States.

CEREAL CROPS.

More About California Wheat Problems.

Mr. F. McMillan of Fair Oaks, Sacramento county, is known to our readers from the notices we have recently made of his wheat display at the State Fair. He objects to some of the exhortations which are now being offered to wheat growers by the free writers and talkers about wheat, and undertakes to check up some of them in a letter to the Sacramento Union, which will be found interesting in our parish:

The Exhortation to the Wheat Farmer.—Judging from interviews and editorials of the press on the problems of wheat growing in California, the wheat farmer may consider himself as lacking in common intelligence and incapable of understanding what is to his best interest. And his stupidity in not rotating his crops and changing annually his seed has been the lamentable cause of the wheat deterioration in our State. It is true that our State is passing as a wheat exporting State, and will so continue for various causes.

First—The farmer has turned his attention to farm products less expensive and more remunerative than wheat, such as horticulture, viticulture and stock raising.

Second—The unreliability of farm help, other industries of our State giving better inducements in wages for the better class of help than the farm.

Third—Other States of cheaper land and labor coming into the markets of the world in competition with our State. These are some of the causes of the effect.

Limits to Rotation.—A rotation of crops as a re-establishment of the productiveness of the soil is void. We can rotate with wheat, barley and oats with no effect. We cannot with corn, beans, potatoes, timothy, clover, or with any other crop. Therefore, we have to take the condition as it is and make the best of it. We do so with wheat, hay pasture or summer fallow.

Change of Seed.—The change in seed is good if made of California seed from adobe to red land, or from red land to adobe, but not at all times from other countries or States. Some seed may not do as well the first year as thereafter. Therefore, it should be grown for several years before changing.

All wheats produced in the United States, except late hybrids and late importations by the bureau of plant industry of the United States Department of Agriculture, have been grown and tested in this State. Some of the varieties under the following names of my knowledge are the White Australian, Australian Purple, Straw Chile, Chile Club, Chile Colorado, Chile Chino, Chile Linseed, Defiance (a hybrid from Vermont), White Club, Salt Lake Club, Canadian Club, Pride of Butte, White Tuscan, Red Tuscan, Propo Palouse, Blue Stem, Oregon Blue Stem, Patent Office Snowflake, Genesee Fife, Seven-Headed Sonora, Hopkins Chile, and many other varieties unknown by name. The principal wheat product of the State to-day is, according to Darwinism, "the survival of the fittest," and will be the seed, whether planted forty years or not. The Club wheats lead all others for their productiveness, and their commercial value is equal to any other variety produced in this State for export trade, and rank in the English market with the best wheat in the world, a market which governs the price of all our wheat, both for milling and for export.

The problem of seed is easily solved. The farmer will plant that which gives him the best return. It would be unwise for him to grow wheat that would not be acceptable for export, although first grade for milling, for it would place him at the mercy of the miller. It is human nature for every individual to be alert to the best interest of his business.

Several Turkeys.—There is a wheat known as Turkey, coming originally from Russia and introduced some twenty-five or thirty years ago in Kansas, where it became a favorite in the great prairie States for its hardiness and good milling qualities. It is a small, hard, red-bearded winter wheat. But there are a number of varieties of hard, red, bald and bearded spring and winter wheat now produced in Kansas and other prairie States and Washington. Some of them are known as the Crimean (a bearded wheat), spring and winter Ghirka (a bald wheat), Theiss (a bearded), bearded winter, red-bearded and Y X (bearded). It seems that commercially all of these wheats are misnamed Turkey Red. We understand that a farmer in Yolo county planted last season Turkey Red and received good return. We also know of several other farmers who last season planted Turkey Red and received hardly any return, especially in Franklin, in this county. It would be almost impossible to name which variety of these hard, red wheats was grown in Yolo county and that which was grown in Sacramento county. There it would not be wise for farmers to plant their farms with this commercial Turkey Red until they know whether it is suited to the climate and soil of their farms. Our State experimental seed grain stations will best inform us on this subject.

A Stanislaus Experimenter.—The following extract from a letter of a friend formerly a resident of this county, now of Stanislaus county, will explain how some farmers are taking hold of the seed wheat problem:

"From copied exchanges in our papers from the Sacramento paper, I am informed that you are in

the same business that I am—the improvement of our seed wheat—and would like to compare notes with you. I have, or can procure, from 100 to 200 pounds of the following varieties of wheat: Australian from Oregon Blue Stem seed two years ago; Turkey Red from Kansas last season; Gold Coin from New Jersey last season. The last-named yielded eight sacks per acre last season.

"My brother-in-law and myself are buying Filipino wheat, also Black Don Kharko and Kubanka Durum or macaroni wheats. We have another variety for next season, but none to spare now.

"I would like to receive a list of the varieties you have, and it might be to our advantage to make a mutual exchange."

The Gold Coin wheat mentioned originated in Avon, New York. One bald head was found in a field of Delhi Mediterranean, a bearded, red-grain wheat. All the grains were planted and the next season yielded heads with long beards, short beards, some bald, some white and some red grains. The heads selected again were the bald and originated the Gold Coin.

The Harvester.—It is a mistake to say that the combined harvester fouls the land any more than a header or reaper. Land that is foul can, to a considerable extent, be eradicated by fire and careful cultivation. The only foul weeds that are of any injury to land are the wild mustard, radish, Russian and Napa thistle.

THE VINEYARD.

The Question of Stock and Product.

To the Editor:—I send you by mail to-day a bunch of grapes and two or three leaves from a vine grafted on Rupestris St. George stock. This vine was sent to me by one of the largest and most responsible nursery companies in the State as Black Hamburg. I think you will conclude on tasting the berries that it is not of that variety. I should be pleased to have you name the variety if you are able to do so. The vine has made a vigorous growth every season since it was planted and most of the foliage is to-day in perfect condition. As the shape of the bunch and color and shape of the berry indicate the Black Hamburg variety, it is possible you may conclude the quality has been affected by the character of the root. I believe it is the general impression among viticulturists in this State that resistant stocks have no influence on the quality of either wine or table grapes. However, as the works of several English pomologists contain frequent assertions that the quality of table grapes grown under glass has been affected by being grafted on wild vines, I thought it possible this may be an instance. Barron, Dr. Hogg and even Rivers have made statements of this kind. It has even been said that the quality of Gros Maroc has been so changed by grafting on a wild stock that the variety has not been recognized. These writers also claim that the quality of many table grapes is vastly improved by grafting on the Black Hamburg instead of growing them on their own roots. Your opinion on this matter will be much appreciated.—Amateur, San Francisco.

To the Editor:—The specimen of grapes sent by "Amateur" are certainly not Black Hamburg. They are probably either Refosco or Blue Portuguese, though it is difficult to be certain without better specimens of the leaves. With regard to the influence of the stock upon the grapes of grafted vines I think that no one denies that it exists. The only difference of opinion among practical and scientific men is as to the amount and kind of influence. There is no doubt that the stock influences the scion very appreciably in such characteristics as amount of crop, size of bunches and berries, time of ripening, vigor of growth, and all those characteristics which are influenced by soil and climate. In other words, the stock has a very distinct influence on the nutrition of the scion. That the stock can influence the scion in what may be called varietal or specific characteristics is very much in doubt. Most investigators deny that it is possible for the stock to communicate any of its specific characteristics, such as shape of leaves, or flavor of fruits. The characters, however, which can be influenced by merely changing the nutrition and environment of the plant are so great that it is sometimes very difficult even for the practiced viticulturist to recognize on first sight a variety growing in a locality where the conditions are very dissimilar to those of his own locality. The same is true to a smaller extent regarding varieties grafted on different stocks.

Practically, the influence of the stock on the scion is of great importance, for the qualities influenced are some of the most important from a practical point of view; for example, it is found that in nearly all conditions vines grafted upon Riparia bear larger crops of larger bunches and berries, which ripen from one to two weeks earlier than the same varieties grafted upon Rupestris, or growing on their own roots ungrafted. Frederic T. Bioletti.

University of California, Berkeley.

This relation of stock and scion is, as Prof. Bioletti says, somewhat in controversy, but it appears to us that wider effects are now being recognized than formerly, and that combinations of characters, contemplated by the term "graft hybrid," have now a better standing in pomological circles; and this being so, a greater variety of expectations may be indulged in by lay growers. Probably no one has seen more queer things resulting from grafting than has Mr. Luther Burkank, and he counts the stock as one of the very forceful factors in the environment of a variety. At the same time it is very fortunate that varieties on the large scale know how to behave and how to justify expectations. If it were not, our commercial propagation and planting would be too uncertain to justify investment.

Acariose -- A Red Leaf Disease of the Vine.

By Dr. H. Faes, Viticultural Expert, Lausanne, Switzerland. Translated by Prof. E. H. Twight of the University of California.

The red leaf disease, very similar to that found in some counties in California, has caused a great deal of fear in some vineyard districts of Switzerland. It was found, as the result of careful investigation by the writer, that in the young buds of the vine, early in the season, numerous minute larvæ of phytoptus were present. These caused a weakening of the vine from the very start of the spring growth. Later on the leaves turned a brownish red and some very minute phytopti were present. The first larvæ found in the spring seemed to be similar to those which are known to cause the disease erinose. Later in the season the four-legged larvæ are replaced by hexapode larvæ, and these, in turn, are transformed into octopode mites, which lay their eggs on the leaves. The four-legged come from the eggs and live on the leaves the balance of the season, causing erinose, then hibernate under the bark of the trunk and under old canes. Early in the spring they may be found under the scales of the buds for a short period, and the cycle of the hexapode and octopode form is started again.

It is seldom that erinose is present at the beginning of the season. It is possible that, after many generations through parthenogenesis, the larvæ lose the property of causing a deformation of the cells in the vine characteristic of erinose. It may be, also, that special climatic conditions favor the production either of phytoptus larvæ or the full grown mite.

The writer has obtained very good results in destroying the winter larvæ which carry the disease from one year to another through winter treatment with: (a) a 4% lysol solution; (b) 3% black soap and 1% carbolic acid; (c) by scalding. As an early spring treatment against the first batch of larvæ, a solution of 2% black soap and 1% tobacco juice gave the best results, and, for a summer treatment, sulphur.

Winter treatment is strongly recommended in the vineyard, as it destroys not only the larvæ of erinose, but also those of other insects, as well as many spores of dangerous fungi.

SHEEP AND WOOL.

The Angora Industry in California.

To the Editor:—It is now twenty years since your paper was made the official organ of the California Angora Goat Breeders' Association, and there has not a year passed in which you have not printed the report of the Association. These years have made the California Goat Association the oldest in the world, and the files of your paper contain a fairly accurate account of the growth of the Angora industry in the United States, for if it had not been for California breeders the Angora industry would not now be in the prosperous condition it is. We have had our ups and downs and a good many hard knocks, but we are gratified to say that we are still on the top, as the numerous prizes we won at the great St. Louis World's Fair, where we had the best flocks in the country and a few South Africans in competition, attest. At the California State Fair this year the sheep and Angora goat show was not very large, but there were some very fine specimens on exhibition. C. P. Bailey & Sons Co. of San Jose, Cal., secured most of the blue ribbons and some of the second prizes on their Angoras. I send you herewith an account of this year's meeting of the Angora Goat Breeders' Association held during the State Fair this year.

Correspondent.

California Angora Goat Breeders' Association Meeting.—The twentieth annual meeting of the California Angora Goat Breeders' Association was held in Sacramento, Thursday, September 7, 1905. President C. P. Bailey, who is temporarily in Europe, was absent for the first time since the organization of the Association. He had, however, remembered the Association, and after other business had been transacted Dr. Bailey read a letter which his father had sent from Bradford, England. This letter proved of much interest to those present and it was in part as follows: "I have been to-day to Bradford, the center of the mohair industry of the world, and to say that I have been royally treated would be putting it mildly. I had always pictured Bradford as a country town of a few thousand inhabitants, something on the order of one of our Eastern manufacturing centers. Imagine my surprise, then, to find a city of between 200,000 and 300,000 inhabitants, and a good many of these inhabitants employed in the big mohair mills. Of course there are some big worsted mills here too, but my time is taken up with the mohair merchants and the mohair mills.

The Mohair Merchant.—"Here in Bradford there are a set of mohair merchants who either have their agents in Constantinople and Cape Town, or who buy through agents located in these cities, and who then ship the mohair to their warehouses in Bradford, where it is stored until sold to the manufacturers. One of these mohair merchants is Mr. Amos Crabtree. Mr. Crabtree is recognized as an authority upon mohair, and he always has many thousands of pounds of "tiftick," as the Turks call it, in his warehouses. We spent the best part of a day going over bales of Turkish and South African hair, and when we had finished I felt that although I had seen some fine mohair, we had some clips just as good at home.

"There are many such merchants in Bradford, and the mill owners depend upon them for their supplies of the raw material. These mohair merchants buy the fiber direct from the local dealers in Constantinople or Cape Town, or from the growers in some instances. They are mostly men of high moral and financial standing, and the mills seem to count them an advantage rather than an added expense to the industry. To be sure they try to make a profit on their purchases, but they carry large stocks of mohair and the manufacturers only buy the particular grades they require. Some of the mills also carry large stocks of raw material, but they do not have to take the grades of mohair they do not use. A mill using short mohair buys only the quality it desires and the dealer holds the other grades of short and long hair for other mills. This system seems to work out well and the mills are not anxious to buy from outside parties.

The Manufacturer.—"There is a fine grey stone building right in the city of Bradford many stories high and employing between 2000 and 3000 persons, known as Mitchell Bros. Mohair Mill. Mr. Mitchell showed me from the top to the bottom and I enjoyed every minute of the time. The principal business of this mill, and it is an exclusive mohair mill, is to spin yarns to be used by other manufacturers. There are many users of mohair in Bradford who buy the yarn and never use a pound of the raw material. It is easier for them to buy a certain sized yarn of known quality than to buy the raw material and have some waste stuff. But it is not Bradford manufacturers alone who buy of Mitchell Bros.—in fact, their principal business is in France, Germany and Holland. The thought suggests itself that we might spin the mohair product of the Pacific coast in San Francisco or some other central point and then sell the yarn to the manufacturers.

"But there are other mills in and around Bradford which spin their own yarn and make dress goods, plushes, etc. One of the largest of these (it makes a whole town), and one of which I have often read, is the old Sir Titus Salt, Bart., mill located at Saltair, and now owned and operated by Mr. Roberts and his son. It is about 7 miles from Bradford, situated on the Midland Railroad, and has a canal from Liverpool running through it. It is an immense affair, and practically the whole town of Saltair (a town of about 7000) is employed in or dependent upon the mill for its existence. To describe this mill in detail would tire you I fear, but I hope to report more when I return. Suffice it to say that it has one of the grandest spinning rooms I have ever seen. It is about 500 feet long, paved with cement and a blaze of light. It is absolutely fire proof and it makes a goat breeder feel that he will have a market for his product forever."

At Our State Fair.—The next matter discussed, after the reading of Mr. Bailey's letter, was the annual State Fair meet. California has just opened a fine new fair grounds, and when it is finished it will be the equal of any fair grounds in the country. The Angora breeders should make a more extensive show of goats at this fair, and although some breeders expressed the desire that the annual California show be held in San Francisco, and that Oregon, New Mexico, Arizona and Texas should be invited to compete, yet the plan was left incomplete.

After the election of officers the meeting adjourned to meet again next year.

THE POULTRY YARD.

Temperature in Brooders.

Mr. F. W. Wilson of Santa Rosa writes to the Petaluma Poultry Journal about his experience with different degrees of heat in his brooders:

Still an Experimenter.—My experience with poultry up to two years ago was with from 100 to 200 head raised yearly with hens in the State of Pennsylvania. Never looked at an incubator until November, 1903. Raised some 800 during the season of 1904. This article is on this year's hatch. My incubators are 400 eggs each; have two. For various reasons I will call one No. 1 and the other No. 2. All chicks

when taken from the incubators were divided up equally and put into four brooders. This was done with each of the six hatches made this year. The brooders are the "Natural Hen." In addition to these, I have five home-made brooders 30x30 inches; they are bottom and top heat. Also one brooder 2x8 feet, with hot water pipe heating apparatus. My baby chicks in no case are put in any but the "Natural Hen" until three weeks old. Then they are transferred to the others, and by that time I use but little, if any, artificial heat.

For the "Natural Hen" brooder I bought fixtures and put in a box 36x40 inches and 16 inches deep, with two ventilator holes 5 inches in diameter near top of box, open or rather covered with wire netting. The heat is supplied in center. Holes over a small water tank admit moist air to box. Heat is radiated from top of hover and from side of heater, which is round and 10 inches in diameter. Hover is round, 30 inches across, with curtain all around edge. The bottom contains 2 inches of sand and 1 inch of fine cut straw. I make this lengthy description that a person knowing the style of brooder will be able better to criticise my account by having in his mind's eye the kind of conditions these chicks were subjected to during these experiments. I can scarcely call them anything else, although they did fairly well at that.

Heat in Brooder.—I think that in some cases that it is all right to cool chicks to 70° during the first day in brooders, in others a mistake. The hatching surely has something to do with it, also the style of brooder used. If the brooder is like some of mine—that when it is 90° one place it is the same all over, and they can't get away from it; or 60°, and they can't get warm except by huddling; then I would try and have a temperature that they would be comfortable in, be it 70°, 80° or 90°. In my experience, some chicks require one temperature during the first week and another hatch different treatment, depending on the manner of hatching, health of parents and outside weather conditions. In the brooders into which I put my infants they can, if they find a temperature too hot near the center, come out to the edge of curtain and cool off; or, if they get cool, they can get warm by getting closer to the heat supply. This morning the temperature in my brooder house was 50°, while it was 80° in the brooder close to the center under hover and about 65° outside of the hover. When let into their 5x10 pen the chicks ran, flapped their wings and went to work at once for their breakfast in the cut straw.

It strikes me that a hen does not have her body cool down to 70° in order to harden her brood. When they have been out from under her long enough to get chilled, they hike for a warm place of about 103°, and it doesn't seem to hurt them a bit.

Several Hatches.—The following hatches are numbered from 1 to 5. Have lost the data as to the number of fertile eggs, but have the percentage hatched of fertile eggs. No. 1, machine hatched, 1st, 69%; 2nd, 45%; 3rd, 43%; 4th, 60%; 5th, 84%. No. 2, machine hatched, 1st, 65%; 2nd, 80%; 3rd, 89%; 4th, 85%; 5th, 85%. This was five straight hatches in succession.

No. 1.—Eggs set, 768; chicks hatched, 344; chicks raised, 315; date hatched, Jan. 25, 1905.

No. 2.—Eggs set, 765; chicks hatched, 500; chicks raised, 380; Feb. 16, 1905.

No. 3.—Eggs set, 800; chicks hatched, 375; chicks raised, 275; March 12, 1905.

No. 4.—Eggs set, 710; chicks hatched, 375; chicks raised, 375; April 5, 1905.

No. 5.—Eggs set, 695; chicks hatched, 490; chicks raised, 375; April 28, 1905.

Total eggs set, 3738; eggs hatched, 2122; chicks raised, 1720.

In above you will note the poor per cent hatch of No. 1 machine except in the fifth hatch, at which time I shut all ventilation holes and cut new ones to suit my fancy. The result was an 84% hatch. The eggs used were all bought from one man, except hatch No. 3; of these 100 were shipped and 75 proved infertile. The first hatch of No. 2 was poor. I noticed all along that there was an awful lot of gas in the machine. Did not think I would get a chick from it, but I did get 169. On disconnecting the heater, I found that the flue from the lamp ran direct into the machine, where it should have connected with another one leading to the outside of the machine.

During the first hatch the heat was kept down to 101° and 102° most of the time. Eggs were left out to cool and forgotten for half a day and the machine was a long time getting up heat. I have always called this my cool hatch. There were only one or two chicks out on the twenty-first day. The most of them hatched on the twenty-third day and some of them on the twenty-fourth and twenty-fifth day. I concluded to have the brooder 70°. I did so after keeping the chicks two days in boxes, and they did fine. At four weeks they were on racks with no heat. There is no stove in my brooder house. These chicks feathered the quickest, roosted the soonest and laid the earliest of any brood of the five. The pullets were commencing to lay July 1st or a little earlier. They were fine large Leghorns. Well, that ought to be proof of the 70° proposition; but I am not ready to say so yet until I try some more. No. 2 hatch was run at a high temperature all through; eggs were cooled hardly any. They were all out by the evening of the twentieth day. These chicks would have none of my 70°. My, how they yapped and bunched up! They were not contented until the heat had got to 90°. Then they thanked me by giving that contented chirp and went to sleep. I tried to cool these chicks day after day and lost quite a few in the operation, but always had to give in by allowing more heat. Did not get them away from artificial heat until aged six weeks. They were hard to teach to roost, but have, with as much care as I could give them, turned out to be a fine lot of birds. The third lot were hatched at normal heat, but were sprinkled with water the last day before hatching. They were slimy when hatching and many were drowned in the shell. The brooder was at 80° at first. Had them in cool brooders at 4½ weeks. They have done well ever since taken from brooder houses and are laying fairly well now. One thing I forgot to mention: When this lot was about a week old I gave too much beef scraps to them and I lost a number from acute bowel trouble, the cæcum in each post mortem being gorged with black blood. The droppings were sometimes pure blood. Last year the same thing happened, when I lost 200 in a week. This was caused by eating fresh lime.

No. 4 was hatched normal, but did not get as good care as the other hatches. The heat was kept at near 80° at first. The same may be said of No. 5, although by this time it was quite warm, and little, if any, heat was used during the day. The latter two hatches have not developed near as fast as the former ones. Neither did they get the care, for by the time the fifth hatch was out I had 1800 or 1900 chicks on hand of five different ages, and it kept me moving some.

At this writing I have my sixth hatch of 301 chicks, which came off on the 9th. They were hatched with a very even heat; cooled plenty; no moisture used; came out on the twenty-first day; did not stick to shell; but only 65% of fertile eggs hatched. These are being brooded at 80° at center of machine. Of the 301 have lost seven in the eight days. I. F. Hiner, near my place, has raised practically 100% of chicks of a 970 hatch in February by using the 70° cooling method. They are fine birds. He used a stove in the house part of the time beside his hot water pipe brooders.

THE IRRIGATOR.

The Rational Use of Water in Irrigation.

From a paper by Dr. John A. Widtsoe of Utah, at the Twelfth National Irrigation Congress.

In these times, when gigantic reservoirs and canals are being constructed by our great Government, we are likely to forget that the development of irrigation in this country lies not alone along engineering lines, but depends, to an equal degree, upon the manner in which the farmer uses the water in the production of crops. The building of canals and reservoirs has been greatly improved during the last fifty years. All the skill of the engineer has been bent to produce irrigation structures that approach perfection. Meanwhile, the farmer has been left to develop his methods, unaided by expert advice or assistance; and, in fact, the methods employed by the farmer of to-day, in producing crops by irrigation, are very little in advance of those that were introduced during the first few years after the Mormons entered Salt Lake valley.

The projected storage of the waters which now run to waste in the streams and rivers of the great West will undoubtedly increase the irrigated area many times; but to students of this subject it appears equally true that, if the water which is already diverted into irrigation canals, should be used in a rational manner, the irrigated area might be doubled, trebled or even quadrupled without the building of another reservoir or canal. By the rational use, I mean such a use as that with a given amount of water, will produce the largest yield of crops of the highest quality and with the least injury to the soil. To make such rational use of water the farmer requires a knowledge of the relation which exists between the plant and the soil and the water. It is unfortunate that investigations having such knowledge in view have only been undertaking during the last few years. However, many results are already available with which the irrigator of the immediate future must familiarize himself and which he must apply in his practice of irrigation if he desires to obtain the greatest profit from the land and water at his disposal.

Perhaps the most prevalent idea in the irrigated sections of this country is that plants do best and yield most heavily when they receive very abundant irrigation. In my experience, I have yet failed to find one farmer who refused to apply to his fields all the water that he could possibly obtain, though in many cases it was manifest that the large amounts of water led to injurious over-irrigation. Plants respond very readily, in yield and quality, to the water applied to the soil, but in reality, they can get along with very small amounts of water, and in many respects do better when the amount applied is below rather than above the best. In fact, the irrigation farmer who is able to control the amount of water applied to plants, controls one of the most important factors of plant life. The air, the sunshine and the soil, the farmer must largely accept as they exist, for he is unable to modify them materially; but the fourth great factor in plant growth, water, is completely under his control, and by judicious irrigation the farmer may obtain a marvelous control over the plant kingdom. In this respect agriculture in an irrigated section is greatly superior to the agriculture in districts of abundant rainfall.

With respect to this control, note the following reliable results selected almost at random from a great number of experiments on the relation of crops and soils to water, conducted by the Utah Experiment Station. The expression, inches of water, is to be understood as meaning the depth to which the fields would have been covered had all the water been applied at one time.

One season on a typical western soil, 5 inches of water produced 33 bushels of wheat per acre; 10 inches of water produced 40 bushels. Adding more than 20 inches of water to the field did not increase, appreciably, the yield of grain. In the case of the wheat plant, then, the increase of the amount of water increases the yield of grain up to about 15 inches, but a further application tends to diminish the yield. When it is considered that the depth of water applied to the wheat, over a very large area of irrigated section, amounts to 30 or more inches annually, it will be understood what a loss in wheat alone occurs year after year through the misuse of too large a use of water.

With oats the variation is somewhat similar. Five inches of water in one set of experiments yielded about 58 bushels of oats per acre; 10 inches yielded about the same amount, though the increased quantity of water increased the weight of straw. With 15 inches, 70 bushels were obtained; with 20 inches, 86 bushels; and with 30 inches, 82 bushels were obtained. Covering the land with more than 30 inches of water diminished the yield of oats decidedly. About 20 inches is, therefore, the best amount of water for oats; yet throughout the irrigated West 30 inches or more are generally used, in the production of oats—and thus again the wasteful use of water is emphasized.

It is generally true, with all the ordinary crops grown in the Western States, that increasing the amount of water increases the yield up to a certain point, after which an increase of water causes a decrease in the yield. Not all the crops are alike in this respect, however. Some crops, because of their nature—leaf surface, root system, etc.—find 10 inches of water about right for the season's growth. Other plants, because of their different natures, find 15 inches or 20 or 25 to 30 inches the best. Now, the farmer in an irrigated section should know the water requirements of the different plants that he grows as thoroughly as he knows the soil of his farm, his water right or other matters upon which his success as a farmer depends. Not all plants decrease in yield after a certain amount of water has been applied. Potatoes appear to be a crop the yield of which increases continually if water is applied, up to the limit of the practicable application of water. To illustrate: In one set of experiments 7½ inches of water produced 160 bushels of potatoes; 15 inches, 233 bushels; 30 inches, 274 bushels, and 71 inches, 315 bushels. In this series, the increase is constant with the increase in irrigation water. This illustrates the necessity on the part of the farmer knowing, thoroughly, the natures of the plants with which he deals.

It may be noted in reviewing the yields of wheat, oats and potatoes just considered, that the value of the first few inches of water applied is much greater than that of the later applications. For instance: 5 inches of water produced about 33 bushels of wheat, or about 6.6 bushels per inch; 15 inches of water produced about 48 bushels of wheat, or about 3.2 bushels per inch of water; while 20 inches of water produced 40 bushels of wheat, or only 2 bushels per inch. The value of the first 5 inches of water applied to wheat, therefore, is more than three times as much as the value of the last 5 inches, in a total depth of 20 inches. Similar results may be observed in the case of oats. Five inches of water produced 58 bushels of oats, or 12 bushels per inch; while 20 inches of water produced 86 bushels of oats, which is less than 5 bushels per inch of water. The difference is certainly very striking. Even in the case of potatoes, the yield of which increased steadily with the increase in irrigation water, the same fact holds. Seven and one-half inches of water produced 160 bushels of potatoes, or about 22 bushels per inch; while 30 inches of water produced 274 bushels of potatoes, which is only about 9 bushels per inch. Corn, alfalfa, the various grasses, sugar beets, vegetables and all other crops show similar results; namely, that the value of water is highest when it is used sparingly and carefully; that the value of water is lowest when it is applied liberally and carelessly.

With this generalization in mind note how these results may be viewed in their relation to the increase of the irrigated area.

According to the investigations of the Department of Agriculture, under the direction of Dr. Mead and his associates, 30 inches of water or more are used in the majority of places in the irrigated section for the production of crops. Let us apply the varying value of water as just explained to the economical or

rational use of water. If the 30 acre inches be spread over 6 acres of wheat so that the whole area of 6 acres will be covered with water to a depth of 5 inches, each acre will yield 32½ bushels of grain, or a total of 195 bushels. If the same amount of water be spread over four acres, that is to a depth of 7½ inches, the total yield of grain will be 165 bushels. Spread over three acres to a depth of 10 inches, the same amount of water will yield 118 bushels. Spread over two acres to a depth of 15 inches, the total yield will be 95 bushels, and spread over one acre to a depth of 30 inches, the yield will be 42 bushels. It may thus be seen that in the case of wheat the total amount of grain produced by thirty acre inches of water may be increased from 42 bushels to 195 bushels by spreading the water over more or less ground. Certainly the nearly five-fold increase of grain thus made possible will more than pay the farmer for the labor of handling six acres of land instead of one; and of higher importance, by using the water rationally, the irrigated wheat area may profitably be increased four or five times without building another reservoir or canal.

Agricultural Review.

Butte.

PROFITS IN FIGS. — Oroville Register: W. H. McNamee of Thermalito tells us he thinks there is more profit in figs, taking one year with another, than in any other fruit. He has nine acres of White Adriatic figs, and, while the price this year is low, he will get about $125 an acre. He sells the fruit to Rosenberg Bros. of Yuba City and does not have any of the trouble of boxing or preparing the figs. They are allowed to drop from the trees when dry enough and are then picked up and placed in sacks and shipped. He has so far shipped twenty tons of the dried fruit and will have about seven tons yet to ship. He irrigates his trees three times in the spring and early summer. The trees are planted 28 feet apart, giving sixty-eight trees to the acre.

Fresno.

LEMON GROWERS MAKE GOOD MONEY.—Fresno Tribune, Sept. 28: N.W. Moodey, who won a bronze medal at the St. Louis Exposition for citrus display, says that he will have about 7000 boxes of lemons from twenty acres, and are of the finest grade ever grown in Fresno county. J. H. Hudson, who has ten acres adjoining, estimates about 3200 boxes, and of the same variety as his neighbor's. Fulton G. Berry thought that he would gather about 3000 boxes. J. View, another lemon grower in the same locality, has picked from five acres over 1000 boxes and has more on the trees. The lemon business this year is the best that the growers of Fresno county have ever seen. Lemons shipped from the abovementioned orchards brought $6 to $8 per box in Chicago and New York, by auction. The price here in Fresno is $4.50 to $6 per box. Expense for a 10-acre orchard is about $800 a year, and this includes the water right, help hire and other expenses pertaining to the care of lemons. The principal cause of high prices in lemons this year is the failure of the foreign crops, and of the domestic supply in some localities.

Kings.

CUT ON BARBED WIRE. — Hanford Journal, Sept. 29: William Miller, the oldest son of Felix Miller of Visalia, was mangled a few miles north of that city. The animal he was riding was skittish and took fright at a passing automobile. Miller hit the animal and the horse tried to run. He shied into the barbed wire fence and for a distance of 16 feet the horse pressed the leg of Miller against the wire, while the former was running at full speed. Miller's left leg was horribly cut and torn through the fleshy part of the muscles at the thigh to the bone and the bone was scratched to a certain extent. Also there were a few cuts below this and the left foot was torn across the top, the boot being torn away like so much paper. The right arm was also cut and torn for some distance, which made an ugly wound. When Dr. Weaver dressed the injury he found pieces of leather from the romale, pieces of tobacco from the pocket of the young man, and the boy's pocket knife, all imbedded in the wound and sticking between the torn fragments of muscle.

SEED BIG ACREAGE TO GRAIN.—Lemoore Leader, Sept. 30: P. P. Putnam is getting things in readiness for sowing six sections to grain on land that he and others have rented near the mouth of Kings river. They have put in a 20-inch pump for raising the water out of a deep hole in the river. Levees and checks will be built and the land irrigated with the water from this plant and then it will be plowed and seeded. The Hanford Implement Co. is now rigging up four or five disc plows, each with four discs, and these will be pulled with a large traction engine.

IMPROVEMENTS AT HIS CHICKEN RANCH.—Hanford Journal, Oct. 3: Howard R. Lane, proprietor of the Oxford poultry farm, states that his chickens are doing nicely. He hatched about 1400 young roosters this spring and has sold all but a few of them. He also states that he had also been doing some improvement work about his chicken pens, in the way of piping water into each pen. Heretofore he has had to carry water to each of the pens every day and this new system is much more convenient. In making the improvement 1450 feet of pipe were used.

Merced.

ATWATER CANNERY.—Merced County Sun, Sept. 29: A stock company is being organized for the purpose of establishing a cannery near Atwater. The project is being promoted by Walter Casad and he reports $6000 worth of stock subscribed already.

Placer.

SHIPPING FRUIT GREEN.—Placer Herald, Sept. 30: For some strange reason there is a perfect mania for shipping Salways green. This should not be, as they are a good carrier and should certainly be allowed to reach a reasonable degree of maturity, both as a matter of profit here and justice to the consumer. Growers should understand and remember that a peach 2 inches in diameter has eight times the bulk of a peach 1 inch in diameter and that they are therefore losing money very rapidly when they market their peaches in a semi-developed condition. An extra 5 or 10 cents a box does not at all offset this loss in bulk. The most important feature of the case, however, is the effect on the consumer; if we persistently offer him trash to eat we must expect scant enthusiasm on his part and small offers of money for our goods.

Sacramento.

BEAN BUYERS PLENTIFUL. — Isleton dispatch to Sacramento Union, Sept. 30: Bean buyers are numerous here at present. Not many sales are being made. The growers think prices will be higher. It is hard to predict the damage if rain comes soon.

FOLSOM GRAPES IN DEMAND.—Folsom dispatch to Sacramento Union, Oct. 1: Grapes are being shipped from here now in great quantities, many wagon loads of both table and wine grapes being brought in from the surrounding country daily for shipment. Reports of the sales in the East are to the effect that Eastern grapes are bringing good prices and the growers are now feeling much better than they did in the early part of the season, when prospects were not very bright. Good prices are being paid, too, for wine grapes, most of which are shipped to the California winery at Sacramento.

San Diego.

GRAPE SHIPMENTS.—Advocate, Sept. 29: The grape shipments from the Escondido vineyard were concluded Thursday morning when the last shipment was made. The total express shipments from the one vineyard alone during the month of September has been 530,775 pounds or 265 tons of fine table grapes. Besides the grapes from the company there has been a large number of shipments from small vineyards, of which no account has been taken in the above statement. With those figured in the grape shipments would aggregate nearly 300 tons so far this season.

San Joaquin.

WOODBRIDGE WINERY.—Lodi Sentinel, Sept. 30: The Woodbridge Vineyard Association is now busily engaged in running its winery to the fullest capacity and from 90 to 100 tons of grapes are being crushed daily. To attend to this work six men are given steady employment. There are represented in the membership 1000 acres of bearing vines, but not all of this acreage is in full bearing. By next season all the vines will be matured, and then the vintage of the winery will be considerably in excess of this season's. Only dry wines are being made so far this year, but later on the wine makers will make sweet wines. Dry wine making in northern San Joaquin is something of an innovation, for in past years some experts have maintained that it was impossible to make this product here, Napa, Sonoma and other dry wine districts claiming the exclusive honor. Adolph Bauer successfully manufactured a superior grade of dry wine here some time ago, and now its making is quite general in the three wineries of northern San Joaquin. Wine making is now in full force and the season is about half gone. Altogether it is a successful season for growers. The crop is not equal in quantity or quality to that of last year, but prices are higher, and the growers have reason to feel well pleased.

GOOD PRICES FOR CALIFORNIA FRUIT. —Lodi special to Sacramento Bee, Sept. 27: Lodi Tokays continue to bring high prices in the Eastern markets, and big shipments continue unabated. In New York J. A. Anderson, the independent shipper, disposed of two cars, one for $1794 and the other for $1864. The local manager of the California Fruit Exchange sold a car at Boston for $1664, and one at Chicago for $1654. These prices will net the Lodi growers about $1.10 per crate. Wine grapes are also commanding fancy prices now. The wineries are paying $13 per ton for black grapes, but outside buyers, who ship to the small wineries about the bay, are paying as high as $16 per ton, and furnish boxes free. Almonds have been a splendid crop here this season, and the growers have made big money. The local price is 12 to 13 cents a pound.

CASH IS PAID FOR WINE GRAPES.—Stockton Independent: The West wineries at Stockton and Lodi have hitherto made three payments for grapes delivered, one-third cash, one-third on the 1st of February and one-third the 1st of the following June, but announcement is now made that cash will be paid for all deliveries from this time to close of the season, which will be about the middle of October. As the West wineries will crush about 10,000 tons of grapes grown in San Joaquin county the present season, the cash payments to home people will amount to upwards of $120,000 for current year. For three seasons grapes have been bought on deferred payments because it called for the use of a large amount of money to handle the crop, but arrangements have been made to make cash payments this year and growers will be able to square their accounts immediately after deliveries and clean up their year's work at once. The wineries are paying $13 a ton for Zinfandels and $11.50 for Mission grapes in any quantities delivered at Stockton or Lodi. The higher prices paid by some commission men are for grapes in boxes, but none of the wineries are paying above the prices quoted. Grape growers are now busy with shipping table grapes and are leaving their wine grapes for late handling. Table grapes are bringing from $20 to $40 a ton and the season will last about two weeks longer, when deliveries of wine grapes will be made, and from the 1st to 15th of October the bulk of the crops will be delivered to the wineries and their rush season will be the first two weeks of October.

GRASSHOPPERS SPOILED WATERMELONS. — Lodi Sentinel, Sept. 28: F. Christesen, who with Ed Powers planted 160 acres of land in the Manteca district to watermelons, is home after spending the season there. The experiment of raising melons in that district was not a success. Grasshoppers, according to Mr. Christesen, devastated the vines. He used arsenic on the vines, and this poison, in a measure, checked the disastrous pillage of the hoppers. On the whole tract of 160 acres but eighty cars were shipped.

Solano.

PREPARING ALMONDS FOR MARKET.—Solano County Courier, Sept. 28: Monday the J. K. Armsby Company started up the machinery recently installed and is now busily engaged in preparing for market the large crop of almonds the company purchased in this part of the State. The new machinery consists of a huller and a separator and cleaner. A 15 H. P. electric motor furnishes the motive power. The machinery hulls and cleans the almonds in a first-class manner. Two long chutes carry the dust and dirt out of the building, so that the operation of the plant is dustless and clean. This is practically a new industry for Suisun.

Sonoma.

BUILDING HOP KILNS.—Press-Democrat, Sept. 30: John L. Peterson, the hop grower, is having built at his hop yard on Russian river, near Littons, three large stone hop kilns, whose dimensions are 60x96 feet. The walls of stone will be 28 feet high and the roof will be of corrugated iron. Mr. Peterson will have fireproof kilns. The work is being done now so as to have the kilns in readiness for next season's crop.

Stanislaus.

CERES CREAMERY TO BE REBUILT.—Stockton Independent, Sept. 30: The Ceres Co-operative Creamery, burned last week at Ceres entailing a loss of $7000, is to be rebuilt within the next sixty days. Orders have been placed for separators, churns and all the other contrivances necessary to the output of creamery products to replace those destroyed by the fire. The new creamery will be nearly double the capacity of the old one, and be a material factor in developing the dairying interests in that portion of the valley.

Tulare.

MONEY IN ONIONS.—Alto Advocate, Sept. 29: George Bence, who is engaged in farming on a portion of the old Buckman place, 3 miles north of Exeter, raised 200 sacks of Yellow Danver onions on half an acre of ground this season, a sample of which may be seen at the rooms of the Tulare County Board of Trade in Visalia. The sacks will average about 100 pounds each, and Mr. Bence received not less than 1½c per pound for the onions, as they have been sold at retail by the storekeepers at Exeter for 2c per pound, so his returns from that half acre of onions amounted to $300.

Ventura.

LIMA BEAN HARVEST.—Oxnard Courier: For the past week and a half hundreds of lima bean cutters have been at work throughout the valley, and on Monday three different threshers were started in as many different parts of the county on the first cutting. It is reported that the beans are yet a trifle green for threshing, but with the continued bright sunshine they should be in fine shape by the first of next week. Of the twelve threshers that will operate in the valley during the fall, six are already in commission, viz: The Donlon Bros., Petit Bros., O. A. Wadleigh, M. V. Carr, Dozier Lewis and L. Maulhardt. Estimates vary as to the output, but there are predictions of from 350,000 to 400,000 bags. The biggest crop on record so far is 500,000 bags. It is expected that the price will be good this year, also, as all the old crop has been cleaned up. Many of the beans have been already contracted at 3 cents a pound, but most growers are holding off, expecting even a higher price than this. Lima bean raising is very profitable at 3 cents, but there have been seasons when they were sold as high as 5½ cents.

Yuba.

BEAN CROP BELOW NORMAL.—Marysville Democrat, Sept. 30: The bean harvest is in full swing and the condition of the crop can be pretty fairly stated. In District 70 the harvest is nearing its finish and the crop turns out somewhat less than normal. Outside District 70 the crop is only fair. These conditions prevail in other districts also, so it is evident there will be a shortage of Boston's favorite delicacy in this part of the State. Many of the pods on the vines look as if they contained six beans, but when opened are found to contain only four or five. Outside of District 70 the harvest has been in progress only a few days, but the condition of the crop is fully established.

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THE LAWRENCE-WILLIAMS CO., Cleveland, O.

The Home Circle.

A Watch in the Night.

In the long, dim night, if you cannot sleep,
Don't fall to counting the dreamland sheep.
They follow their leader fast and fain
Over the hedge in a dizzy train,
But they have no power to drive away
The haunting ghosts of the weary day.

Cease, if you can, from adding lines
Of curtseying figures—sevens, nines,
Sixes, elevens—till by and by,
Like a cloud of notes in a summer sky,
You could brush them away, but back they'd creep,
And never, never would bring you sleep.

And, whoever may bid you, do not say
The verses you learned in your childhood's day,
Over and over, until full fain
You wish you were merely a child again,
With a head that at touch of the pillow knew
The tender dropping of slumber's dew.

But, dear, just think of the forest pool
Where the ferns stand close on the edges cool,
Where the whispering willows bend and lave,
And the lisp is heard of the rippling wave.
Hark to the wind in the pine tree tops,
To the syllabled murmur in grove and copse;
Shutting your eyes, drift out to sea,
Where the stars look down and the sails float free,
And the waters will croon you a drowsy tune,
And the lulling of slumber will reach you soon.

Or think, if you will, of the sweet green grass,
Acres and acres, where no feet pass,
Of daisies and clover, that over and over
The zephyrs kiss with the heart of a lover;
Of dunes that are billowy 'neath the sun,
Where the skylark stoops when his song is done.

Or ever you know it, unaware,
The angel of sleep will find you there,
Will sift his poppies above your head,
And rock you as if in a cradle bed,
And, hushing and hiding, will bury you deep
In the wonderful, beautiful cave of sleep,
And you'll never wake till the new day's dawn,
When the watch of the dark, dull night is gone. —Margaret E. Sangster.

Once in a While.

Once in a while the sun shines out,
And the arching skies are a perfect blue;
Once in a while 'mid clouds of doubt
Hope's brightest stars come peeping through.
Our paths lead down by the meadows fair,
Where the sweetest blossoms nod and smile,
And we lay aside our cross of care,
Once in a while.

Once in a while within our own
We clasp the hand of a steadfast friend;
Once in a while we hear a tone
Of love with the heart's own voice to blend;
And the dearest of all our dreams come true,
And on life's way is a golden mile,
Each thirsting flower is kissed with dew
Once in a while.

Once in a while in the desert sand
We find a spot of the fairest green;
Once in a while from where we stand
The hills of paradise are seen;
And a perfect joy in our hearts we hold,
A joy that the world cannot defile;
We trade earth's dross for the purest gold,
Once in a while.

—Nixon Waterman in Boston Beacon.

Young Atherley's Luck.

The morning sun lay warm and clear after the rain of the night before, and young Atherley, as his horse loped easily along the wide range, sang aloud for very joy of light-heartedness. Out here, away from cities and crowds, how good life seemed.

The train was in, and Atherley hurried around the corner, then halted suddenly, dazzled by the vision which confronted him. On the lower steps of a car near the middle of the train stood a girl, her fair hair blowing in the wind, her hands full of pink roses, her eyes gazing straight into his. For a second neither moved. Then, as a voice from within called "Marion," the girl, with a quick flush, turned up the steps, and Atherley, stricken with the consciousness of his dusty "chaps," huge spurs and sombrero, slipped back. He had quite forgotten his letter. The engine gave a preliminary snort, the conductor yelled "All aboard!" but Atherley still stood motionless, his eyes fixed on the car wherein she had disappeared. As the slow length of train began to move the girl slipped back to the platform for a moment, and on the ground, almost at Atherley's feet, fell a pink rose. To spring forward, seize the flower, then swing aboard the last car as it passed, was to Atherley but the work of another moment. Before he had fairly realized it he was on the train and speeding eastward as fast as steam could carry him.

Practical thoughts forced a way, and his first act was to take account of stock.

"Jim will take the horse back," he reasoned. It's all right. Luckily I have just about enough for my ticket to New York." Somehow he had decided that she lived in New York. "And as for meals. Well, who knows what may turn up?" with cheerful optimism.

At the next stop he sneaked forward to the smoking car and sat down to think things over. She was certainly a mighty pretty girl! Atherley, feeling for the rose hidden in his breast pocket, concluded that he would probably not regret his action.

"But I've got to get busy on the food question."

There were three or four other men in the car, the younger ones chatting together, and another, rather older, reading in a corner. All eyed him curiously, and Atherley had an inspiration. If he worked them right, amused them, told them queer experiences, they might supply him with food and drink, and as for cigars, well, he must husband those he had carefully. In pursuance of this idea he moved nearer, and soon held the group enthralled with his breezy frankness.

"So you really just jumped on the train and came," asked an older man at length, when Billy had grown aweary of his talk and moved away, "and for no other reason than that you wanted to see the world?" Atherley laughed rather shamefacedly.

"That's what I told those fellows. But I don't mind telling you the truth. It was—it was on account of a girl," he said, haltingly. The older man's lips twitched.

"A girl! How so?"

"I saw her on the car step," confessed Atherley. "And—and I liked her," he ended lamely, not even to himself did he care to mention the rose. "I wonder if you have seen her?" he added eagerly. "She had on some kind of a blue skirt, with a white waist, and carried some roses. They called her 'Marion.'"

The older man started.

"Marion!" he exclaimed, "why, that's my daughter," unthinkingly. Then he stopped, rather annoyed. A youg ranchman, no matter how charming and gentlemanly, was hardly a person to be presented to the carefully guarded Marion. But Atherley was too absorbed to notice the hesitation.

"Your daughter!" he cried. "Really your daughter, oh, I say, what luck! That will save me an awful lot of time and trouble. I expected the deuce of a job in locating her. Though I knew that I should do it in the end," he added confidently. "Do you mind telling me your name?"

"My name?" divided between indignation and mirth. "I am James Arbuthnot," he declared rather pompously. But Atherley was clearly unimpressed.

"Better and better," he cried; "I always was a lucky chap," joyously. The elder man leaned back and stared at him.

"My dear young man," began he, in his most formal manner, "I think we must understand each other. I certainly fail to see where the luck comes in." Atherley, staring in his turn, became suddenly enlightened.

"Of course. You mean that you don't know me," he cried. "Oh, that's all right," easily. "I've heard dad speak of you hundreds of times. I'm Billy Atherley and I've just been out looking up some properties in the West."

The older man's brow cleared somehow.

"Not William H. Atherley's son?" Atherley nodded.

"The same. So now won't you introduce me to your daughter?" wistfully. "It would save such a lot of time."

Arbuthnot, his gray eyes twinkling, looked at the young fellow quizzically.

"If you are much like your father, and I think you are, you would be hardly apt to wait long for my services, he remarked jocosely. "Come along, then. All I ask of you is please not to get married before we reach New York." The tone strove to be stern, but young Atherley laughed happily.

"I make no promises," he declared, with gay defiance. "Oh, here, hold on a moment," as a sudden recollection of his unmailed letter recurred to him. Pulling out the envelope he tore it into fragments, letting the pieces float out of the open window.

"It was to say that I wasn't coming home," he explained. "I will telegraph from Chicago. Now, if you are ready." —A. M. D. Ogden.

The Song of Esau.

Exult in thy stolen blessing, brother of smooth, white skin,
I grudge thee not the birth-right that thou sold thy soul to win;

I envy thee not thy living under mine own roof tree;
What has the life of the townsman to hold for a man like me?

Under thy sordid tent-roof there shalt thou spend thy days,
Smug in thy borrowed dwelling, rich in the flocks ye raise;

Out in the stretching desert where the plains lie still and old,
The sky shall be my roof-tree,—the sands shall be my gold.

Thou who with greedy fingers cling to thy flocks and lands,
What shalt thou know of the riches that come by the work of hands?

What shalt thou know of the hunger that is one of the hunter's spoils;
The zest for the daily ration; the sleep of the man who toils?

Bound, by the ties of kinship, to the one accustomed place,
Thou never shalt feel the challenge of the rain upon thy face;

Tied by the greed of getting, held by thy wife and child,
Thou never shalt hear the voices that call from the wind-swept wild.

Housed in thy smothered dwelling, as the townsfolk nightly lie,
What shalt thou know of the splendor of the wonderful, flame-lit sky;

The breath of the wind in the forest; the tang of the salty sea?
This is the wealth of the huntsman; this is the wealth for me.

He knows who has learned the secret of mountain, and mead, and moor,
That yours is the want of the rich man, mine is the wealth of the poor.

Exult in thy stolen blessing, brother of smooth, white skin,
I won in the act of losing; thou lost what thou sought to win.

—M. K. Hurd, in Madame.

Older the Better.

"Yes," said the old man to his young visitor, "I am proud of my girls, and would like to see them comfortably married; and as I have made a little money they will not go penniless to their husbands. There is Mary, 25 years old, and a really good girl. I shall give her $1000 when she marries. Then comes Bet, who won't see 35 again, and I shall give her $3000. And the man who takes Eliza, who is 40, will have $5000 with her."

The young man reflected a moment and then inquired: "You haven't one about 50, have you?"

Domestic Hints.

Blackberry Jam.—Put the blackberries into a porcelain lined kettle, stand them over a moderate fire until thoroughly heated, then press them through a sieve. Measure the liquid and to every pint allow a half pound of sugar. Put the sugar and liquid back into the kettle and boil rapidly twenty minutes, stirring occasionally to prevent scorching. Pour into tumblers or jars and seal.

Orange Marmalade.—Take equal weights of sour oranges and sugar. Cut all the fruits in halves. Pick out the pulp and free it from seeds. Drain off as much juice as you conveniently can and put it on to boil with the sugar. Let it come to a boil; skim and simmer for fifteen minutes. Then put in the pulp and grated rind and boil fifteen minutes longer. Put away in jelly tumblers.

Gages and Plums.—Scald the gages and remove the skins and weigh. To each pound allow a half pound of sugar. Pack the gages neatly in pint jars and adjust the rubbers. Add to each pound of sugar a half pint of water. Stir until the sugar is dissolved and pour the syrup into the jars. Lay the caps of the jars on loosely; do not fasten them. Arrange them in the boiler the same as for peaches and boil for thirty minutes after they begin to boil. Lift one jar at a time and fasten the lid without removing it.

Peach Marmalade.—Rub the peaches, but do not pare them. Cut them in halves, remove the stones and to every pound of peaches allow half a pound of sugar. Put the peaches in a porcelain lined kettle, add sufficient water to cover the bottom of the kettle; cover and heat slowly to boiling point; then stir and mash the peaches until fine; add the sugar and three or four kernels (to every quart of marmalade) blanched and pounded to a paste. Boil and stir continually for fifteen minutes, then stand over a more moderate fire and cook slowly twenty minutes longer. Stir occasionally that it may not scorch. Put away in stone jars. Plum marmalade and quince marmalade may be made in the same manner.

Tomatoes.—Pour boiling water over the tomatoes to loosen the skin. Peel, crush each tomato in the hand; this wrings out the juice in a way that cannot be accomplished by slicing. When enough are prepared let them stand awhile and pour off the accumulated juice; press a plate on them and pour off the remainder of the juice. Let them boil up several times in the preserving kettle; skim and can. Stone jars, jugs and glass cans may be used. Some prefer to season slightly with salt before canning. Tighten the can covers before putting away, and wrap glass cans in paper to prevent fading. To serve tomatoes prepared in this way, heat them sufficiently to melt the butter. Thicken slightly with broken crackers, toast or stale bread.

Stuffed Tomatoes.—The acidity of tomatoes, which is always brought out with cooking, makes them particularly welcome at this season. They may be served either with a bread crumb stuffing or with a chicken forcemeat. Select tomatoes of firm texture. Cut a "cap" off the top of each and remove all the soft pulp and seeds. Pound to a paste small pieces of chicken, either cooked or raw. Measure the chicken. Add the same amount of bread crumbs to it, soaked in milk, and to every cupful of mixture add a saltspoonful of butter and an egg yolk, with pepper and salt to suit the taste. Some people may enjoy the addition of a pinch of nutmeg. Also add half a teaspoonful of onion juice and six chopped mushrooms. This is a delicious medicinal wine, such as our grandmothers made.

Egg Plant.—Egg plant is now found in the markets and is as fresh and perfect as it is likely to be at any time during the year. One vegetable is enough for a good-sized family. Cut it into slices about one-half inch thick, rub each slice with salt, put them into a deep bowl and cover with water, putting a weight on top so that they will remain under the water. This draws out the

rank taste. Before cooking drain the slices one by one and wipe them with a cloth. Then season them with pepper, dip them first in beaten egg and then in fresh breadcrumbs and fry in hot fat for at least five minutes, browning on both sides. They should be a rich, dark brown, thoroughly cooked and soft, but not burned. Egg plant is also nice when broiled. Prepare in the same way as for frying. Season with salt and pepper and rub each slice on both sides with a little sweet oil. Arrange about three slices on a double gridiron and broil them for about five minutes on each side. Put the slices on a hot platter and spread over them a gill of butter, into which the juice of half a lemon has been beaten.

Hints to Housekeepers.

Very strong tea will stop the bleeding from a cut.

Lemon juice and sugar is a palliative for whooping cough.

Lemon juice rubbed on the scalp cleanses it from dandruff.

When given boiling hot lemonade will relieve a very severe cough or cold.

Ether will take fruit stains out of white dressing; also grease from men's clothes.

Use dry mustard for plasters and talcum powder to apply when the plaster is taken off.

Ipecachuana is a good emetic in sudden attacks of croup, bronchitis or whooping cough.

A tablespoonful of borax is an agreeable addition to the dishwater and helps to keep the hands soft, instead of irritating them as soda does.

A small stiff brush such as artists use when painting in oils is excellent for brushing the dust from crevices in velvet trimming and from between ribbon folds.

Stews of any kind of meat should merely bubble at the sides of the kettle and never really boil. This will make all the difference between tough and tender meat.

Soiled dish towels should not be dropped into hot soapsuds until they have been washed first in lukewarm water, says an authority. The hot suds sets the dirt.

Use surgeon's adhesive plaster for wounds; it is also good for softening hard corns and if applied soon enough is a preventive of blistered heels, the result of wearing low-cut shoes.

Blinds can be nicely cleaned and brightened if after dusting and washing they are rinsed in clear water and ammonia. Use four tablespoonfuls of ammonia to every gallon of water.

One of the most successful ways to darn wools and silks is to take ravellings from the material. Split the thread into the needle with the help of wax. In this way the thread or silk matches the goods exactly.

The unpleasant smell of tobacco clinging to curtains and furniture may be dispelled by sprinkling ground coffee on a shovel, setting it alight, and carrying the latter about the room. Coffee fumes are, in all cases, admirable as disinfectants.

Equal parts of linseed oil and lime, water beaten until they are an emulsion, is the very finest remedy for burns and scalds. The mixture should be spread evenly on linen with a knife and bound on the injured spot. It is a sure cure.

A small portion of bicarbonate of soda dissolved in a glass of hot water will relieve even a severe attack of indigestion or bilious colic. A large dose, a teaspoonful, acts as an emetic and is very good and cleansing and healing to the stomach.

Sheets and other bedding, table linen and the greater part of the weekly washing are better for being mangled, instead of ironed. The mangle is preferred by English housewives to the flatiron, because they believe that the clothes last longer and keep their color better if mangled instead of ironed.

Ripe, fresh raspberries, very, very cold, make a most delicious salad. Scatter over them some sugar and then put over them the juice of an orange and some maraschino with a few drops of brandy. With the raspberries white currants may be effectively used. But do not mix the fruits. Have the currants heaped high in the center of the dish and the raspberries surrounding them; then the sugar, most of it over the currants, and later, a little sherry, or angelica wine.

People who travel on the sea will be glad to learn of another remedy for seasickness. In cases of violent nausea when all other remedies have failed the skin of a perfectly fresh egg is an almost immediate relief. If the first skin does not have the desired effect two more will cause a cessation without fail. This has been tried successfully in cases of cholera under the eye of a physician who acknowledged he had tried every known remedy in the pharmacopœia. The egg skin is said to form a new coating temporarily for the stomach. The skin of an egg is the part that clings tightly to the inside of the shell. It can be given with milk or water and should be rolled up into as small a dose as possible.

Humorous.

Alice rushed in from the garden where she had been picking flowers. She was badly stung by a bee, and was holding on to her finger and sobbing pitifully. "O mamma," she cried, "I burned me on a bug!"

Uncle—"So you go to school now?" Johnny—"Yes, sir." Uncle—"And what part of the exercises do you like most?" Johnny—"Why, the exercises we get at recess."

At a public school one of a class had committed a grave infraction of discipline. The teacher announced that he would thrash the whole class until someone told him who committed the offense. He began with the first boy and thrashed every one in the class, until finally he reached the last one. Then he said, as to each of the others, "Now, if you will tell me who did this, I won't punish you." "All right, sir. I did it."

It was the first time little Alfred had ever seen a shredded-wheat biscuit. Leaning over, he whispered in his mother's ear: "Oh, mamma, what did they soak that Turkish wash-rag in milk for?"

Citiman—"Say, Subbubs, now that you're a sort of agriculturist perhaps you can give the information I want. What is a forget-me-not?" Subbubs: "Why—er—it's a piece of string your wife ties around your finger when you go in town on an errand."

Slimson—"I hear you have been fighting that little boy next door, and that he whipped you. How did that happen?" Willie—"Well, he's going to give a party next week, and I was afraid if I licked him he wouldn't invite me."

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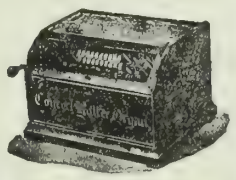
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References: David Starr Jordan or any Stanford Professor.
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The Markets.

San Francisco Produce Report.

San Francisco, Oct. 4, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.		May.	
Wednesday	$ 86⅛@	85⅛	87⅞@	86⅞
Thursday	86⅛@	85⅜	88 @	87⅜
Friday	85¾@	84⅜	87⅝@	86⅜
Saturday	85⅝@	84¼	86¼@	85⅛
Monday	84¾@	83½	86⅛@	84¼
Tuesday	85⅛@	84⅜	86⅜@	85½

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	45⅛@44⅜	44⅝@44⅜
Thursday	45 @44⅜	44⅝@44⅜
Friday	44⅞@44	44½@43½
Saturday	44 @43⅝	43½@43
Monday	43¾@43¼	43⅛@42¾
Tuesday	43⅞@43⅜	43⅛@42⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 36½@1 36¾	$——@——
Thursday	1 36⅝@1 36½	——@——
Friday	1 36⅝@1 35¾	——@——
Saturday	1 35¼@1 35⅛	——@——
Monday	1 35¾@1 35½	——@——
Tuesday	1 36 @1 36	——@——

Wheat.

Arrivals from the North have been free and, though trading was fairly brisk, the price of spot wheat shows no variation. Stocks of milling wheat are sufficient to care for the immediate wants of the mills and large engagements of tonnage for the next few months will insure a well supplied market here. There was some trading in December option and the range was wide enough to indicate that there was more or less life to the speculative element of the market. During the current week the price of futures ranged from $1.34½ to $1.37. Eastern advices show a somewhat weakened market, caused by the heavy unloading of some of the largest and strongest owners of wheat. This was brought about through the falling off of the demand for flour and the prospective heavy accumulations of wheat. The receipts bid fair to continue to the limit of the handling capacity of the railroads in the Northwest, and it is not sure but that the finishing of seeding operations may start renewed marketings in the Southwest.

California Milling	$1 40	@1 45
Cal. No. 1 shipping	1 30	@1 32½
Oregon Club	1 30	@1 32½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.36⅜@1.36½.

Flour.

In consequence of the heavy arrivals of Northern wheat, much of which is suitable for milling purposes, and of the decline in the price of both California milling and Blue stem, local millers have made a reduction of 20c on a barrel of flour. Trading has been light and, although there has been considerable inquiry from the Orient, there is little possibility of any flour being exported from the port in the near future to Oriental points. A local flour dealer has received correspondence which indicates that the Chinese boycott is not so popular in China as it was when it was first begun, as the people of that country have learned that their refusal to buy American flour has resulted to their own disadvantage. In this way it may eventually prove to have been of benefit to the United States.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

One of the features of the local grain market is the firmness in the tone of the spot market for barley. Traders in this article report that the receipts of choice barley are not sufficient to supply the demand at present quotations. Choice bright lots of feed barley are very scarce and would easily bring an advance on quotations. Off grades are at the moment well cleaned up and, though not in large request, are somewhat stiffer in price. The speculative movement in December barley has been characterized by an unusual activity, sending the price up as high at one time as $1.09½ per cental.

Feed, No. 1 good to choice spot	$1 08	@1 10
Feed, fair to good	1 05	@1 07
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 15	@1 20

Oats.

There is practically no change in the local market for oats. No strictly choice or even good black oats are to be found and very few choice red are now in the market, though there are large quantities of off grade reds appearing at quotations, but finding slow takers. Eastern advices state that stocks of oats in Chicago public elevators are over 10,000,000 bushels. This is the largest supply ever seen there at this season of the year. In fact, last year was the first time the 10,000,000-bushel figures were reached on oats in any year.

White oats	$1 42½@	1 45
Black oats	1 30	@1 75
Red, choice new	1 30	@1 45
Red, fair	1 10	@1 27½

Corn

There has been very little movement of a jobbing character in corn, as the mills have been practically the only takers, and they have bought direct from first hands. There has been some inquiry for the small round variety and several sales of large yellow are reported at $1.40 per cental. Advices from the growing sections of the middle West state that the biggest yield in years is looked forward to.

Large White, good to choice	$1 35	@1 40
Large Yellow	1 37½@	1 40
Small Yellow	1 50	@1 55

Rye.

The market for rye is now rather weak at prices quotably unchanged. Trading has been light, but good rye has no difficulty in commanding the price quoted for choice. There is considerable Salt Lake rye now on the coast, but it is for the most part of an off quality and is moving slowly at the minimum quotation.

Good to choice	$1 45	@1 47½

Buckwheat.

The only stocks of buckwheat now in this market are in the hands of the millers and are very limited in quantity. Barely sufficient stocks are being held over to supply the demand for seed. Good seed buckwheat will bring about $2.75 per cental. Stocks on hand are not sufficient to warrant a quotation.

Good to choice	——	@——

Beans.

There is a very unsettled feeling in the bean market, owing to the fact that the fall crop is just now coming in and the market is necessarily influenced somewhat by the quantity of arrivals. Prices have declined rapidly during the last few days, and it is believed that the level has not yet been reached. All varieties are now being harvested or have already been, and most of them are now beginning to arrive in this market. The quality of the early crop, so far as can be judged from stocks now on hand in the local market, is good, though it is believed that the yield is not so large as had been anticipated. Large white beans, bayos, red beans and limas are weaker in price. The other varieties are steady with prices much unchanged.

Small White, good to choice	$3 50	@3 75
Small White, damaged	1 50	@2 75
Large White	2 00	@2 50
Large White, damaged	75	@1 50
Pinks	——	@——
Pinks, damaged	1 50	@1 75
Bayos, good to choice	2 75	@3 00
Bayos, damaged	——	@——
Red Kidneys	3 50	@4 00
Reds	3 50	@4 00
Limas, good to choice	3 75	@4 00
Black-eye Beans	——	@4 00

Dried Peas.

The bulk of the crop of green peas is sold, and as there have been rather light receipts, a fair demand has caused prices to advance quite materially. The quality of the arrivals has been uniformly good and it is probable that the present prices will be well maintained. It is reported that the yield in most cases has been lighter than was expected. California green peas have advanced 25c per cental and Niles 15c.

Green Peas, California	$2 25	@2 50
Niles	1 85	@2 25

Hops.

The hop situation remains much the same as it has been for the past few weeks. Picking has been hindered somewhat by heavy rains in the north, and probably a small portion of the crop has been damaged by the same. No sales have been reported in this market during the current week, and the prices of 1904 remain nominally the same. New crop hops have been offered as low as 12c, but with few, if any, takers. The general impression prevailing among jobbers here is that when the enormous crops of the world have been launched upon the market, growers on the Pacific coast will be glad to sell at what the market may afford. Stocks of old hops are still large enough to supply the demand for some time to come.

Good to choice 1904 crop, nominal	10	@	12½

Wool.

The wool situation remains unchanged so far as local traffic is concerned. Dealers here are not disposed to attempt to handle the fall clip until the large stocks of spring wools are well out of the way. The only inquiry at present is for long wools suitable for worsteds and this demand the fall clip of the Pacific coast is not able to supply, owing to the fact that it is all more or less defective and must go through the hands of the scourers before it will be marketable.

FALL		
Humboldt and Mendocino	17	@20
Northern, free	15	@17
Northern, defective	10	@13
Middle County, free	13	@15
Middle County, defective	10	@13
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11
SPRING.		
Oregon, valley	23	@25
Eastern Oregon	12	@17
Nevada	16	@20

Hay and Straw.

There is practically nothing of interest to report in the hay market. Arrivals have been somewhat larger than last week, the increase coming largely by water. Choice hay continues in good demand, and alfalfa hay, particularly the lower grades, is weak. The fine weather is favoring the growers who are rushing hay to the market in order to get it under cover. Prices are unchanged.

Wheat, choice	$13 00	@	14 50
Wheat, other grades	8 00	@	12 00
Wheat and Oat	8 00	@	10 00
Tame Oat, fair to choice	7 50	@	11 00
Wild Oat	5 00	@	8 00
Barley	7 00	@	9 50
Clover	6 00	@	9 00
Alfalfa	5 50	@	9 00
Stock hay	4 50	@	5 50
Compressed	10 00	@	13 00
Straw, ₱ bale	30	@	45

Millstuffs.

Bran and Middlings are still very scarce and the price is being held firm at quotations. Other varieties are ruling steady at last week's advances. The tendency is for a stronger market on cracked corn and rolled barley.

Alfalfa Meal, ₱ ton	$18 00	@	20 00
Bran, ₱ ton	22 00	@	23 50
Middlings	28 00	@	30 00
Shorts, Oregon	23 00	@	24 00
Barley, Rolled, choice	23 00	@	23 50
Cornmeal	32 00	@	32 50
Cracked Corn	33 00	@	——
Oilcake Meal	——	@	——
Cocoanut cake or meal	21 00	@	22 00

Seeds.

Trading has been very light during the current week owing to the fact that the present time is just between seasons. Stocks of flax and mustard seeds are very light and are being held firmly at the quoted price. It is reported that the crop of yellow mustard in the Lompoc valley is not as large as had been expected. Canary is rather scarce, but rape, hemp and timothy are arriving in sufficient quantities to supply the somewhat dull market.

Flax	$3 25	@	3 50
Mustard, Yellow	3 00	@	3 50
Mustard, Trieste	4 00	@	4 25
			Per lb.
Canary			6¼@—
Rape			2½@ 3
Hemp			3½@ 4
Timothy			5 @ 5½

Honey.

Dealers complain that there is very little sale for honey in this market and that so long as apiarists continue to hold at present figures there is little likelihood of any improvement. Growers are not at all alarmed over the outlook as it is believed that they will find a ready market for their crop as soon as the fact of the shortage of the yield in many sections becomes established. As the matter now stands there seems to be a deadlock between growers and dealers with little possibility of any improvement in the situation except through concessions on the part of the apiarists.

Extracted, Water White	5 @—
Extracted, White	4½@ 4¾
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	8 @ 9
Amber Comb	6 @ 7

Beeswax.

Trading has been light and stocks have a tendency to accumulate under only normal receipts. Prices are somewhat weaker on light grades.

Good to choice, light ₱ lb	25 @27
Dark	23½@24½

Live Stock and Meats.

The market is now in good shape and appearing quotations are being well maintained. Beef is a shade weaker as to price owing to large receipts, but a brisk demand has prevented the accumulation of stock. Veal, both small and large, is now arriving plentifully, and owing to the fact that this is the season for small veal, is slightly weaker in price. Mutton is steady and spring lambs are firmer.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@ 5¼
Beef, 2nd quality	3½@ 4
Beef, 3rd quality	3 @ 3½
Mutton—ewes, 8@8½c; wethers	8½@ 9½
Hogs, hard grain, 150 to 250 lbs	5½@—
Hogs, large, hard, over 250 pounds	5¼@ 5½
Hogs, small, fat, under 150 lbs	5¼@—
Veal, large, ₱ lb	5 @ 6½
Veal, small, ₱ lb	6½@ 8
Lamb, spring, ₱ lb	9 @10

Hides, Skins and Tallow.

The hide market continues very firm at previous high quotations. No California hides are now being shipped East as the California demand is fully up to the supply. Some tanners are now working only at a limited capacity, but on the whole hide buying has been very active in this market during the week. Appearances indicate a continuance of high hide values for some time to come.

Bags and Bagging.

Owing to the fact that the bean threshing is now on and that the crop is of more than average size, the price of bean bags has been advanced to 6½c. There is an active demand at that figure. Cotton fruit sacks of second quality are now being brought into requirement by the latter end of the crop and have stiffened some in price. Other varieties are holding firmly at appearing quotations.

Bean Bags	$	6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2		7 @7¾
Fruit Sacks, jute, as to quality		6½@7¼
Grain Bags, Calcutta, 22x36, spot		7¼@7¾
Wool Sacks, 4-lb		33 @ 34
Wool Sacks, 3¼ lb		30 @ 31

Poultry.

The market has not reacted since last week and continues dull and depressed for medium sized hens. Good large hens and large young and old turkeys are in good demand. Other lines are steady at appearing quotations.

Turkeys, choice Young, ₱ lb	$	24	@ 25
Turkeys, live gobblers, ₱ lb		21	@ 23
Turkeys, live hens ₱ lb		21	@ 22
Hens, California, ₱ dozen		4 00	@ 4 50
Hens, large		6 00	@ 7 00
Roosters, old		4 50	@ 5 00
Roosters, young (full-grown)		5 00	@ 5 50
Fryers		3 50	@ 4 00
Broilers, large		3 00	@ 3 50
Broilers, small to medium		2 00	@ 2 50
Ducks, old, ₱ dozen		4 50	@ 5 00
Ducks, young, ₱ dozen		4 00	@ 6 00
Geese, ₱ pair		2 00	@ ——
Goslings, ₱ pair		2 00	@ 2 25
Pigeons, old, ₱ dozen		1 25	@ ——
Pigeons, young		1 75	@ 2 25

Butter.

The butter market remains steady on nearly all grades, but the advances in the price of the superior grades during the past two or three weeks have had the effect of drawing quite liberal supplies from storage. California storage is somewhat stiffer in price on this account and is now quoted at 23c to 25c.

Creamery, extras, ₱ lb	25	@27
Creamery, firsts	23	@25
Creamery, seconds	21	@23
Dairy, select	20	@22
Dairy, firsts	20	@—
Dairy, seconds	18	@19
California storage	23	@25
Mixed Store	17	@18

Cheese.

Trading has been fairly steady and prices are being well maintained. New fancy flat California cheese is quoted at an advance of ½c in price and it is probable that an extra fancy lot would bring an advance on the 12c quotation.

California, fancy flat, new	11	@12¼
California, good to choice	10	@10½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13½
Eastern, new	15½	@18½

Eggs.

The market is steady, with prices unchanged, except in Eastern seconds, which are coming into strong competition with California storage eggs, and have advanced 1c per dozen in price. Owing to the prolonged hot weather, much of the stock now arriving has to be candled.

California, select, large, white and fresh	38	@40
California, select, irregular color & size	28	@30
California, good to choice store	18	@24
Eastern firsts	21	@23
Eastern seconds	19½	@20

Potatoes.

The market continues weak, though prices remain as last quoted. Receipts have been large, but contain little that may be termed strictly choice. The shipping demand has fallen off somewhat, which leaves the market in a very poor condition, as the local demand is not sufficient to prevent stocks from accumulating.

Cal. Early Rose, ₱ cental	45	@	50
River Burbanks, ₱ cental	60	@	70
Salinas Burbanks	85	@	1 15
Chile Garnet, ₱ cental	55	@	65

Vegetables.

The vegetable market has reacted somewhat and is now in fairly good shape. Lima beans are slightly firmer and string beans show an improvement. Egg plant is stiffer in price and somewhat scarce in the local market. Yellow Danvers onions are now quoted at 90c per cental for choice grades. Bell peppers are somewhat firmer, while summer squash has advanced in price. Tomatoes are somewhat weaker in price and have a wider range on account of the fact that recent receipts contain much that is not choice.

Beans, Lima, ₱ lb	2	@	3
Beans, String, ₱ lb	2	@	4
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	75	@	1 25
Egg Plant, ₱ box	50	@	65
Garlic, ₱ lb	5	@	5½
Onions, New Yellow Danvers, ₱ ctl	85	@	90

Onions, Australian Brown, ℔ ctl...	70	@	85
Peas, Green, ℔ lb.....	3	@	5
Peppers, Bell, ℔ box.....	40	@	50
Peppers, Green, ℔ box.....	25	@	50
Summer Squash, per large box.....	50	@	75
Tomatoes, ℔ box or crate.....	25	@	50

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The local fresh fruit market is steady as to prices and strong as to demands. The extremely favorable weather of the past few days has aided the situation quite materially. Apples are being received in large quantities and are showing up well as to quality. A brisk demand is keeping stocks reduced and prices firm. Figs are weaker in price and grapes are firmer. The firmness in the price of grapes in the fresh fruit market is attributable to the fact that the remainder of the grape crop is being bought up by the wine manufacturers at rather high prices. The bulk of the peach crop has either been taken up by the canners and dryers or has already been sold in the fresh fruit market, and arrivals are therefore very few and prices much firmer on choice stock. The only kind of plums now in this market are the late Coes Red plums, which are held at 65c@$1.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 25
Apples, good to choice, ℔ 50-lb. box	60	@	1 00
Apples, fair to good, ℔ 40-lb box..	35	@	60
Cantaloupes, pony crate.....	1 25	@	1 50
Cantaloupes, ℔ box.....	50	@	75
Crabapples, ℔ small box.....	—	@	—
Figs, ℔ one layer.....	40	@	50
Figs, ℔ two layer.....	50	@	75
Grapes, Seedless, ℔ crate.....	75	@	1 00
Grapes, ℔ small box.....	65	@	75
Huckleberries, ℔ lb.....	7	@	9
Peaches, ℔ large box.....	1 00	@	1 25
Peaches, ℔ small box.....	60	@	75
Pears, Bartlett, choice to select, 40-lb box.....	1 00	@	1 50
Pears, Bartlett, good to choice...	75	@	1 00
Pears, Bartlett, fair to good.....	50	@	75
Plums, Late Coes Red, ℔ crate...	65	@	1 00
Plums, ordinary, ℔ box.....	—	@	—
Raspberries, ℔ chest.....	5 00	@	7 00
Strawberries, Longworth, ℔ chest	7 00	@	8 00
Strawberries, large var., ℔ chest.	4 00	@	5 00
Strawberries, Santa Clara, ℔ chest	5 00	@	7 00
Watermelons, ℔ doz.....	1 20	@	2 00
Whortleberries, ℔ lb.....	9	@	10

Dried Fruits.

The local demand is at the moment a trifle weak, but the general condition of the dried fruit market, as compared with former years, is good. One remarkable feature of the situation is that even at this early date nearly all the dried fruits are out of the growers' hands. Good authorities estimate that the stock of prunes remaining in first hands on the coast does not exceed 300 carloads, and this, with the exception of about 20% in the hands of growers, is controlled by packers. The growers expect to get 4c, 4-size bag basis, for what they have left. The apricot and peach situation was never stronger, being controlled by a few packers. The growers held on to their fruit longer than usual this year, and, being thus able to take full advantage of the shortage, have all made money on their crops. One or two packers control the apricot market. Others who at this time of the year generally have a pretty good supply in their bins are carrying little or nothing now. The indications all point to a higher coast market on both apricots and peaches.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice.....	6	@	6½
Apples, extra choice to fancy, 50-lb boxes.	6½	@	7
Apricots, Royal, good to choice, ℔ lb.....	6½	@	7
Apricots, Royal, fancy.....	7½	@	8
Figs, 10-lb box, 1-lb cartons.....	55	@	62½
Nectarines, White and Stanwick, ℔ lb...	7	@	7½
Nectarines, red, ℔ lb.....	—	@	6
Peaches, unpeeled, good to choice.....	7	@	7½
Peaches, unpeeled, fancy to extra fancy..	7½	@	8
Pears, standard, ℔ lb.....	7	@	7½
Pears, choice to fancy.....	8	@	10
Plums, Black, pitted.....	5	@	6
Plums, Red, pitted.....	6	@	7½
Plums, Yellow, pitted.....	5½	@	7½
Prunes, Silver, good to fancy.....	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced.....	2½	@	2¾
Apples, quartered.....	3	@	3½
Figs, White, in bulk.....	2	@	2½
Figs, Black.....	2	@	2½

Raisins.

At present the market is somewhat quiet, but the raisin situation generally may be said to be a strong one. There are just about enough raisins on hand to carry the dealers until the new crop is ready to be marketed. The new crop is expected to be somewhat short of the average, but as the Growers and Packers' Association has the price situation so thoroughly in its own hands it is not thought that profits will be diminished by the crop shortage. It is the general expectation that the Association opening prices on fancy seeded in 1-pound cartons will not be less than 7½c f. o. b.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box....	85	@	——
London Layers, 3-crown, 20-lb box.....	90	@	95
Fancy Clusters, 4-crown, 20-lb box.....	——	@	1 30
Dehesas, 20-lb box.....	——	@	1 85
Imperials, 20-lb box.....	2 25	@	2 35
2-Crown Standard loose Muscatel.....	4½	@	—c
3-Crown Standard.....	4¾	@	—c
4-Crown Standard.....	5	@	—c
Seedless Thompsons.....	4½	@	—c
Seedless Sultanas.....	4	@	—c
Fancy, 16-oz. Seeded.....	6½	@	—c
Choice, 16-oz. Seeded.....			5 c
Fancy, 12-oz. Seeded.....			5½c
Choice, 12-oz. Seeded.....			4½c

Citrus Fruits.

The general tone of the citrus fruit market is quiet. Valencia oranges are the only ones coming into the local market, and the receipts of these are of rather an off quality and show a somewhat wider range in price on this account. Fancy California lemons are weaker and so are limes. Grape fruit shows a wider range in quotations. Reports of the orange crop would indicate that it will be one of the largest in the history of southern California.

Oranges, Valencias, ℔ box.....	2 00	@	4 50
Lemons, California, fancy, ℔ box....	2 50	@	3 00
Lemons, California, good to choice..	2 00	@	2 50
Lemons, California, fair to good.....	1 50	@	2 00
Grape Fruit, ℔ box.....	1 75	@	3 00
Limes, ℔ box.....	4 00	@	4 50

Nuts.

There is a weaker feeling in the nut market just at present and dealers are not disposed to pay the opening prices asked by the Growers' Association on walnuts and almonds, this being especially the case on the latter, owing to the fact that the crop is fully average, being estimated at about 225 cars, while last year's crop was about seventy-five cars. Dealers are now offering 10c to 11c per pound for I X Ls, 11c for Ne Plus Ultra choice basis, 12c for Nonpareils, 7½c for Languedocs, 7c for Golden States and 5c for hard shells.

Peanuts, fair to prime.....	4½	@	5½
Cal. Walnuts, No. 1 soft shell.....	—	@	13
Cal. Walnuts, No. 2 soft shell.....	—	@	9
Cal. Walnuts, No. 1 hard shell.....	—	@	12½
Cal. Walnuts, No. 2 hard shell.....	—	@	8½
Almonds, IXL, ℔ lb.....	11	@	12
Almonds, Ne Plus Ultra, ℔ lb.....	11	@	12
Almonds, Nonpareil, ℔ lb.....	11	@	13
Almonds, Languedoc, ℔ lb.....	7½	@	—
Almonds, Golden State, ℔ lb.....	7	@	—
Hard Shell, ℔ lb.....	5	@	—

Wine.

The California Wine Association announced Sept. 29th the price of wine grapes in some localities at $18.00 to $20.50 a ton. The Italian-Swiss Colony at Asti has advanced the price of grapes for this season's crop from $18.50 to $20.50 a ton. The advance was announced Sept. 25th and many are coming in to contract their crop at that price.



2 AND 2

make 4 in the ordinary course of business; but—there's the interest to be considered if part of your earnings is left with us for safe investment. Then there's another story which will make 2 plus 2 equal 5 in time. Want to know how it's done? Ask here, please, and you will be told cheerfully.

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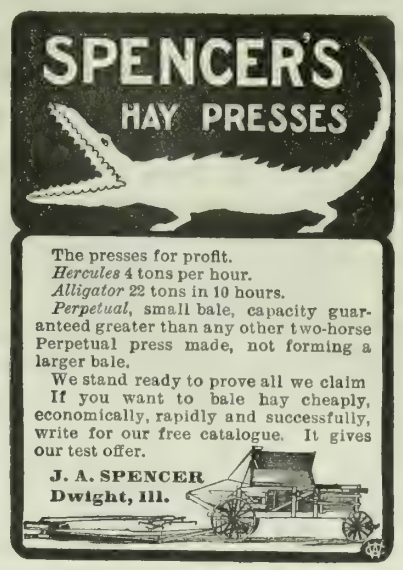
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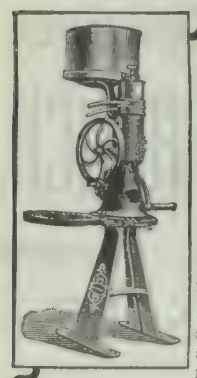
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THE DAIRY.

Fifteen Jerseys vs. Fifteen Holsteins.

In the course of his articles on the St. Louis cow tests, Mr. R. M. Gow, a writer from the Jersey point of view, makes the following contrast:

Having, with this article, completed the records of the leading fifteen animals in the Jersey herd, and there having been but fifteen cows in the Holstein – Friesian herd, it may be instructive to compare their respective productions at this point. The fifteen Jerseys produced 78,093.4 pounds milk, against 96,175.3 pounds milk in the case of the Holsteins. The Jersey milk contained 3721.90 pounds fat, and the Holstein milk but 3298.44 pounds fat. The estimated Jersey butter amounted to 4384 pounds, the Holstein butter to 3817 pounds. The milk of the Jerseys contained 6856.185 pounds solids not fat, the milk of the Holsteins 7630.913 pounds. It cost $441.261 to feed the Jerseys, and $515.70 to feed the Holsteins. As butter producers the Jerseys returned a net profit of $654.736, against $438.55 net profit for the Holsteins. As milk producers the Jerseys returned a net profit of $880.996, against $702.757 in the case of the Holsteins. The average percentage of fat in the milk of the Jerseys was 4.76; in that of the Holsteins it was 3.4. The percentage of solids not fat in the Jersey milk was 8.77; in the Holstein milk it was 7.9. The total solids formed 13.5% of the Jersey milk and 11.3% of the Holstein milk. It required 17⅛ pounds of the milk of the Jerseys per pound of butter, against nearly 25⅛ pounds of the milk of the Holsteins. The Jersey butter cost a little over 10 cents per pound in feed; the Holstein butter cost over 13½ cents per pound in feed.

The averages per cow were as follows:

	Jerseys. Pounds.	Holsteins. Pounds.
Milk	5,206.200	6,411.700
Fat	248.100	219.890
Butter	292.260	254.460
Solids not fat	457.079	508.727
Cost of feed	$29.417	$34.38
Net profit, class A	43.649	29.23
Net profit, class B	58.733	46.85

The averages per cow per day were as follows:

	Jerseys. Pounds.	Holsteins. Pounds.
Milk	43.380	53.400
Fat	2.067	1.832
Butter	2.435	2.120
Solids not fat	3.809	4.239
	Cents.	Cents.
Cost of feed	24.50	28.6
Net profit, class A	36.37	24.3
Net profit, class B	48.94	39.0

Perhaps the Holstein breeder will claim that it is unfair to compare the fifteen best Jerseys with all the Holsteins, putting the best selected against a total, but you have the figures as they are.

School for Training Dairy Maids in Norway.

Consul Ramusen of Stavanger directs attention to Norway's efforts to increase the value and success of her dairying interests. He says:

There has been considerable improvement along agricultural lines in this consular district lately, and dairying in particular has received much attention. The society for the promotion of "Norge's vel" (Norway's weal) has during the year established schools, whose aim will be to "train young girls from the rural districts in the care of the cow and other domestic animals." The length of each course is six months, commencing October 14 each year. The instruction will be mainly practical, and taught in such a manner that pupils, under the guidance and supervision of the instructor or instructress, each by turn, will feed and tend the entire stock of cattle, sheep, swine and poultry. In addition to feeding, tending and other work pertaining to cleanliness of animals in their respective quarters, the pupils are required to perform the dairying, scrubbing and cleaning of milk vessels, and once a week weigh the feed and milk and keep a record thereof. The course also includes reading and writing, together with instruction from modern text books concerning the care of live stock, including feeding and dairying. In order to be eligible to enter these schools pupils must have attained the age of 17 years, have had some previous experience in dairying, be of good health, and possess good moral character, for all of which a certificate must accompany applications for admission. Board and tuition are free.

The foregoing report of Consul Ramusen bears strong evidence that the practical — almost scientific—development of the Danish dairy industry, and the very large amount of money received annually by Denmark, from its sales of butter to England mainly, are having their effect on the neighboring Scandinavian countries, where the dairy conditions are about the same as in Denmark.

Although the conditions, as applied to girls and women, revealed in Consul Ramusen's report are inapplicable, in a large measure, to the United States, it is well that our farmers should know the extreme efforts put forth in European countries for the exploitation of their dairy industries, for their products will compete with our products in foreign markets, and we can only hope to win our share of those markets, in the face of such acute competition, by overcoming their labor applications, to the production of butter, in the main, by superior intelligence and more effective appliances.

The principal efforts of the Scandinavian dairy interests are chiefly toward the output of butter for the British markets, and the results fully justify their efforts.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the Pacific Rural Press by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

Helena Burke Butter Cup Major, Charles D. Pierce, D. W. George, Grimes.

Keyes Paul of Riverside, Charles D. Pierce, Borchers Bros., Sacramento.

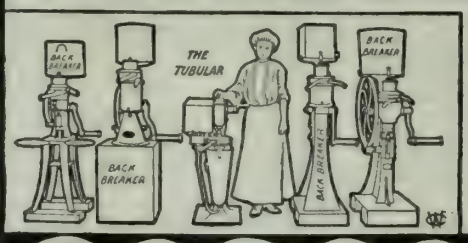
King Melkbron of Riverside, Charles D. Pierce, A. D. Owen, Fresno.

Korndyke Sir Paul De Kol, Wisconsin Live Stock Association, J. H. Williams, Portersville.

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The low can is only one of many advantages Dairy Tubulars have over all others. Dairy Tubular bowls are simple—"back breakers" are complicated. Tubulars are self-oiling--no oil holes to fill up. "Back breakers" are oil drippers and oil wasters. To learn a lot more about Tubulars, write today for catalog N-131



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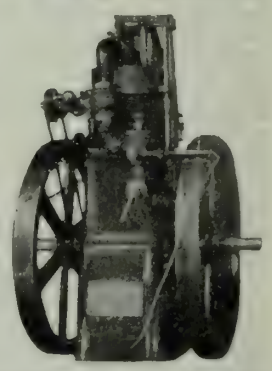
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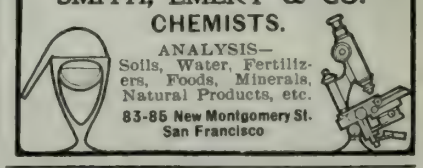
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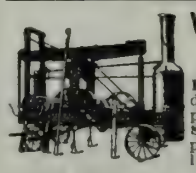
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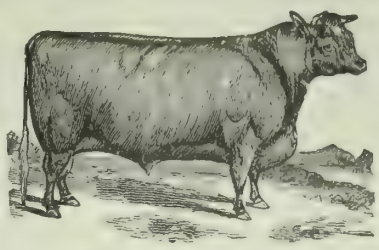
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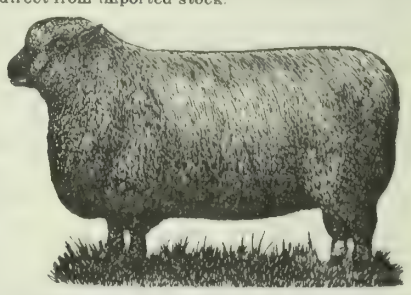
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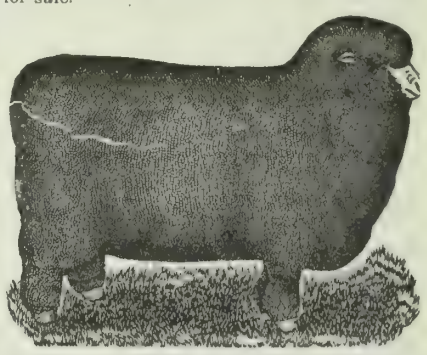
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List of Granges and Officers.

ALHAMBRA, 230.—M., H. C. Raap; L., James Kelly; Sec., Mrs. L. T. Raap. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Martinez.

AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. E. Stewart; L., C. E. Howard; Sec., Miss S. E. Wood. 1st & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Sehlmeyer; Sec., Miss Florence E. Liemback. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 3d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C. Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar. 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M., Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail. 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham. 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 3 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec ; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

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The State Grange.

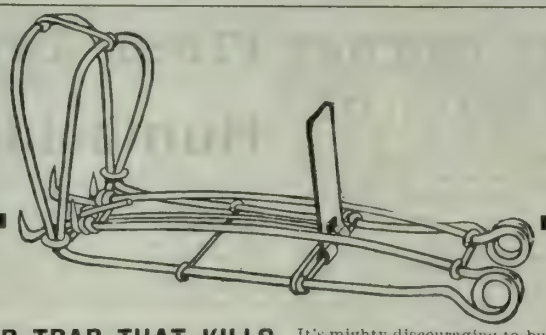
The State Grange opened its annual meeting in Napa on the morning of October 3, to continue four days. There was a large attendance of delegates from Granges throughout the State and about 300 other visitors. The meeting was held in the opera house, which was elaborately decorated for the occasion. H. C. Raap of Martinez, Master of the State Grange, presided over the convention, with Mrs. Woodhams-Brasch, State Secretary, at the secretary's desk.

Annual reports were presented by State Master H. C. Raap, Secretary Mrs. Woodhams - Brasch and State Treasurer D. Flint of Sacramento, showing a large increase in the membership of the various Granges during the past year.

At the afternoon session Master H. C. Raap announced the appointment of the following committees for the work of the convention: Committee on Credentials—P. Hansen of the Sonoma County Grange, chairman: J. B. Metzger, Hugh Leigh, Mrs. H. F. Tuck, Mrs. L. S. Woodhams-Brasch. Committee on Order of Business—W. V. Griffith of Geyserville Grange, Sonoma county, chairman; S. S. Gladney, N. H. Root, Mrs. W. U. Griffith, Miss Emily L. Burnham. Committee on Good of the Order—H. F. Tuck of Lincoln Grange, Santa Clara county, chairman; J. W. Webb, A. D. McDonell, Mrs. H. C. Maddux, Mrs. M. L. Gamble. Committee on Division of Labor—J. Talbor of Bennett Valley Grange, Sonoma county, chairman; H. V. Monson, R. A. Lafayette, Mrs. R. A. Lafayette, L. S. Dart. Committee on Forestry and Irrigation—J. W. Webb of West Park Grange, Fresno county, chairman. Committee on Resolutions—J. S. Dore of West Park Grange, Fresno county, chairman; George Wagner, M. Farrell, Mrs. R. H. Hansen, Mrs. L. C. Steward. Committee on Taxation — John Tuohy of Tulare Grange, Tulare county, chairman; Prof. D. T. Fowler, H. C. Maddux, H. F. Tuck, H. Weeks. Committee on Co-operation—J. E. Metzger of Geyserville Grange, chairman. Committee on Press—H. V. Griffith of Geyserville Grange, chairman. Committee on Education—Mrs. R. H. Tuck of Lincoln Grange, Santa Clara county, chairman. Committee on Memorial—Mrs. Gamble of Santa Rosa Grange, chairman. Committee on Legislation — Prof. D. T. Fowler of Berkeley, chairman. Committee on Constitution and By-laws—Thomas Jacobs of Tulare Grange, Tulare county, chairman.

On Tuesday night there was a grand reception of the visiting delegates by the Napa Grange and Napa citizens in the East Napa pavilion. Addresses were delivered by Mayor Fuller, ex-Congressman Theodore Bell and Mrs. Borrette, Master of Napa Grange.

Subsequent proceedings will appear in our next issue.



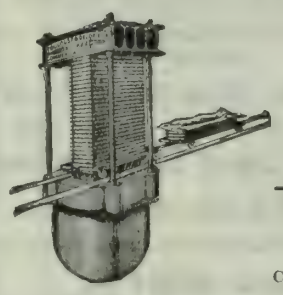
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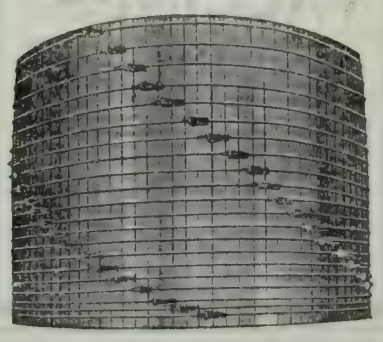
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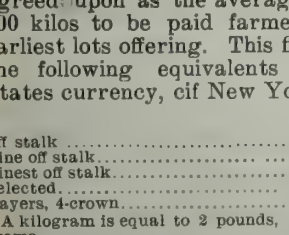
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FRUIT MARKETING.

Consular Reports About Fruits.

[From the State Commission of Horticulture.]

Malaga raisins, by D. R. Burch, Consul, Malaga, Spain, September 2: The raisin season opened this week with five shipments to New York. Small sizes will be more abundant than last year. This is because of lack of rain, dry weather being detrimental to the growth of the raisin and producing a scarcity of large fruit.

In extent, however, the crop will fulfill ante-season expectations, an approximate forecast being 1,000,000 boxes. This is a one-fifth increase over the crop of 1904. Lower prices will prevail at the height of the season, but the price of $1.70 per box of Connoisseur Clusters, at which a shipment was made this week, will most likely be maintained until October. The opening first cost prices for the different grades were as follows:

	Pesetas.
Imperial Clusters	20.00
Royal	15.00
Dessert	12.50
Connoisseurs	8.50
London Layers	6.00
Cabinets	7.00
Loose Muscatels, 5-crown	12.50
Loose Muscatels, 4-crown	8 75
Loose Muscatels, 3-crown	6.50
Loose Muscatels, 2-crown	5.00

Peseta worth 14 cents.

Valencia and Denia raisin crop, H. A. Johnson, Consul, Valencia, Spain, September 1: Following the course successfully adopted last year, packers and exporters have again agreed to fix a date and limit the price for the first shipments. August 20th was selected for the former, and 40 pesetas agreed upon as the average price per 100 kilos to be paid farmers for the earliest lots offering. This figure gives the following equivalents in United States currency, cif New York:

	Cents per Kilo.
Off stalk	7
Fine off stalk	7 9–10
Finest off stalk	8 1–2
Selected	9 3–4
Layers, 4-crown	10

A kilogram is equal to 2 pounds, 3 ounces, 4 3–8 drams.

Despite persistent droughts, general estimates of the crop still reach 600,000 hundredweights, assuming the continuance of normal weather during harvesting. Opening prices have already declined about 2 pesetas (about 30 cents) per 100 kilos, and still lower rates are anticipated at an early date. The fruit, especially in the drier districts, is rather small, but fleshy, and of very fine color. Shipments up to date amount to 40,000 hundredweights, of which only 1600 hundredweights have gone to the United States, 2000 to Canada and 35,000 to Great Britain, the remaining 1400 hundredweights going mostly to Baltic ports and northern Europe.

Walnut report of James Drinkwater, Consular agent, Italy. Castellamare de Stabia, August 21: 1. The crop of this year promises to be a good average one, about one-quarter more than last year. 2. The quantity expected to be produced is about 20,000 cases, of which 12,000 cases will probably be exported from this district to the United States. 3. The probable prices will be about $12.06 per case of about 1500 pounds. The current freight rate to New York is 2s 6d per case of 69½ kilos.

The Smyrna raisin crop, with notes on the fig crop, by Thomas H. Norton, Consul, Smyrna, August 24: The present prospects of the raisin crop are favorable. They compare, in quantity, as follows, with the results of last season:

	Crop of 1904.	Estimate for 1905
Sultanas, long tons,	34,000	48.000 to 53,000
Red raisins, long tons,	6,500	8,500 to 9,500

In view of the rapid extension in this district of the culture of the vine, and also of the fact that the yield of Sultanas in the season of 1903 reached a total of nearly 65,000 tons, the estimated production for the present season must be reckoned as a good average one.

Stocks of last year's fruit are exceedingly reduced. It is estimated that there remain in this country barely 1500 tons of raisins, the greater portion consisting of low grade and deteriorated wares, fit only for distillery purposes. Last year at this time the stocks carried over from the preceding crop of 1903 amounted to nearly 10,000 tons.

A heavy rainfall occurred on August 22 at Smyrna and throughout the adjoining region. It was more abundant along the line of the Aidin railway than along that of the Smyrna and Cassaba railway. Such a rainfall in the month of August is of extremely rare occurrence in that region. It has affected the quality although not the quantity of both the raisin and fig crop, and will have a bearing on future price conditions. About one-fifth of the local fig crop is affected by the malady here termed "bassara."

Owing to the prospect of a small crop of raisins in Spain, a smaller output of fruits generally in European countries, and to the reports current that the California crop of raisins is likely to be 25% short, prices at Smyrna are ruling at a moderate level, somewhat higher than would have ordinarily been justified.

Owing to keen competition in the carriage via British and European ports, actual rates on figs and Sultanas for the United States seaboard are practically as low as those ruling for London, Liverpool, Hamburg, etc. A ton of Sultanas is carried to Liverpool at 27s 6d per ton, as against 30s to 33s to New York via British or European ports. In certain cases of direct steamers to New York rates as low as 17s 6d to 20s per ton are accepted. The first trainload of figs during the present season arrived at Smyrna on August 20. Shipments of new crop to Europe began yesterday, a vessel laden with figs leaving for Trieste.

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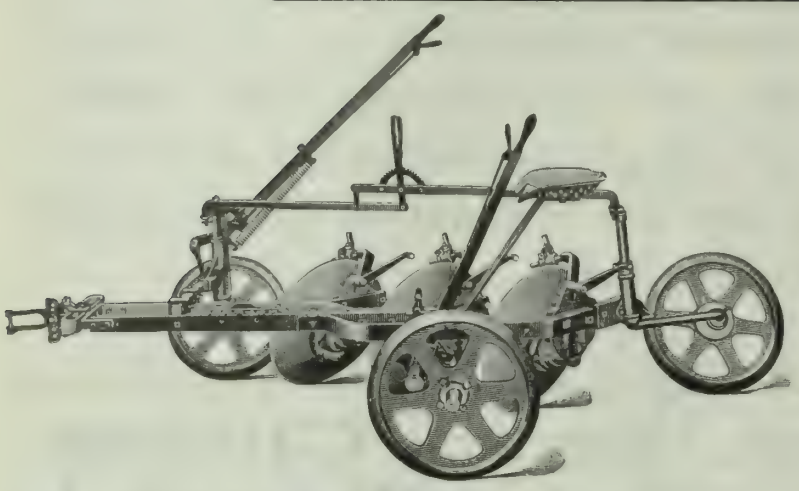
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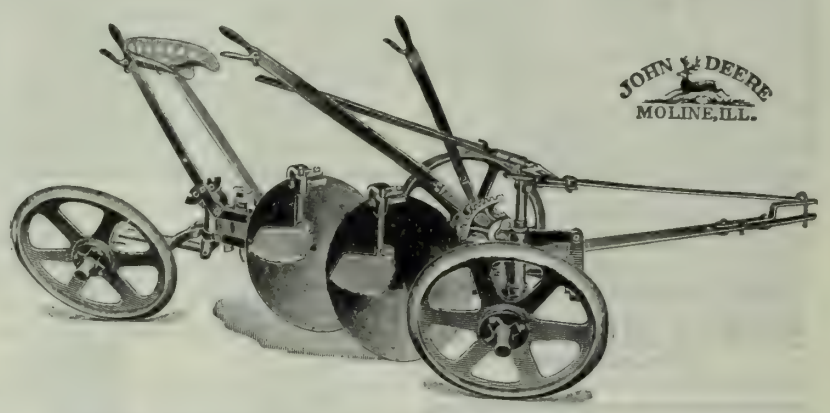
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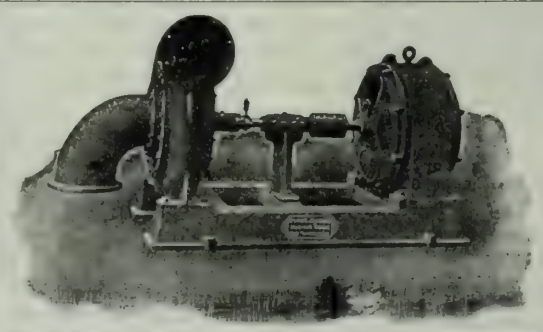
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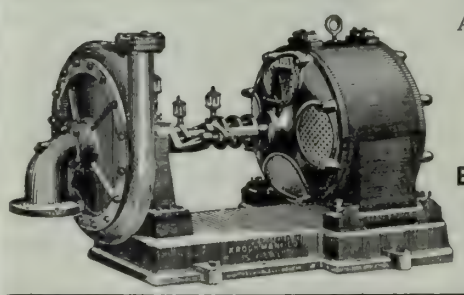
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 16. SAN FRANCISCO, SATURDAY, OCTOBER 14, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.



Agricultural Building of the University.



A Class in the Study of Insects.



Judging Ayrshire Cattle at the University.



Comparative Judging of Dairy Stock.



A Corner of the Viticultural Laboratory.

University Short Courses.

We referred last week to the short courses in several branches of agriculture which will open at the Agricultural College in Berkeley on October 18. The picture gallery on this page filled with views taken last year while the short courses were in progress will give our readers a more realizing sense of the outfit which the University has for short, suggestive courses of instruction and the ways in which it is used. Only a few of many available views are selected and the idea is to indicate the variety of the things which enter into an up-to-date short course in an Agricultural College which has to minister to as many lines of agriculture as flourish in California. The agricultural building is only one of several which are employed and are being used for every available inch of space they have in them. In a similar way it might be said each view shown stands for several of its kind. The plan is to have something which will meet in some degree the tastes and needs of everyone who can give a few weeks to schooling in agriculture. The courses are designed to meet the needs of all persons who desire to make themselves more familiar with the principles underlying farming operations and with the most approved practice. The short course is open to all persons of good moral character who are at least seventeen years of age and who have a common school education. No formal entrance examination will be required, but it is expected that all applicants will have sufficient school training to enable them to intelligently understand lectures, take notes, and perform the necessary textbook work. The usual grammar school course gives a fair preparation for this work. Instruction in the short course is given largely by means of lectures and prescribed reading, supplemented by such recitations, practical demonstrations and laboratory work as are necessary to make plain the principles involved, and to give the student an insight into the various branches of science upon which true agricultural development rests. In each of the special courses about three hours of each day are spent in the lecture room; the remaining portion of the day is occupied in the field, creamery, library or laboratory —the time required varying from three to six hours, depending upon the particular work at which the student is employed.



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SAN FRANCISCO, OCTOBER 14, 1905.

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The Week.

The days have been dry beyond the expectations noted in our last issue, and though rather trying north winds have blown and field fires have destroyed much dry feed here and there, the farmer is on the whole content with the progress of the season. Much value in late tree fruits, also in grapes and in beans, has been brought in, and it is remembered that some of the very best years have been those in which early rains have come late and growing conditions have been continuous thereafter, while some of the worst years have had very early dashes of rain and much drouth following. From all considerations it is better that there should be rather a late beginning, and then a keeping at it at suitable intervals, and this year has disclosed the first symptom of such a year already. Everything looks well and promising for a busy people, as Californians now certainly are.

Wheat still comes from the north to this port as fast as conveyance can be found, but the wheat situation everywhere has improved considerably during the week and a buying disposition is strongly manifested. Futures are advanced and confident. Barley is also going up and receipts are small, showing either that the crop was less than expected or holders are more confident, both of which are looking toward strength in the grain. Oats are doing a small trade and corn is unchanged. Choice rye is looking up a little. The weather has been admirable for bean harvesting, and present price is being crowded down by anticipation of large supplies. Beans are, however, good property and will be largely wanted. Peas are firm and supplies moderate. Millstuffs are doing well. Hay is in light arrival and choice is scarce, while other grades are ample. Meat receipts are large, but well disposed of. Butter is firm and advancing; cheese is steady, and eggs are looking toward a farther advance. Poultry is selling well. Potatoes are not active this week and supplies accumulating. Onions are unchanged. Citrus fruits are doing better as orchard fruits go out. Oranges have sold well, lemons are steady and grape fruit higher. Peaches are coming out of storage, grapes are scarce and high, apples are abundant and lower. Dried fruits are a little slow, but the grower has slack interest because the eager buyers have bought him out of the game. Almonds are reported selling a little below anticipations. Honey is still a question between producers and buyers, and trade is small. The shortage in some honey regions warrants stiffness in holding to a degree, at least, while prices are low. Hops are in dispute and transactions light. Wool is selling in the country, but little doing here.

We had a chance catch at conversation with Lt.-Governor Alden Anderson the other day and found him still holding the position he has occupied all through the fruit harvest, viz., one of satisfaction at the way the fruit trade has been running this year. Mr. Anderson emphasizes the unusual fact that this year all lines of fruit disposition have been at concert pitch. It is common to have special activity and good prices either for shipping or drying or canning, but this has been a year in which all have been active together and the result has been an exceptional high run of prices all around. This will, no doubt, restore confidence in fruit investments and improvements and knock out the pessimism which some have indulged in. As we have said before, those who want trees this year should look after them early.

The Portland Exposition is scheduled to close at the end of this week, and it is a good thing for the whole West that it has been a grand success in popularity and patronage. It is claimed that the final accounts will show that the Fair has been in point of attendance and in every other respect the most successful exposition ever held. Comparisons with the records made at the Transmississippi Exposition at Omaha—an exposition of about the same magnitude as that now drawing to a close, and which has been generally conceded to have been the most successful of all fairs—show that the Portland Exposition will outdo the showing made by the Eastern enterprise. This is considered more remarkable when the statement is made that Omaha had a population of 13,000,000 within a day's journey, while there reside within a similar radius of Portland not more than 1,800,000 people. The peculiar significance of this fact to the whole coast is that the world is now so much awake to the claims of this coast that it only needs an occasion to draw from all distances under the sun.

There is also a special agricultural feature of the closing fair which is significant, and that is the success of its live stock enterprise. It is reported that the stock show, which continued ten days in September, proved the crowning feature of the fair. It was a notable success, being by far the biggest show of the kind ever held in the West, and by far the best attended. During the time it was running, the attendance at the fair showed a daily increase over the average of about 5000, and the week ending September 24 was the largest in point of attendance of any during the fair period. This testimony to the appreciation of the nobility of the animal betokens man's advancement in civilization and is thus both directly and indirectly significant.

The date growing experiment at Mecca, in Riverside county, is progressing well in co-operation between the United States Department of Agriculture and the Agricultural Department of the University of California. The grower in charge is Mr. B. G. Johnson and he now has 700 imported palms and their offshoots growing well. The orchard is now about two years old and will not come into bearing for four years more. Mr. Johnson expects to visit the Persian Gulf region soon on a commission from the Agricultural Department at Washington to collect shoots of the date palm for propagation on the date farm, near Mecca. He expects to proceed to the principal date-bearing regions of Persia and himself superintend the selection of the suckers. He will thus feel that his plants come from good fruit-bearing trees and will be valuable from a commercial standpoint. It is, of course, a long distance proposition to get many trees of a single kind of date, as they can only be propagated by offsets, and it is stated that date palm yields from eight to a dozen suckers during its lifetime and then ceases reproduction, although the tree will continue to bear fruit. We do not know how accurate this statement is, but it is certain that the venture is too long and heavy for ordinary individual development. The Government is justified in its undertaking.

QUERIES AND REPLIES.

Fertilizers for Fruit Trees, Etc.

To the Editor:—Is manure as good for trees as artificial fertilizer, and what quantity would you use? Does manure lose its strength when exposed to the weather? After taking out old trees, it is very hard to make young trees do well on the same land. Cherry trees will hardly start the first year, and never make a strong tree afterwards. I have tried manure in the hole when planting, but it seems to dry the ground out too much. Do you know of any way of overcoming this? After planting sugar beets we never have a crop the next year. Is there any fertilizer that would profitably make that land as fertile as before? I notice that in Santa Clara county they tar or whitewash around the trunks of the trees. We have never practiced it around here. Is there any good derived from it?—Grower, Centerville.

Barnyard manure, not used in excess, is certainly as good and possibly better for orchard purposes than commercial fertilizers, because barnyard manure furnishes all the elements of plant food, and it introduces also into the soil an amount of decomposed vegetable matter which increases the humus, makes the soil more fertile and less liable to dry out. Barnyard manure loses its strength when it is allowed to go through a fermentation in heaps. It also loses strength when it is exposed to rains which leach out its soluble contents; but it can be allowed to dry out and will lose no important content if it is spread thinly, so that fermentation can not take place. It is certainly not wise to apply manure in the hole at the planting of trees. It is dangerous to the roots in such concentrated form, and it is likely to dry out the soil, as you say. The proper way is to plant the tree without manure, spread the manure not too thickly upon the surface of the land at the rainy season and allow the rains to leach out the fertility and to carry it down to the roots. In this way manure can be used without danger to the young tree.

Sugar beets are very exhausting upon the soil and restoration can be made by using barnyard manure freely, following with a hay crop and then following that with a beet crop. Direct application of barnyard manure to beets sometimes interferes with the culture. You can use commercial fertilizers, containing phosphoric acid, nitrogen and potash, which will not injure the beet, as the stable manure is likely to do.

Whitewash around the trunks of fruit trees serves two purposes: It prevents the sun from burning the bark, which is a very important matter, and, where the whitewash is made by stirring a certain amount of sulphur and coal tar, while the whitewash is still hot, you have a preparation which will stick well and is believed to be preventive of some insect attacks.

What Can an Agricultural Graduate Do?

To the Editor:—A short time ago I had a talk with you in regard to taking the course in agriculture. The other day one of my friends asked me what I expected to do when I graduated; I found that I could not answer definitely. Will you please tell me of some of the positions that have been filled by those graduating from the College of Agriculture? What sort of a position would one be likely to take in one of the experiment stations?—High School Student, Alameda county.

It is not possible to make definite statements about what a young man can do after finishing the agricultural course. There are many things that he may do, and his fitness for such undertaking will depend largely on himself, on how his own endowments and tastes run and on how well he has done his work in the University. His taste and qualifications may seem to run largely to actual farming enterprise and then he may undertake farming for himself, or as manager for others. There is quite a demand at present arising for skilled assistants of this kind, although the present compensation for it is less than can be commanded by teachers or engineers. As for the teaching in Agricultural Colleges and Experiment Station work the supply comes wholly from the best graduates from the College and they only are qualified for such undertaking. At present there is quite a sharp demand for qualified young men and they are receiving all the way from $750 to $1000 per year, according to the demand which their particular line presents, and their personal excellence in it. Successful Experiment Station men are now receiving promotions quite freely and it does not take long

for a person to make a reputation which will bring him into demand in two or three years by those who wish to fill places commanding $1200 or $1500 a year. Of course, above that many will go, which will depend upon individual talent, industry and general personal acceptability.

Gypsum and Alkali.

To the Editor:—We find where the alfalfa is of light growth that gypsum corrects the defect of soil. If applied for a number of seasons will it finally injure the soil? How much gypsum to the acre for the conditions suggested should be applied?—Farmer, Stanislaus county.

The application of gypsum to bare spots in an alfalfa field changes the black alkali to white alkali, which is less corrosive in its character, consequently alfalfa can make a catch on it where it would fail if the alkali was not changed in its character. It is not likely that you will use gypsum in excess, because in these bare spots there is likely to be pretty strong alkali and it will require a good deal of gypsum to transform it; then gypsum costs money, and you are liable to be checked up by the large expenditure which would be required to provide an overdose of gypsum. The amount which you can apply to the acre depends, of course, on the strength of the alkali and no rule can be laid down for it. It is a fact, however, that there is alkali in some places so strong that the amount of gypsum required to transform it would cost more than the land is worth. Another point should be considered. The application of gypsum is not a cure for alkali; it is simply a palliation for it. You can transform black alkali into white and still have alkali in such quantities that nothing will grow. The only real cure for alkali is to wash it out of the soil with generous flooding of the surface and provision for adequate underdrainage at a depth of about four feet. In this way the alkali is actually taken out of the soil and carried away by the water. In the gypsum treatment it is not taken away, but simply somewhat modified in its character.

Tree Tanglefoot.

To the Editor:—Will you kindly inform me if the article known as tree tanglefoot, sold by traveling agents, who claim that it will destroy the canker or measuring worms, is injurious to trees? I have been informed that the Government has issued circulars of warning that tree tanglefoot will kill the trees. My prune crop has been destroyed by worms for three years. I have the ground well cultivated. I have tried tar on paper, cotton and screen net without any good results; hence I seek for information.—Grower, Sonoma county.

We certainly would not think for a moment of applying tree tanglefoot directly to the bark of a tree unless experiments have been made showing that it was harmless. We do not know of any such experiments, and presume that the United States Department of Agriculture may have issued a warning to band the trees with paper and put the tanglefoot on the paper, which would seem to be a more rational proceeding; at least safer to rely upon until demonstration can be had that the tanglefoot may be directly applied with safety. If any one knows that it can be safely used in this way, we shall be glad to hear from him. It would manifestly be safer to use it on the outer rough bark of an old tree than to apply it to a young tree. Its efficacy of course must rest upon catching the wingless female moth which will soon be coming from the ground to lay her eggs on the twigs. As she cannot fly she must crawl up, hence the effort to entangle her feet.

Stocks for Walnuts.

To the Editor:—I wish to find out which is the best stock to bud walnuts on—soft or hard shell, or the native walnut? I understand that the Eastern black walnut will not do on account of its slow growth compared to the soft shell. A wild walnut grows in the mountains of Ventura county. Do you think it is the black? The nuts are round, about ¾ inch in diameter and the hull dries on the nut. Is it the same as the black walnut that grows in the northern part of the State?—Orchardist, Ventura county.

So far as experience now goes, the California black walnut is on the whole the best stock on which to grow English walnuts. This walnut grows in various parts of the State, the size of the tree and the size of the nut depending upon the depth of soil and the amount of moisture which are available for its growth. The same tree which becomes somewhat small and shrubby in your mountains grows to large dimensions and bears a much larger nut in the rich river bank lands in the central part of the State. Seedlings grown from the nuts which you speak of will be satisfactory, however, providing the nuts are well filled and produce a strong seedling.

Sweet Clover—Responsibility for Bad Seed.

To the Editor:—You identified a weed for me as sweet clover recently. What I now want to know is this: If this clover fails to blossom this year, will it die? It was sown last spring. I have a letter from a seed dealer declaring that it will die out if it fails to bloom, but I doubt if he is right. Do you know if a merchant who sells such seed with alfalfa seed is liable for damages?—Farmer, Stanislaus county.

The sweet clover, which is most commonly found in alfalfa seed, is melilotus alba. This species is a biennial; consequently you would not expect its blooming the first year, nor does it die at the end of the first year, but will bloom before dying. The probability is that seedsmen are not liable for damages when the seed they deliver contains weeds, or is in some other respects different from what is intended. Nearly all their catalogues include declarations specifying to what extent they guarantee their seeds and that their liability is limited to supplying good seed in place of that which is defective. Unless you have a special contract for a certain seed, or variety of seed, the seedsman is protected from liability by the declaration in his catalogue.

Rather a Salt Case.

To the Editor:—I own forty acres of land in the Los Angeles river bottom, 2½ miles from the ocean at Long Beach. This land is a gray sandy soil, damp land. Surface wells 10 to 12 feet supply sufficient water for cattle and domestic use, but it tastes brackish. The west half of my place contains too much alkali for most any vegetation. I planted and replanted during winter and this summer without raising anything. Part of this land was formerly pasture, principally salt grass and a few spots of Bermuda grass. The land lays quite level with a slight slope to the south. I would like to know the best grasses for pasture on such soil. There is much land of this kind running down and up the coast.—Owner, Los Angeles.

Whether you can get anything to grow on the land of which you speak depends entirely on the amount of salt that the water circulating in the soil moisture contains. We know of no useful plant that will stand more salt than Bermuda grass, unless it be beets, and if you should attempt to grow beets and fail you would almost be forced to the conclusion that the land is sterile, unless you can arrange a system of surface flooding with fresh water and under drainage and carry off the leaching, and in that way actually reduce the amount of salt present in the soil. There is nothing that can be applied to the soil to neutralize the action of the salt.

Celery Growing.

To the Editor:—Have you publications in reference to celery raising or other treatment for peaty or muck land?—Farmer, Indiana.

Quite full discussion of methods has been published in our columns and full details in our book "California Vegetables." You will, however, find little to help you with the treatment of peaty or muck land, because the so-called peat land which is used for celery here has scarcely any resemblance to the muck land which you know in the East. The vegetation is not so fully decomposed, but the soil is very open and light and sweet and does not need liming as the Eastern muck soils do; in fact, the soils are very different from those which you have to deal with and therefore you have little or nothing to learn from our experience in California.

Are Jerusalem Artichokes a False Alarm?

To the Editor:—I wish you would favor me with information touching the culture of Jerusalem artichokes for hog food.—Intending Planter, Chico.

We have published nothing recently on the culture of the Jerusalem artichokes for hog feed, because, although the tubers were freely distributed about a decade ago, no one who planted them continued long to grow them as a crop and we were obliged to infer that there was some difficulty about it, and that the plant is not so valuable, as is often described by those who begin enthusiastically to grow it. Our own impression is that they are of very doubtful value, except as grown in gardens for table use.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 9, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather was warm and clear most of the week, with light rain in some sections Friday and Saturday. Conditions were very favorable for grapes and beans, but the absence of heavy rains is causing a scarcity of feed and stockmen are becoming anxious. Heavy shipments of Tokay grapes were made during the week from the American river district, and half of the crop has already been gathered and disposed of. Fruit drying and raisin making are progressing and nearly completed in some sections. Apples are of superior quality and the crop is large. Citrus fruits are in excellent condition. Hay is practically all secured except the late crop of alfalfa. Hop baling continues. Fall plowing and dry seeding are in progress.

Coast and Bay Sections.

Clear and warm weather prevailed most of the week. Light rain fell in portions of the coast districts, but caused no material damage to crops. In Humboldt county the showers were sufficient to improve grass and retard fall plowing to some extent. Grape harvest continues and a fair crop is being shipped to markets and wineries. Apples are of excellent quality and the crop is the largest for several years. Fruit drying is completed in most places. Tree pruning is in progress. Bean harvest is nearly completed and thrashing is progressing rapidly. The bean crop in the vicinity of San Luis Obispo is reported very large and of good quality. Fall plowing is in progress in some sections.

San Joaquin Valley.

Clear and seasonable weather prevailed during the past week, which was favorable for maturing all crops. The raisin crop is nearly all cured and being moved to the packing houses. Some of the second crop of raisins is still on the trays. Grape harvest is progressing rapidly; large shipments of Tokays continue to eastern markets, and wineries are in full operation. Olives are making good progress and promise a large crop. Alfalfa thrashing continues and the crop is good. Stock are healthy and in good condition and dry feed is plentiful.

Southern California.

Clear and warm weather prevailed during the week, with light drying winds a part of the time. Conditions were very favorable for fruit drying, raisin making and bean harvesting, all of which are progressing satisfactorily. The heat caused some damage to walnuts in places where water is scarce. The walnut crop is generally of good quality, but will be less than that of last season. The extremely dry weather made frequent and generous irrigation necessary, but, in most respects, was beneficial to crops. Raisin making is well under way and the crop is turning out very good. Oranges continue in first-class condition and the prospect for a large crop is excellent. A heavy crop of beans is being harvested. Irrigation water is plentiful in most places. It is reported that fire has destroyed several tons of sacked beans and seriously damaged fruit orchards in the foothills east of Santa Barbara.

Eureka Summary.—Cool, with light frost at close of week. Recent rains greatly benefited feed on high ranges. Large shipments of apples continue.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Oct. 11, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	1.50	1 76	3 29	2 67	74	42
Red Bluff	.18	.18	7.86	1.49	88	52
Sacramento	.00	.02	5 47	.81	88	52
San Francisco	T	T	7 20	.88	84	54
San Jose	.00	.00			90	48
Fresno	.00	T	4.99	.64	96	46
Independence	.00	.24	45	.42	88	44
San Luis Obispo	.00	.03	4.60	.97	90	42
Los Angeles	.00	T	1 14	55	92	54
San Diego	.00	66	17	.29	78	56
Yuma	00	54	81	79	102	60

French Prunes and Walnuts.

State Commission of Horticulture, Report on the Prune Crop of 1905 in the Consular District of Bordeaux, France, Sept. 15th, 1905.—The prune crop in this consular district will be a good average one, the fruit being of fine quality, sweet, of good size and free from disease. The season on the whole has been warm and dry and conditions generally favorable except for the past two weeks when it has been rainy.

Walnut Report for 1905 in Bordeaux District, France, Sept. 15th, 1905.—Confirming the preliminary report of Aug. 17th, 1905, the walnut crop of this season will be smaller than for fifteen or twenty years past. In consequence of the small crop, the fact that speculators have bought up a considerable amount of it, and the further fact that practically none of last year's crop remains unsold, prices are, and will be unusually high.

AGRICULTURAL SCIENCE.

Some Facts and Fancies on Nitrogen Bacteria.

Our readers are, of course, widely interested to know what can be gained in California by the much-discussed recourse of introducing bacteria into the soil to help leguminous plants seize upon atmospheric nitrogen. Nothing but actual trial and careful observation of results will determine the facts. Mr. J. Allen Osman of Whittier, Los Angeles county, has been doing something in this line and he gives some interesting writing to the Los Angeles Cultivator, which is in part a report of observation and in part a discussion.

An Experiment.—Mr. Osman says: At my home place, Ventruilla ranch, Rivera, in the fall of 1903, I sowed Canadian peas on twenty-five acres of walnut orchard. This ground had never, to my knowledge, been planted to peas before. In the spring of 1904 I turned this crop under and, so far as I am aware, there was no special improvement noticeable in the crop, although the crop that year was much larger than the preceding year, but I could not ascertain that there was any appreciable difference between the crop on this ground and that on my neighbors. In the fall of 1904 I sowed the same twenty-five acres again with peas. I also sowed another field of twenty acres to peas and another piece of five acres. Neither of the last two mentioned had ever had peas sowed on them to my knowledge. I sent to Washington for some bacteria to inoculate the seed. I sowed probably what would be an acre of the first twenty-five acres which was sown the year before. Note carefully, please, the results. In the spring of 1905, just prior to plowing this under, I pulled up from various parts of the field, roots. Where the seed had been inoculated there was a line of demarkation which was as plain and distinct as a curb line on a street. Within the zone of the inoculated soil the roots were covered with nodules as thick as they could possibly stick. Outside of this zone where the peas had been the year before, the roots had quite a number of nodules, but not as large nor as many as where the ground had been inoculated; whereas, in the other two fields where peas had never been sown before there were only rudimentary nodules and not very well defined. Under a glass they could be discovered but they were not prominent or well defined to the naked eye.

I have a place in this orchard, which I will designate as No. 1, sown in the fall of 1903, in which there has been a wash-in of white sand and there are four or five walnut trees which grew well until they were about six years old and for the last three years there was no appreciative growth prior to this year. The fruit on the trees dried up and dropped off and the trees looked as if they were well nigh their end. I was going to remove them when it occurred to me that these trees offered a most excellent opportunity for experimentation. I could see no appreciable difference in the trees last year, but this year (and, by the way, they are within the zone of the inoculated seed) I could discover that they had grown materially and they have a reasonable amount of fruit upon them which they have matured. In this bunch of poor trees, two trees stand outside of the inoculated zone and they have not done as well as those within the above described limit. Whether this is a mere coincidence or not, I leave it to the reader to judge. I am convinced that by continuance of this method of green forage that we will bring those trees back again to vigor. The reason I think so is because formerly this particular part of the orchard was good ground, but, being in a sort of arroyo, the sand washed in in one of the floods which visited California some years ago. There are about three feet of good soil, then about two and a half or three feet of this white sand, when we again strike good soil. My thought is by a series of experiments to determine whether by fertilization we can force the roots down through the sandy stratum and find feeding ground below. I think we can draw the following conclusions from the above narrative: That inoculating the seed produces immediate results; secondly, that where peas have been sown the year before that inoculation takes place the second year but not to so marked a degree as where the seed is inoculated; and, thirdly, that the first year where peas are sown inoculation is not of much benefit; that the benefit would be the same as any green forage turned over but it prepares the ground for inoculation of the subsequent crops; that the results to the growth of the tree and to the fruit-bearing qualities are no doubt vastly enhanced and that the nitrates given to the ground by this method of culture will be of great benefit to the walnut industry. I have no doubt but that many men have observed these same things, as above narrated.

Are They Needed?—In an extended review of his experiments with alfalfa bacteria, A. D. McNair in Farm and Ranch writes that "the Pacific States seem to have an abundance of alfalfa bacteria, as is proved by the fact that the nodules are found on the alfalfa root in all these States. On the slopes east of the Rocky mountains there is also a good supply of these bacteria, but when we reach eastern Kansas and Nebraska they become less frequent or are not found at all. From the longitude of eastern Kansas to the Atlantic ocean it was supposed, until two years ago, that alfalfa bacteria were present only in the rarest instances; but, thanks to the researches of Prof. Hopkins of Illinois, we now know that the bacteria of melilotus, or sweet clover, is practically identical with alfalfa bacteria and that where melilotus grows wild along roadsides and creek banks, the land is already inoculated with alfalfa bacteria."

It has been proved by many experiments that if alfalfa bacteria are not in the soil they may be put in by artificial means and the process of putting them in is called "inoculation."

Soil may be obtained from a field which already has the bacteria, and may be scattered on the field which is to be sowed; or "pure culture" bacteria may be obtained from companies who deal in them, with full directions how to use them. If the soil itself is inoculated it is called "soil inoculation." If the seed is inoculated, it is called "seed inoculation."

Much testimony has been collected by the United States Department of Agriculture and by private companies showing that farmers have gotten excellent results by inoculating with the pure culture bacteria. My own experience with them was not good, but with soil from an old field it was good. I find, also, that such authorities as Prof. Hopkins of Illinois and Mr. Wing of Ohio are more favorably impressed with the old method than with the pure culture method. In using soil from an old field I think it is safer to drill it in the ground than to scatter it broadcast where the bright sun shines on it. for bacteria "love the darkness better than the light." As regards quantity, I think that from 100 to 500 pounds of soil should be used per acre.

Special Germs.—There is a widespread belief that alfalfa bacteria are the same as cowpea bacteria, and that if the land has grown cowpeas it is thereby inoculated for alfalfa. I do not believe that this is the case, and I will offer as evidence a leaf from my own experience.

On the experiment farm at Southern Pines, N. C., I found that cowpeas, violet beans, soy beans and peanuts had each and all nodules on their roots, whether planted on one part of the farm or another, proving conclusively that the soil was naturally inoculated by these legumes. When, however, I sowed alfalfa, crimson clover and hairy vetch on the same land I found no trace of a nodule, and it was only after alfalfa was inoculated with alfalfa soil, clover with clover soil and vetch with vetch soil that nodules appeared on these legumes. Surely if cowpea bacteria are the same as alfalfa bacteria, I ought to have gotten alfalfa nodules on land which had previously grown cowpeas, and which had cowpea bacteria in abundance. Facts, as I know them at present, seem to indicate that the bacteria of any legume may be used to inoculate only when the two plants are very closely related, as is the case with alfalfa and sweet clover, which are indistinguishable in the early stages of their growth, or as is the case of peas (English peas) and vetches, which latter are often called "wild peas."

Not in Stable Manure.—Another popular belief is that stable manure contains alfalfa bacteria, and that if land is dressed with much manure it is thereby inoculated. I find that this view is favored by Mr. Wing of Ohio, and I hesitate to oppose him on anything pertaining to alfalfa, for I know how well posted he is on the subject. Neither would I do so were it not for the fact that I previously entertained the same opinion and changed my mind as the result of an experiment which I made while superintendent of the experiment farm at Southern Pines, N. C. I felt so sure that manure would inoculate the soil that I waited expectantly to see the alfalfa grow on two plots, one of which had cow manure on it and the other a heavy dressing of manure from the horse stable. I was doomed to disappointment in both cases, for after examining a great number of plants I reluctantly came to the conclusion that the manure had no effect on nodule development.

One plant out of perhaps a thousand had nodules, but the same was true of plants that received no manure. That manure may favor the development of alfalfa bacteria when they are already in the soil may possibly be true, but I do not think it furnishes them unless it is made from alfalfa hay or the hay of nearly related plants in the Medicago family, for alfalfa's botanical name is Medicago sativa.

Trial Suggested.—Whether the quality of alfalfa is improved by having an abundance of bacteria is a question on which there is no direct evidence which has come to my notice, but there is some direct evidence which favors an affirmative answer.

In an experiment conducted at the Michigan experiment station, in which one plot of cowpeas was inoculated and another was not, it was found that the peas from the inoculated plot had nearly one-half more crude bacteria than peas from the other plot, hence were more valuable for feeding purposes. If this is true of cowpeas it is probably true of alfalfa also, and it raises the question whether an advantage may not come from artificial inoculation even where land is slightly inoculated to start with.

I hope farmers will try inoculation wherever they sow alfalfa, or at least part of the field, and thus demonstrate for themselves whether their crops are benefited by it.

FRUIT MARKETING.

A California Fruit Grower in Great Britain.

To the Editor:—Forty years had passed since last my feet trod the streets of London. Reports of very varying character often reached me, some favorable, some otherwise. It was not easy to learn exact conditions even in my business as a fruit grower. British fruits, it was alleged, surpassed ours; their flavor was way ahead. Now flavor is a very intangible thing to argue about. It's a matter of individual taste very largely, and it is proverbially useless to found argument on a thing so subtle and so variable. Disparagers of California fruit could not say British fruit was sweeter; analysis would readily decide that; nor could they claim it was juicier, expressing and weighing the fluid content would settle that; size and color superiority could equally easily be put to tangible proof; but flavor!—ah, there! Who could pronounce authoritatively? So, although I frequently put in an inward demurrer when my British friends here smacked their lips over their recollections of delicious hot-house peaches and grapes, and over the incomparable June strawberries, the best I could do was to say that from my forty year-old memories I did not recall any such superiority in flavor.

It happened there were other things in which I had more or less keen interest, and was anxious to get just impressions concerning. These were the European parcels post system, European scenery, European education, European art, European museums and European religion. There was opportunity here for a quite lengthy programme; but Herbert Spencer says that "varied activities" make happiness, and I wanted to be happy. So my youngest daughter and I started in mid-strawberry season for the East. Wherever we could get them we sampled the strawberries. We went via Portland, Vancouver City, the great Rockies and Banff; the great lakes and Toronto, Niagara, Montreal and Quebec. Strawberries we ate, various in kind and flavor as locality and species varied, but neither of us found eastern or central Canadian strawberries any way transcendent. We ate strawberries aboard the good ship Tunisian in mid-Atlantic, we ate them in England, Scotland, and I think Wales. We, I believe, concur in the verdict that if the most prejudiced son of John Bull, or daughter, either, for that matter, were blindfolded and given California strawberries and British strawberries indiscriminately, it would tax their palates very severely to say which were British and which Californian.

The same thing might be said of their peaches. These, of course, were grown in hot-houses, as are their tomatoes, very largely. The claim was made to me in England that the peaches had superior flavor because they were grown under glass. I asked why that should cause any improved flavor. "Oh," was the reply, "they don't have any rainfall on them!" "Well," I said, "our California peaches don't have any rainfall on them." Equally good soil, equally (at least) warm climate, equally good water, same old sun, only more of him, though our days are somewhat shorter. Fact is, the difference consists in this, that from the small amount grown and handled in England, fruit can hang on the tree till fully ripe; then it is carefully prepared and packed in some soft material, and sold and eaten the day it is picked. Then it tastes of silver, oh, "so strong." In Solomon's fruit store in Piccadilly, London, I saw six peaches, not so fine looking as friend Hauss grows on the Feather river either, prettily packed in a small round basket, and marked 8s 6d, or about $2.05. Grapes in same window 8s per pound. This in mid-August. Solomon's fruit I did not patronize, but sampled peaches and grapes elsewhere and found them very much the same as I find fruit picked ripe from the tree in California.

As to apples and pears there is no claim made either in Liverpool, Edinborough, Glasgow or London among the fruit dealers themselves that English or French goods are equal to Californian. "Our apples," said one leading expert, "are, to use a slang expression, 'not on the same street with yours.'" One exception was made to this. Cox's Orange Pippin was spoken of as excelling every other apple, but there are next to none grown. Moreover, the British pack was stigmatized as being unreliable and dishonest, while the fairness of the California pack, especially of W. A. Block's, the best known brand there, was highly appreciated. But, though California leads Great Britain and France in apples, Oregon leads California. Oregons sold last year as high as 23s and 27s per box. Californias averaged somewhere less than half these figures.

Pajaro valley must look to its laurels and send only its best if it means to stay in the market against Oregon competition.

In soft fruits, plums, peaches, apricots, California is seriously handicapped as against France, the Channel islands, Portugal and Spain.

It sounds fine to talk of the world's market as though there were limitless demand for these fruits, and California could supply that demand. Mr. Jacobs (of Garcia, Jacobs & Co., London fruit dealers), told me that under present conditions the British market could not consume more than four carloads weekly of

these soft goods, and the French and other supply yearly increases.

Per contra: Dried apricots at prohibitive figures. French Bon Cretien (Bartlett) pears were selling, at Covent Garden auction, in boxes containing eighteen, packed in excelsior and paper, at 31s per box. These were nothing like California goods, either in size or color. I saw no California peaches, other than canned, on the English market; but on my return trip they were served almost daily on the good ship St. Paul, and were quite eatable even when Long Island Sound was reached, though they were not by any means fine samples of what California can do, and had journeyed to Britain and back to America.

Our prunes, I regret to say, are discredited. At the Army and Navy Junior Stores, Regent street, London, where an immense business is done, I saw no prunes from California, and inquired why. The stores had ceased to buy them because they came to hand mouldy. "You do not mean sugared?" I inquired. "No, mouldy!" Visions of prunes, hot and steaming from the dip, jammed into boxes in the Santa Clara valley, as I have seen them, marvelling, floated before my eyes.

"You may fool some of the people all the time, and all the people some of the time, but you can't fool all the people all the time." Packers, remember Abraham Lincoln when you pack.

It will ultimately serve your own interest, as well as that of your grower. EDWARD BERWICK.

Pacific Grove.

THE VETERINARIAN.

Answers to Inquiries.

Prepared for the PACIFIC RURAL PRESS by DR. CHARLES EASTMAN, Veterinarian, San Luis Obispo.

LAMENESS.

TO THE EDITOR:—I would like to have a cure for a mare that is lame in right hind leg; the muscles or cord above stifle seem to be drawn or tight; seems to flinch when pressure is put against the muscles above the stifle; also, when you raise leg forward and up she seems to have a hard time to get it down again; she has been this way about a year and a half.—SUBSCRIBER, Maxwell.

A cure is very doubtful, and I could not suggest a line of treatment without an examination, for the condition is doubtless chronic. Get your veterinarian to make a careful examination of the animal.

PARALYSIS OF THE LIPS.

TO THE EDITOR:—A 3-year-old gelding has apparently almost lost the use of its lips; the lower lip hangs down, exposing the lower jaw and teeth, and the colt is unable to use it to any extent in eating; there is no sign of any kind of sickness or disease, but the horse lost weight slightly when this apparent paralysis of the lips first appeared; there is a slight swelling of the cheeks on both sides where the flesh covers the upper and lower back teeth. The colt eats hay better than it did and is now in fair condition.—H. S., Sultana.

I think your colt is suffering from a paralysis from injury, and the swelling along the molar teeth is caused by accumulation of food, which should be removed at least twice a day. The food should consist of mashes, gruels and greenstuffs which can be easily masticated. Have the teeth examined by a qualified veterinarian. If this condition has not existed too long, the chances for recovery are good.

Hints for Home Practice.

Dr. G. A. Waterman, of the Michigan Agricultural College, prepares for the Orange Judd Farmer a description of instruments which all stockmen should have ready for use. He writes:

While it is not advisable for the farmer to attempt much stock surgery, yet there are times when it may be necessary for him to do some. On this account every farmer should keep a few instruments and apparatus at hand ready for use. Here, as with medicines, the important thing is to have them ready. After being used they should always be thoroughly cleaned and laid away in a place prepared for them.

A KNIFE.—While it may not at first thought seem to be necessary for a farmer to keep a knife especially for surgical work, yet it should be done. If he does not, he will resort to his jackknife, which is used for everything else and besides is carried in a dirty pocket. As it generally has two blades, each with its own spring, it is hard to clean. Nearly every farmer does more or less castrating, and the knife should be kept for this if nothing else. A medium sized, one bladed jack knife will answer very nicely. Before using instruments they should be allowed to lie for a few moments in a 3% solution of carbolic acid, and when not in use during the operation they should be in the solution.

OTHER APPLIANCES.—Every farmer should have a bulb syringe, as it is very convenient for flushing out wounds, either in cleaning them or injecting medicines. A hard rubber syringe is also very convenient for injecting medicines into wounds, and also for giving small doses of medicines. One holding an ounce is a convenient size.

A 2-ounce glass graduate can be bought at supply stores for 10 cents—very useful in measuring medicines.

There should be in the instrument and apparatus chest two or three different sized bottles for giving medicines. Long necked bottles are more convenient. Beer bottles answer very nicely. One holding a quart will be more convenient for giving salts and other medicines where the dose is large. A pint bottle will be more convenient for the ordinary sized doses. There should also be a still smaller bottle for giving medicine to sheep and small doses to horses. The small long necked olive oil bottle answers nicely for this.

Every horse stable should have a twist for holding horses when it becomes necessary to operate or to dress wounds. It should be used judiciously, as it can be made an instrument of great torture. One can be made by taking a piece of fork handle about 2 feet long and boring a hole through it 1 inch from one end. Through this hole pass a small rope and tie the two ends, making a loop 6 or 8 inches in diameter.

FOR UDDER TROUBLE.—Every dairyman should have a milking tube to use in drawing off milk when the teats are badly cracked or sore; also to use in case of milk fever. Whenever the tube is used great care should be exercised to see that it is aseptic, clean. It should be placed in the 3% solution of carbolic acid before it is introduced to the teat, and then dipped into carbolized vaseline just before it is inserted.

An apparatus for stirilizing air in the treatment of milk fever is valuable. Get from a bicycle repair shop a piece of inch steel bicycle tubing, about 6 inches long. Fit into each end a cork, through which is passed a short piece of glass tubing or a turkey quill. To each of these glass tubes attach a piece of rubber tubing about 6 inches long. A bicycle pump, milking tube and a small package of stirilized cotton from the drug store completes the outfit. Be sure the bicycle tubing is clean. If necessary to use it, remove one of the corks from the tubing and fill it with some of the cotton; be sure the hands are clean in handling the cotton. Attach the milking tube to one end of the tubing and the bicycle pump to the other. Remove all the milk from the udder, sterilize the milking tube in a 3% solution of carbolic acid, insert it into the teat and pump the air into the udder. The air by passing through the cotton in the tubing is freed from germs.

SURGEON'S NEEDLES AND SILK.—When a wound gapes open, two or three stitches with surgeon's silk will hold the edges together and it will heal much more quickly and will leave a much smaller scar than if neglected. Before a wound is sewed up it should be thoroughly cleaned. This is best done by forcing water into it with a bulb syringe. After it is perfectly clean, cut out any ragged pieces of tissue, then inject into it some of the 3% solution of carbolic acid, put in the stitches, drawing the edges just together, leaving an opening an the bottom for drainage, as there will always be more or less discharge. The after treatment is to flush out gently each day with the 3% carbolic acid solution.

A small pair of forceps will often be found very handy. Sometimes large blood vessels are cut and it is necessary to ligate them. By placing a clean sponge or piece of cloth in the wound to soak up the blood and then remove it quickly the end of the vessel can be seen, and grasped with the forceps. If not too large, a few twists may stop the flow of blood or, if not, a small thread can be tied around the end.

TROCHAR AND CANULA.—This instrument should also be in the set, as it is often needed to relieve bloating. The horse trochar and canula is best to have, as it is smaller and can be used for both horses and cattle. Tapping with the instrument is a comparatively simple operation. It should be first washed in the 3% carbolic acid solution, as should also the flank where it is to be inserted. The point of the instrument is then placed against the distended flank about its center, directed downward and forward and thrust in nearly its entire length. The trochar is then withdrawn, the canula left in place and the gas escapes. No after treatment for the wound is needed, except to wash with the carbolic solution for a day or two. The horse is tapped on the right side, cattle on the left.

A piece of ½-inch rubber garden hose with funnel to fit is also a convenient apparatus to have. It can be used for giving injections per rectum, for flushing out the vagina and womb and also for dislodging the obstruction in case of choking.

For those who are quite extensively engaged in pig raising, the pig forceps should be added to the list, as they are sometimes needed to extract a pig which, if not removed, will cause the death of the entire litter.

THE VINEYARD.

French Wine Trust.

Consul Bardel of Bamberg, Germany, reports that a wine trust of the wine growers of southern France is to be formed, to comprise the six important wine growing districts of Herault, Aude, Gard, Pyrenees-Orientales, Bouche-du-Rhone and Var.

The growers participating in this trust are to sign a contract binding for fifty years. Each one has to state the extent of his vineyards, which is not to be increased without the consent of the trust. The members bind themselves to state the volume of their production and to give the exact figures of how many hectoliters were pressed in their establishments, as also how much alcohol their wine contained. Each grower obligates himself, under penalty, not to blend wines nor to sell grapes or cider. He will be allowed to set aside a certain amount for home use, but has to state the exact quantity set aside.

The trust will buy up the whole harvest previous to August 15th each year. The price to be paid will be 1 franc (19.3 cents) for each degree of alcohol, to be paid for in quarterly rates due in December, February, April and June. This price may be advanced by participation in the annual profits of the association, for every member is to get pro rata 45% of the net profit, besides 10% for division among his laborers. The net profit is to be fixed after a deduction of 5% for interest on the capital invested, as also of the sums necessary for reserve and sinking fund. The spoiled wines and those not containing more than 8° of alcohol will be distilled by the company. The owners of such wines receive the sales price of the alcohol thus gained after deducting costs. If overproduction is proved the company is to have the right to distill a part of the total output.

The capital for this trust is to be $57,900,000, provided the wine growers participating guarantee the production of 5,283,400 gallons per annum. One-half of this money is to be expended for building cellars capable of holding 7,925,100 gallons of wine. All wines are to be sold in sealed bottles. This plan has created much enthusiasm among the growers in all the districts. They are, however, somewhat afraid of the competition on the part of the growers outside of the six districts named. They intend, therefore, in the course of time to induce these outsiders to join the trust.

CEREAL CROPS.

The Danger in Spelt.

A correspondent asked recently about spelt, and we replied that we could see little use for it in this State where barley and rye are as hardy plants as we have any use for. It seems that the recourse to spelt in the northern tier of States has disclosed a menace to the wheat crop. An announcement is made by the Michigan Experiment Station that complaints from all sections of the State of Michigan came to the station in the late spring of 1905 that wheat fields were badly infested with rye. Rye is easily distinguished from wheat. Its greater height, bluish green color and peculiarly shaped head point it out with certainty, and the farmer has little difficulty in cutting practically all the rye from his wheat fields if he feels so disposed. Rye flour differs enough from wheat flour to seriously injure the latter if rye forms any large share of the crop.

Within the past few years a variety or species of wheat known as "spelt" has been introduced into the State as a stock food. Spelt is sown in the autumn, as fall wheat is, and ripens at practically the same time the following summer. It closely resembles wheat when growing, but the threshed spelt usually resembles barley much more than it does wheat, since the chaff is not removed by the machine, but is left firmly attached to the kernels. Moreover, two kernels are usually attached to each other in the threshed spelt, since the head is broken up by the threshing machine into the spikelets, and not into the individual kernels. Millers are complaining, however, that wheat is coming in containing some spelt from which the chaff has been removed, and that the wheat is therefore adulterated with a seed indistinguishable from the wheat kernels themselves. The flour of the spelt differs from that of the wheat so far that it does not make good bread when the two are mixed.

It becomes important for the farmer to be able to distinguish wheat from spelt, either when growing or when in the threshed grain.

The straw of spelt and wheat are practically identical and we shall have to look for the distinguishing differences in the head.

The heads of wheat and of spelt are both broader in one direction than in the other and are flattened on two opposite sides. Now if a wheat head be laid upon a smooth table upon one of its broad, flattened sides, with the straw end pointing to the observer, the little spikelets containing the kernels and together forming the head, will be on the upper and lower sides; if a head of spelt be similarly placed on its broadest side, the spikelets will be on the right and left sides, not on the top and bottom. In other words, the spikelets of wheat are broad, holding sometimes as many as four kernels, in rather loose chaff, while the spikelets of spelt are narrow, held snugly together by the enveloping chaff and contain but two kernels.

Again in the wheat head, the straw is continuous

through the whole length, very crooked indeed, yet it is there; in the spelt, on the other hand, there is no continuous straw running through the head, but the spikelets are held together by joining one to the upper inside surface of the next below by a little stalk or pedicel. The spikelets are thus alternately arranged in the head, first one on one side, then the next on the other side, packed closely together and forming a compact head. In threshing the wheat, kernels readily fall from the loose hull or chaff which surrounds them; the spelt kernels find the chaff incurved about them, and the two in the same spikelet are so closely bound together that the head breaks up, each spikelet being torn loose from its neighbors by the breaking of the pedicels which hold them together. A better threshing machine may easily break up these spikelets and turn out the spelt grain free from its enveloping hulls.

Turn now to the kernels themselves which are liable to be found in seed wheat. Here, too, are differences so well marked that the two species of wheat may readily be distinguished from each other. Place a grain of wheat and a grain of spelt on the table side by side, the groove side down. It is noted at once that the upper side of the wheat kernel presents an irregular, broken contour, while that of the spelt is a fairly even curve from one end to the other. Next the germ of wheat is sunken and broadly oval, while the germ of the spelt is narrower, elliptical and elevated to form part of the somewhat regular curve of the back of the kernel. The wheat kernel is relatively broad, short and blunt, while the kernel of the spelt is longer, relatively narrower, and drawn out to more of a point at each end.

THE STOCK YARD.

State Fair Premiums.

OFFICIAL REPORT.

We are indebted to Mr. Albert Lindley, secretary of the California State Board of Agriculture, for the following report of premiums awarded in the animal classes at the recent State Fair in Sacramento:

HORSES.

Class I. Thoroughbred Horses. — Stallions: Claudius, best 4-year-old, Wm. Gardner, Sacramento; Vulcan, second best, Dan McCarty, San Francisco. Mares: Wandering Nun, best 4-year-old, and Nunie of La Siesta, best 1-year-old, La Siesta ranch, San Jose. Family: Zolock, best stallion other than thoroughbred, and five colts, Ben Davies, San Bernardino; Wanda, best dam other than thoroughbred, and two colts, La Siesta ranch, San Jose, silver medal.

Class II. Standard Trotters.—Stallions: Zolock, best 4-year-old, Ben Davies, San Bernardino; Iran Alto, second best, Jas. W. Rea, San Jose; Silver Hunter, best 2-year-old, L. H. Todhunter, Sacramento; bay colt, best suckling, and Search Me, best gelding, any age, La Siesta ranch, San Jose. Mares: Wanda, best 4-year-old, La Siesta ranch, San Jose; Abbie Woodnut, second best, Mrs. E. W. Callendine, Sacramento; Datura C., third best, Mrs. J. E. Bates, Sacramento; Bernise P., best 3-year-old, S. U. Mitchell, Sacramento; bay filly, best suckling filly, Mrs. E. W. Callendine, Sacramento.

Class III. Harness Horses.—Span, best 16 hands, W. A. Caswell, Sacramento; Lady Keating, best single animal, 15 and under 16 hands, Mrs. E. W. Callendine, Sacramento; Lady Belle Isle, best single animal, 16 hands, La Si sta Ranch, San Jose; Jim Vorhees, second best, F. W. Foskett, Concord.

Class IV. Carriage Teams.—Allie B. and Opal C., best matched span, J. Crouch & Son, San Jose, gold medal.

Class VII. Percherons.—Stallions: Sansounet, best 4-year-old, J. Crouch & Son, San Jose; Cesar, second best, and Ministere, third best, and Velo, best 3-year-old, and Cosaque, second best, Dunham & Fletcher, Woodland; Metayer, third best, J. Crouch & Son, San Jose; Sarcier, best 2-year-old, Dunham & Fletcher, Woodland; Franconi, second best, and Ildervert, third best, J. Crouch & Son, San Jose. Mares: Kalona and filly, best mare and colt, 4 years old and over, and Keota Maize, best 4-year-old, and Queen, best under 1-year-old, C. Chipman, Wilmington.

Class VIII. Belgians.—Stallions: Argument, best 4-year-old, Dunham & Fletcher, Woodland; Dosto, second best, J. Crouch & Son, San Jose; Sidi, third best, Landis Bros., Folsom; Bothade Inevaucampo, best 3-year-old, Dunham & Fletcher, Woodland; Pluton, second best, Landis Bros., Folsom.

Class IX. Clydesdales.—Stallions: Border Chief, best 4-year-old, Landis Bros., Folsom.

Class XI. Coach Horses.—Stallions: Pochas, best 4-year-old, Dunham & Fletcher, Woodland; Gustave, second best, J. Crouch & Son, San Jose; Nordstrard, third best, Landis Bros., Folsom; Rother, best 3-year-old, and Ontige, second best, and Thado, third best, and Actival, best 2-year-old, J. Crouch & Son, San Jose. Mares: Kissing Cup, best 4-year-old with colt, and chestnut filly, best foal under 1 year, also Velocity III and colt, best get of sire, Chas. Butters, Berkeley.

Class XIII. Draft Sweepstakes.—Molly and colt, best mare, any age, and two colts, S. S. Madison, Broderick.

Class XIV. Grade Draft.—Mares: Jane and colt, best mare with foal, Queen and colt, second best, and Daisy, best mare or gelding 3 years old, H. S. Madison, Broderick; Chuh, second best, J. J. Fairbairn, Walsh Station; Belle, third best, H. S. Madison, Broderick; Maggie, best 2-year-old, J. J. Fairbairn, Walsh Station; Pet, second best, and Daisy, best colt 1 year old, H. S. Madison, Broderick; Sam, second best, J. J. Fairbairn, Walsh Station; team, chunks 2500, H. S. Madison, Broderick; team, second best, J. J. Fairbairn, Walsh Station.

Class XV. Grade Coaches.—Mares: Sally and colt, best brood mare, J. J. Fairbairn, Walsh Station; Molly and colt, second best, H. S. Madison, Broderick; Jim, best 3-year-old gelding, J. J. Fairbairn, Walsh Station; Ned, second best, and Joe, best 2-year-old, H. S. Madison, Broderick; Jane, second best, J. J. Fairbairn, Walsh Station; Pet, best colt under 1 year, H. S. Madison, Broderick; Dan, second best, J. J. Fairbairn, Walsh Station.

Class XVI. Saddle Horses.—Seyyid, best stallion 3 years old, Charles Butters, Berkeley; Kentucky Prince, best mare or gelding, F. Cornehl, San Francisco; Sylvia, second best, Mrs. L. I. Zapp, Fresno.

Class XVIII. Shetland Ponies.—Six Shetlands and four-in-hand, Mrs. L. I. Zapp, Fresno, silver medals.

Class XIX. Jacks.—Ely, best 2-year-old, J. W. Wakefield, Lockeford.

CATTLE.

Class I. Shorthorns.—Bulls: King Edward, best 3-year-old, and Hilcrest Hero, second best, J. H. Glide & Son, Sacramento; Nonpareil King, third best, B. F. Rush and Wm. Pierce, Suisun; Glide's Gloucester, best 2-year-old, and Scotch Marshall, second best, J. H. Glide & Son, Sacramento; Luster Chief, third best, California Pastoral-Agricultural Co., Merced; Aberdeen, best 18-months-old, under 24 months, J. H. Glide & Son, Sacramento; Golden Fashion, second best, and Spicey, third best, Howard Cattle Co., San Francisco; Bamptor Hero, best over 12 months, under 18 months, H. P. Eakel Jr., Woodland; Pioneer, second best, Howard Cattle Co., San Francisco; Harlequin, third best, California Pastoral-Agricultural Co., Merced; McGregor, best calf under 12 months, and Greenwood Ensign, second best, J. H. Glide & Son, Sacramento; Watchful Conqueror, third best, Rush & Pierce, Suisun. Cows: Egitha, best 3-year-old, and Stars Queen, second best, J. H. Glide & Son, Sacramento; Sarah, third best, Rush & Pierce, Suisun; Roar Myrtle, best 2-year-old, J. H. Glide & Son, Sacramento; Sweet Harmony, second best, Rush & Pierce, Suisun; Silver Rosalind, third best, J. H. Glide & Son, Sacramento; Laura, best 18 months, under 24 months, California Pastoral-Agricultural Co., Merced; Mysie Secret, second best, Rush & Pierce, Suisun; Diamond Princess, third best, J. H. Glide & Son, Sacramento; Diamond Clara, best 12 months, under 18 months, J. H. Glide & Son, Sacramento; Dumpsie, second best, Rush & Pierce, Suisun; Dorinda, third best, California Pastoral-Agricultural Co., Merced; Diamond Lady, best under 12 months, and Miss Edward, second best, J. H. Glide & Son, Sacramento; Peggie Waunall, third best, Rush & Pierce, Suisun.

Shorthorns. — Exhibitors' Herd: Herd, best and second best, J. H. Glide & Son, Sacramento; herd, third best, Rush & Pierce, Suisun; best breeders young herd, C. P. A. Co., Merced; second best, Howard Cattle Co., San Francisco; best get of sire, bull and four animals, J. H. Glide & Son, Sacramento; second best, Rush & Pierce, Suisun; third best and best produce of dam, C. P. A. Co., Merced; second best, Howard Cattle Co., San Francisco; third best, C. P. A. Co., Merced.

Shorthorns.—Champions: All the awards, viz.: Six gold and two silver medals to J. H. Glide & Son, Sacramento.

Class II. Devons.—All awards, prizes and medals to L. V. McWhorter, North Yakima, Wash.

Class VI. Holsteins.—Bulls: Jetze Zwarthak (best 3-year-old and over), and Corrector of Riverside (best 2-year-old), and Lanock Blaco Paul of Riverside (best 1-year old), and Simor, second best, Pierce Land & Stock Co., Stockton; Mathildas Cook, third best, F. H. Burke, San Jose; Julianna King of Riverside (best over 6 months and under 1 year), and Zeta Stein of Riverside (best calf under 6 months), and Zeta Hunt, second best, Pierce Land & Stock Co., Stockton; bull calf, third best, F. H. Burke, San Jose; cows, all awards to Pierce Land & Stock Co., Stockton.

Holsteins.—Exhibitors' Herds: Best herd and best breeders' young herd, and second best, Pierce Land & Stock Co., Stockton; third best, F. H. Burke, San Jose; best get of sire and best produce of dam, Pierce Land & Stock Co., Stockton; second best, F. H. Burke, San Jose.

Champions.—Six gold medals and two silver medals to Pierce Land & Stock Co., Stockton.

Class VII. Jerseys.—Bulls: Alices Recorder, best 3-year-old, T. B. C. Sielcken, Calistoga; Sir Carlyle, best 2-year-old, Chas. Waite, Perkins; Golden Lad of Oakhurst, best 1-year-old, and Star of Kern, second best, W. R. Shafter, San Francisco; Roy W., third best, Thos. Waite, Perkins; Brown Jimmie, best calf under 1 year and over 6 months, W. R. Shafter, San Francisco; Guy W., best calf under 6 months, Thos. Waite, Perkins. Exile of San Geronimo, second best, W. R. Shafter, San Francisco. Cows: Rosalie of Y. B., best 3-year-old, W. R. Shafter, San Francisco; Grace W., second best, Thos. Waite, Perkins; Rosa B, third best, W. R. Shafter, San Francisco; Laura W., best 2-year-old, Thos. Waite, Perkins; Queenie, second best, T. B. C. Sielcken, Calistoga; Rosa W., best 1-year-old, Thos. Waite, Perkins; Noba, second best, W. R. Shafter, San Francisco; Irma, third best, T. B. C. Sielcken, Calistoga; Margorie of Kern, best under 1 year and over 6 months, W. R. Shafter, San Francisco; Edna W., best calf under 6 months, Thos. Waite, Perkins; calf, second best, T. B. C. Sielcken, Calistoga.

Exhibitors' herd: Best herd, Thos. Waite, Perkins; second best herd, T. B. C. Sielcken, Calistoga; Rosalie of Y. B., best produce of dam, and Sir Carlyle, senior champion bull, and Golden Lad of Oakhurst, junior champion bull, Thos. Waite, Perkins; Rosalie of Y. B., senior champion cow, W. R. Shafter, San Francisco; Rosa W., junior champion cow, Thos. Waite, Perkins; Golden Lad of Oakhurst, grand champion bull, Brown Jimmie, reserve, and Rosalie of Y. B., grand champion cow, W. R. Shafter, San Francisco; Rosa W., reserve, Thos. Waite, Perkins.

Class X. Brown Swiss.—Bulls: Huff, best 3-year-old, Stephen B.; best 2-year-old, Oom Paul, best 1-year-old; Philip J., best under 12 months and over 6 months, and Tom Watson, best calf under 6 months, J. M. Jayne, North Yakima. Cows: Gilalda, best 3-year-old and over; Independence, best 2-year-old; Violet J., best 1-year-old, and Blue Belle J., best under 1 year and over 6 months, J. M. Jayne, North Yakima.

Exhibitors' herd: Best breeders and herd, best get of sire, best produce of dam; Huff, senior champion bull; Tom Watson, junior champion bull; Violet J., junior champion cow; Huff, grand champion bull; Tom Watson, reserve champion bull; Grisalda, grand champion cow, and Independence, reserve champion cow, J. M. Jayne, North Yakima.

Class XII. Fat Cattle.—John Clay, best 2-year-old steer; Johnnie Riggs, best under 1 year, and John Clay, champion steer, C. P. A. Co., Merced.

Class XIV. Grand Sweepstakes Dairy Breed.—Herd, best aged; best young herd; second best, Pierce Land & Stock Co., Stockton.

SHEEP.

Class II. French Merinos.—Rams: Best 2-year-old; best 1-year-old; best under 1 year, J. H. Glide & Son, Sacramento. Ewes: Best 2-year-old; best 1-year-old; best under 1 year, J. H. Glide & Son, Sacramento. Flocks: Pen, flock, best ram any age; best ewe any age, J. H. Glide & Son, Sacramento.

Class III. Southdowns.—Rams: Best 1-year-old, Eaton & Shaw, Cosumnes; second best, best under 1 year, second best, Thos. Waite, Perkins; third best, E. J. Lynd, Walsh Station. Ewes: Best 2-year-old, Thos. Waite, Perkins; second best, E. J. Lynd, Walsh Station; third best, best 1-year-old, Thos. Waite, Perkins; second best, E. J. Lynd, Walsh Station; third best, under 1 year, second best, Thos. Waite, Perkins; third best, E. J. Lynd, Walsh Station. Flocks: Best flock, second best, Thos. Waite, Perkins; third best, E. J. Lynd, Walsh Station; best pen of 4 lambs, Thos. Waite, Perkins; second best, E. J. Lynd, Walsh Station; best ram any age, Eaton & Shaw, Cosumnes; best ewe any age, Thos. Waite, Perkins.

Class IV. Shropshires.—Rams: Best 2-year-old, best 1-year-old, best under 1 year, J. H. Glide & Son, Sacramento. Ewes: Best 2-year-old, best 1-year-old, best under 1 year, J. H. Glide & Son, Sacramento. Flocks: Best flock, best pen 4 lambs, best ram any age, best ewe any age, J. H. Glide & Son, Sacramento.

Class VI. Persians.—Best buck, 2-year-old and over, C. P. Bailey, San Jose.

Class VIII. Dorset Horns.—Rams: Best 2-year-old, J. W. Wakefield, Lockeford. Ewes: best 2-year-old and best 1-year-old, J. W. Wakefield, Lockeford.

Class XIV. Angora Goats.—Bucks: Best 2-year-old and over; second best; best 1-year-old and over; second best; best under 1 year; second best, C. P. Bailey, San Jose. Does: Best 2-year-old and over; second best; best 1-year-old and over; second best; best under 1 year; second best, C. P. Bailey, San Jose.

SWINE.

Class I. Berkshires.—Boars: White Lug, best 2-year-old, C. W. Reed, San Francisco; Prince of Perkins, second best, G. A. Murphy, Perkins; Rio Bonita Prince, third best, C. W. Reed, San Francisco; Perkins Oxford, best 1-year-old, Thos. Waite, Perkins; Prince of Perkins III (second best), Prince of Perkins IV (third best), G. A. Murphy, Perkins. Lone Pine Champion, best over 6 months, Carrol Cook, San Francisco; Sam W., second best, Thos. Waite, Perkins; Lone Pine Artful, third best, Carrol Cook, San Francisco; Semperins, best under 6 months, C. W. Reed, San Francisco; second best boar, third best boar, G. A. Murphy, Perkins. Sows: Perkins Farm Beauty, best 2-year-old and over; Belle of Perkins, second best, G. A. Murphy, Perkins; Brace Girdle, third best, C. W. Reed, San Francisco; Clarrette III, best 1-year-old, G. A. Murphy, Perkins; Queen Mary, second best, C. W. Reed, San Francisco; Rosa W., third best; Sunshine W., best over 6 months and under 1 year; Rosa W. II, best under 6 months; Betsy W. II, second best, Thos. Waite, Perkins; third best sow; Fashion, best produce of sow; Royal Belle, second best, G. A. Murphy, Perkins; Sacto Princess, third best, Thos. Waite, Perkins; White Lug, best get of sire over 1 year, C. W. Reed, San Francisco; best get of sire under 1 year, G. A. Murphy, Perkins; second best, Thos. Waite, Perkins; best boar, any age, C. W. Reed, San Francisco; Lone Pine Champion, second best, Carrol Cook, San Francisco; best sow any age, second best, G. A. Murphy, Perkins.

Class III. Poland Chinas.—Boars: Chief Guy, best 2-year-old; Ohio's Chief, second best, W. R. McCaslin, Walsh Station; Western Star, third best, P. H. Murphy, Perkins; Scrapper, best 1-year-old, W. R. McCaslin, Walsh Station; Chief I Know, second best, P. H. Murphy, Perkins; Bockey, best over 6 months and under 1 year, W. R. McCaslin, Walsh Station; Money Maker, second best, P. H. Murphy, Perkins; Darkest of All, third best; best under 6 months; second best, W. R. McCaslin, Walsh Station; Model of 1905, third best, P. H. Murphy, Perkins. Sows: Fredora, best 2-year-old; May Fair, second best, W. R. McCaslin, Walsh Station; Hope of Lynwood, third best, P. H. Murphy, Perkins; Blackie Queen, best 1-year-old; Black Queen, second best; Black Nan, third best, W. R. McCaslin, Walsh Station; Black Perfection, best over 6 months and under 1 year, P. H. Murphy, Perkins; Beauty's Best, second best; Best of 1905, third best; best under 6 months; second best, W. R. McCaslin, Walsh Station; Black Beauty, third best, P. H. Murphy, Perkins; Lou Netta, best produce of sow, W. R. McCaslin, Walsh Station; Perfect Lady, second best, P. H. Murphy, Perkins; Chief Guy, best get of sire over 1 year, W. R. McCaslin, Walsh Station; Western Star, best get of sire under 1 year, P. H. Murphy, Perkins; Chief Guy, best boar, any age; Scrapper, second best; Black Queen, best sow of any age; Blackie Queen, second best, W. R. McCaslin, Walsh Station.

Class V. Duroc Jerseys. — Best boar, over 6 months and under 1 year; best boar under 6 months; best sow under 6 months; best boar, any age; best sow, any age, H. P. Eakel, Jr., Woodland.

Agricultural Review.

Fresno.

RAISIN PRICES MADE.—Fresno Republican, Oct. 6: The board of directors of the California Raisin Growers' Co. has named opening prices. The full board of thirty-three members, with only a few absentees, agreed upon the prices, but only after one of the most protracted sessions ever held by a raisin board. The prices are fixed upon a 4½-cent sweat-box basis, and are as follows:

Grades.	Price.
Imperial Clusters	$3 00
Dehesa Clusters	2 50
Fancy Clusters	2 00
3 Crown London Layers	1 50
2 Crown London Layers	1 40
4 Crown Standard Loose Muscatels	6½c
3 Crown Standard Loose Muscatels	6 c
2 Crown Standard Loose Muscatels	5½c
Seedless Standard Loose Muscatels	4½c
Seedless Standard Loose Muscatels Floated	4¾c
Seedless Sultanas, Standard	5 c
Thompson Seedless, Standard	6½c
Fancy 16 oz	8¼c
Fancy 12 oz	6⅝c
Choice 16 oz	8 c
Choice 12 oz	6⅝c
Bulk Seeded, Fancy	8 c
Bulk Seeded, Choice	7¾c

The prices are almost identical on loose goods with those named in 1899. They are ½ cent higher than 1900 prices, and ½ cent lower than opening 1903 prices. These, however, were later in the season reduced.

RAISINS.—Fresno Republican, Oct. 6: Raisin deliveries are coming in rapidly at Selma, and the first estimates of a 3500-ton pack in this town compared with 4000 tons last year is well substantiated. Plant No. 26, the growers' company packing house, is running with a force of 100 employes, and three stemmers are utilized in grading the product. Manager Gray says that the 3 and 4-crown grades are in a high percentage. The raisins delivered are well cured and will average higher than usual so far as quality. The Selma Fruit Co. seeding plant is running night and day with a force of over 100 employes. Orders for seeded goods have been coming in so fast that Manager Elliott has been compelled to turn down some big orders. He has orders for over 1500 tons of seeded goods.

Monterey.

BEAN THRESHING BY ELECTRIC LIGHT.—The Pajaronian, Oct. 5: At the L. H. Hussey ranch, the Owen bean machine of Rowe & Driscoll runs at night by electric light. The machine has a 26-inch cylinder, but at present it is averaging about 100 eighty-pound sacks of beans an hour. The separator is provided with eight 16-candle power electric lights and the engine with two lights of the same capacity. The electricity is generated by means of a small dynamo attached by belt to the engine, and the light service is excellent. The little machine is compact and easily hauled from field to field. At the present time Rowe & Driscoll have thirty men employed. An electric lighted bean machine enables its owners to operate late at night, a wonderful advantage when the fact is taken into consideration that beans are very hard to handle early in the morning, when the dew has fallen upon them. Up to two years ago bean threshing in Pajaro valley was either done with flails or horses. Where beans were grown in commercial quantities the old process proved too slow, and a couple of years ago some of the men who were operating grain threshers in this valley rigged up their grain separators in such a manner that they could thresh beans, but the work could not be done so satisfactorily as it can with a regular bean machine. The old separators could not thresh beans successfully when the product was the least bit damp, and it did not clean the crop well.

Placer.

SHIPMENTS OF PLACER FRUIT.—Auburn special to Sacramento Bee, Oct. 6: The fruit output of Placer county this year is, as estimated from fruit house reports, 2868 cars. This does not include the orange crop, which will easily reach 75 carloads. Newcastle has shipped 1212 refrigerator cars of fruit, 117 cars of cannery peaches, 20 cars of canned fruit, 100 cars by Wells-Fargo Co., 75 ventilator cars, and 3 cars of winery grapes. From Penryn 290 refrigerator cars were sent out, also 61 cars of cannery peaches, 8 cars to local points, 3 cars of winery grapes, and 5 cars of fruit by Wells-Fargo Co. Loomis shipped 487 refrigerator cars, 112 cars of cannery peaches, 20 cars of wine grapes, 10 cars of local fruit, and 20 cars by Wells-Fargo. Auburn shipped 100 refrigerator cars. Colfax and the country above there shipped 100 refrigerator cars and 15 cars Bartlett pears for cannery purposes. Roseville shipped 10 refrigerator cars. The shipment of wine grapes has not been as large this year as usual, as the Roseville winery has consumed a larger portion of the local crop than formerly. The crop of wine grapes was lighter than usual, also. The short varieties this year were Bartlett pears, early peaches and grapes. Lincoln and Roseville shipped between 4000 and 5000 tons of grain from each place, and about 2000 tons of hay from each place. The Newcastle cannery has been in operation to its full capacity the entire season.

NEW COOLING PLANT.—Placer County Republican, Oct. 5: J. L. Nagle of the California Fruit Exchange will install one of the Sprague car cooling plants at Newcastle before the next fruit season opens, such as was in operation at Loomis this season. The experiment of shipping fruit in cars cooled under this system was successful and the plan is likely to be generally adopted next season. Fruit that was perfectly ripe was shipped to Boston, arrived in good condition and brought fine prices.

San Bernardino.

ORANGE PEOPLE PLANTING PEAS.—Highland correspondence of San Bernardino Sun, Oct. 5: The orchardists—most of them—are busy these days planting peas in their orchards. Of late years the orange raisers have seen the benefit derived from planting peas in their orchards. A few years ago comparatively few followed this practice, but as it became apparent what good is accomplished more each year put in a crop along about this season. The principal reason for planting peas is to get the nitrogen from the air and have it diffused in the soil. The plant gathers from the air the nitrogen and it is formed into a cluster on the long tap root of the pea vine, and from there it is liberated into the soil, and thence to the trees. At first many thought that the large lumps were formed from the soil, but a study revealed the fact that the nitrogen is secured from the atmosphere. After the peas begin to die they are plowed under and the tops loosen the soil, making irrigation more thorough. About seventy-five pounds of pea seeds are sown to an acre, though some sow more and a few less, according to the nature of the soil.

San Joaquin.

HOLSTEIN PRIZE WINNERS.—Stockton Independent, Oct. 7: Twenty-eight members of the famous Holstein family of 400, whose home is on the Pierce Land & Stock Co.'s model stock farm on Roberts island, arrived in Stockton yesterday morning after a record breaking outing of five weeks, in which the best premiums were taken at the California State Fair and at the Oregon Exposition held at Portland. The handsome cattle occupied three well padded cars and were accompanied on the return trip from Oregon by four attendants, who remained with the distinguished travelers throughout the journey and kept all of them covered with light blankets at night and looked after their comfort in the day time. The stock left Portland last Friday night and came through to the Stockton water front without a stop, and not a mishap occurred on the trip. During the five weeks the cattle were on the road or being exhibited five calves were added to the herd, and they came back with their mothers in excellent condition. The cattle left on last night's boat for their home at Riverside, 3 miles down the river. W. C. Hunt, the superintendent of the stock farm, was at the two expositions and returned with the stock. Mr. Hunt reported that the Pierce stock in competition with the Holstein world, which was represented by four large herds, won 80% more premiums and 90% more money than the nearest competitor.

ASPARAGUS RUST CONTROLLED.—Lodi Sentinel, Oct. 7: It is now believed that asparagus rust can be controlled, and planting has been resumed on a large scale in the river districts and in San Joaquin county.

GRAPE STATISTICS.—Lodi Sentinel, Oct. 7: From the figures being obtained by the statisticians in the employ of the county, gathering data for the Secretary of State, it appears that in northern San Joaquin the acreage of maturing table grapes is far in excess of the acreage of non-bearing table grapes. Henry Ellis, who is gathering statistics in northern San Joaquin, states that in every case where the wine grapes exceed the table grapes, the growers have a five-year contract with the wineries to sell their grapes at a fixed price per ton, or if the market should be higher, to pay the added difference.

Santa Barbara.

WALNUT OUTLOOK.—Santa Barbara Press, Oct. 5: Walnuts in some districts are opening earlier than usual, and picking, in a limited way, is in progress. The crop is not heavy, it being notable that the tops of the trees this year bear very few nuts. The lower branches, however, are well filled and the nuts are of fine quality and good weight. The high price for the crop will net the growers a fair return for the year, notwithstanding the shortage.

Shasta.

GOAT RAISING.—Redding dispatch to Sacramento Union, Oct. 5: Miss Ethel Champenois of Anderson and her two sisters at one time owned the largest band of goats in the county. For eighteen years they were in the goat business. Next week Charles Frisbie of Anderson, who owns the second largest band in Shasta county, will begin shearing. He has a band of 1300 goats and has employed Miss Ethel Champenois to superintend the entire operation of the shearing. She will not only oversee the work of shearing but she will attend to the grading of the hair or wool. These 1300 goats will bring on an average $1.80 a head for the clip.

Sonoma.

BIG PACK OF TOMATOES.—Healdsburg Tribune, Oct. 5: The Russian River cannery is now putting up tomatoes, about thirty-five women and girls being engaged in the work of filling the cans. Manager Snook states that he will pack about 15,000 cases this season—by far the largest output in the history of the cannery. From 5000 to 6000 cases have been the usual pack heretofore. The cannery will run on tomatoes until the frost kills the vines—probably all this month. The grower is receiving a very satisfactory price for his product.

MODEL PACKING HOUSE.—Santa Rosa Republican, Sept. 28: The Mark L. McDonald, Jr., packing house has been a very busy place since this year's fruit season opened, which was about August 1. The plant is equipped with the latest improved sorter which is located on the second floor. It is here that all the unhealthy and undersized dried prunes are removed, only those suitable for packing remaining. From the sorter they are taken in wheelbarrows to the scales where they are tested, after which they are dumped into the proper bins near by where they are to await packing. From here they are placed into large ladles or kettles, five in number, which are lowered into a long tank containing boiling hot water running underneath. They are then raised and dumped onto a shaker which removes the water and shakes them into a trough out of which rise the cups that convey the product onto another long shaker and into a huge vat from which they are packed. There are sixty persons employed. The plant for several years has had an average output of 2,000,000 pounds of prunes annually. The season will close in December. The quality of this year's prune crop is splendid. This is shown by the fact that several buyers from the Santa Clara valley have been up here and purchased a number of cars for their plants. The men at the head of the enterprise are the following: D. J. Paddock of Santa Rosa, buyer; H. C. Cline, superintendent, and M. L. McDonald, Jr., of the Santa Rosa Water Works, director and owner.

Stanislaus.

FINE FRUIT ON THE HARDPAN.—Stanislaus News, Oct. 6: James Thompson, of Lanark Park, brought in some very fine peaches to the Board of Trade rooms. The fruit is from young trees grown on the "red land," which has not heretofore been considered favorable to horticultural uses by reason of the proximity of the hardpan to the surface, which prevents the trees from rooting deeply. The method of breaking up the hardpan to some depth under each tree has resulted in showing the remarkable fertility of this class of soil when properly treated, for the fruit grown is of excellent size, color and flavor. It is equal to that raised on the most favored fruit lands of the San Joaquin valley or elsewhere in the State.



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This famous remedy never fails to cure pain, both external and internal.

Sutter.

MUST IMPORT BETTER WHEAT.—Yuba City special to Sacramento Bee, Sept. 28: It is the general opinion among Sutter county farmers that the grain raisers of this section must import better seed wheat. They realize this fall more than ever, says a prominent millman here, that Sutter's wheat has run out. He states that bad crops for the last five years were not only due to temporary unfavorable climatic conditions, but to the variety of wheat grown and the persistency of the farmers in planting local seed each year. The bad flour the local mills have turned out this year, he says, is the result of the system of raising one variety year after year on the same land. The Club variety has been the favorite in Sutter for years, due to the well-known fact that this variety does not readily shell. It was learned that the local millmen are going to do everything possible to bring, or have brought, into the county this fall the best Eastern milling wheat for seed and induce the farmers to plant it.

ALMOND PRICES UNDETERMINED.—Yuba City special to Sacramento Bee, Oct. 5: The almond growers of this section, who are outside of the Sutter Almond Association, are having troubles all their own. Heretofore these growers have been fortunate enough to get a tip from some members of the Association as to what prices buyers had offered, and then they would manage to make sales at a little above Association prices. This sort of procedure was very annoying to those who had banded themselves together for the purpose of controlling the market, but it was very pleasing to the outsiders, because they were not bound by any rules of a combination, and yet could get as much or more than Association almonds sold for. This season all almonds in the combine were disposed of in Eastern markets, local buyers getting nothing. Prices were kept a secret between the Association members.

Tehama.

FALL SALE OF WOOL.—Red Bluff special to Sacramento Bee, Oct. 4: Two sales of fall wool were closed here Oct. 2, being the first sales of the season. Leo. L. McCoy, one of the largest growers, sold to Thomas Smith for C. S. Moses & Co. of San Francisco, and T. S. Ramsay sold the Cone & Ward Co. clip to Jacob Rosenberg & Sons Co., also of San Francisco. The latter sale is understood to include the Cone ranch clip, and amounted to about 400 bales, while the McCoy lot was about 160 bales. The L. L. McCoy clip brought 17 cents, that of the Cone ranch 16½ cents, the Gallatin ranch 16¼ cents. The market is between 15 cents and 16 cents. This morning half the fall clip of 2000 pounds was disposed of.

Ventura.

WALNUT HARVEST COMMENCING.—Oxnard Courier, Oct. 6: The gathering of the 1905 crop of English walnuts has begun in many orchards out in this valley and more particularly on the north side of the river, in the vicinity of Saticoy, but the yield will fall short of that of last year. L. J. Rose, one of the largest growers this side of the river, has already gathered about a ton of his crop, which, while not yielding as heavily as he had hoped, are of a fine quality.

Yuba.

AUCTION WOOL CLIP.—Wheatland dispatch to Sacramento Union, Oct. 7: The wool growers in this place have decided to bring their wool together and store it in Dam's warehouse and invite the buyers to come there, inspect it and make their bids on the different lots on Thursday, Oct. 12. There are likely to be over 300 bales of mountain wool.

The Home Circle.

Two Who Failed.

A man failed after trying long,
  And then sat down and wondered why;
He saw not where he had been wrong,
  Nor where fair chances had slipped by.
All that he did was sit and gaze
  Upon the hopes strewn 'round him there
And wonder on through all his days
  Why fate had marked him for despair.

Another failed and stepped aside
  And saw the causes of his woe—
He saw where efforts misapplied
  Had aided chance to bring him low—
And, taking note of all the past,
  And turning into newer ways,
He tried again and filled at last
  The hopes of all his eager days.

Trees That Have Helped Me.

Let others sing in praise of men,
  Of art and books galore;
My song shall be of impress deep
  Wrought by the woodland's store;

Of aspirations that the oak
  Taught from her acorn small;
Of perseverance that my soul
  Learned from the chestnut tall.

The maple fair, the stately pine,
  Each willow by the brook
Guided my childhood's careless thought
  In upward ways to look.

But yet 'tis true beyond dispute,
  As memory's leaves I search,
The tree that influenced me most
  Was mother's little birch.

—Life.

The New Girl.

The April sun was pouring in through the half-opened window, and a gentle breeze from the south swayed the long curtains. But there was very little sunshine in Annabel Maitland's heart, and the south wind brought no soothing relief to her flushed brow.

She had just cleared away the breakfast things, and dusted the library and hall, and now she was standing at the window of the little reception-room, looking anxiously out on the street.

Presently there were two sharp whirs at the telephone. Annabel ran back to the instrument. It was a call from George. His Aunt Mary hadn't come. She must have missed the train somewhere. The next train wouldn't be in until five o'clock. He would meet it then, and bring his aunt home with him.

"Any girl yet?" he called.

"No," replied Annabel with a little catch in her voice.

"That's tough," said George. "But we'll get along some way. Goodby."

Annabel hung up the receiver with a petulant little jerk.

"It's all very well to say we'll get along some way," she grumbled, "but what good does that do? George can't lift his finger to do a thing about the house. Poor old dear. And I did want to have everything so nice when his aunt came. Well, I'm to get a few hours respite, anyway. I'd better be studying that cook book some more, or shall I dust?"

And then the telephone bell gave its double whir again.

"This is the Unique Employment Agency," said a voice. "We have a girl that we think would suit you. She has an excellent recommendation. And she says she can take the place at once."

"Send her right up, please," said Annabel.

"She will be up soon after luncheon," said the voice.

This time when Annabel hung up the receiver she smiled. Then she stepped into the library, and, picking up the cook book, threw it back on the highest book shelf.

"I'll take that girl, no matter what she's like," she murmured.

Then she hung up the feather duster on its hook in the closet under the front stairway, and after inspecting the kitchen to see that everything was neat and clean and shining, for Annabel was an excellent housekeeper, despite her culinary limitations, she sought the upper part of the house and busied herself tidying up the room that was set aside as the "girl's room."

Annabel felt relieved—so very much relieved that she broke forth in song. It was a song that George had liked before they were married. How the time had flown. It seemed but yesterday that he was leaning over the piano and begging her for another verse. And now they were staid old married people. Married two years last October. She stopped her song just long enough to interpolate a little sigh, and then went on.

Probably it was the song that prevented her from hearing the door-bell. It rang, and several times, too. And then Annabel was startled by a loud rap at the kitchen door. She hurried downstairs and hastily turned the key and the knob.

There stood a neatly garbed woman—a woman of middle age, with a pleasant smile on her motherly face.

Annabel smiled, too, when she caught sight of the stranger.

"Come right in," she said. "I'm so glad you didn't disappoint me. They telephoned that you wouldn't be up until after luncheon."

"Who telephoned!" inquired the stranger, and she still smiled.

"Why, the agency people," replied Annabel. "Won't you sit down?"

The stranger accepted the invitation and Annabel seated herself before her.

"Of course you cook?" she said.

The stranger smiled again.

"I've had twenty year's experience at it, ma'am," she said, with a queer little twitch to her mouth.

"Plain or fancy?"

"I think I may say both, ma'am."

"I like the modest way you say it," said Annabel. "They most always boast so. Do you make good bread?"

"I have been told so, ma'am."

"And pies and cakes?"

"Yes, ma'am, and cookies."

"George likes cookies. Yes, and he likes fried cakes. Do you make fried cakes?"

"Yes, ma'am, and johnnycake, too."

"He loves johnnycake, but we never had a girl who could make it to suit him. What afternoon would you like out?"

"I'm not very particular, ma'am," said the stranger. "Perhaps we can arrange that later."

"I'm sure we can," said Annabel. "I pay $4, and have a laundress two days in the week."

"That is satisfactory, I think," said the stranger. "Have you much company?"

"Very little," said Annabel. "And I always help with the work, too. You wouldn't mind my coming into the kitchen, would you?"

"Not in the least," said the stranger. "I think I'd rather like it."

"Thank you," said Annabel. "And I hope you find the kitchen suits you."

The stranger looked about her with a critical eye.

"It seems very convenient—and very clean," she said with an approving nod.

"I think you will find the place a comparatively easy one," said Annabel. "There will be no children to bother you."

"I am sorry for that," said the stranger.

Annabel gave her a quick glance.

"I think I am going to like you very much," she said, "Will you look at your room now?"

So she took the stranger up the back stairs to the airy and sweet-smelling chamber, with its snowy bed and curtains, and the stranger, as she laid aside her hat and cape, said the room quite suited her. Then she asked Annabel to lend her a common frock that she could wear until her trunk came. And Annabel bustled about and decked her in an ancient summer gown, and a white apron and a white cap, and then stood back and contemplated her work with great satisfaction.

"Why, you're a picture," she said.

"But you are not thinking of making an art gallery of your kitchen," laughed the maid.

And somehow Annabel failed to see any incongruity in this remark.

She escorted the new help back to the kitchen, and then hastily slipped into the dining-room and telephoned to George.

"George," she murmured, "a new girl has come, and I know she's a jewel!"

"Don't let her slip from the setting until I can see her," laughed George. "What is she, an emerald?"

"She's a diamond of the first water," said Annabel.

"If she's a diamond she must have carroty hair," chuckled George. "But, say, don't forget about Aunt Mary."

"Not for a moment," said Annabel. "I am all ready for her now."

So Annabel and the new maid got the little luncheon together and ate it together, for here, thought the young mistress, is a maid that familiarity will not spoil.

But right in the midst of this little repast Annabel stopped short.

"Dear me," she cried, "I've never thought to ask you for your name."

The maid looked up.

"It doesn't matter much," she said. "Suppose you call me by the name the children called me at my last place. It was Auntie."

"It sounds a little familiar," said Annabel, "but, of course, I'll call you that if you prefer it. George will think it funny, though."

"Your husband?"

"Yes. He can see fun in almost everything. He has even cracked jokes over my being without a girl."

"I am afraid he is a little irreverent," said the maid.

"But he began to feel more serious about it last night," said Annabel.

"How was that?" queried the maid.

"Why, he had a telegram from his Aunt Mary saying she would be here to-day. He had been expecting her for several weeks. She has been abroad and with a niece in California, and George hasn't seen her for four years. And he was so anxious she should have a good time while she was with us, and he even hopes to coax her to stay here indefinitely, because she has no settled home. He thinks so much of her, you know. She was very, very good to him when he was a boy, after his mother died. And he was anxious to have her see me and like me, too; she has never seen me, you know. But really, what sort of an impression could a young housekeeper make when she had'nt a girl?"

The new maid laughed.

"And is this aunt supposed to be a very exacting person?"

"George says she is kindness itself, but I'm afraid she would be a little critical. You know how we women are. Of course, I suit George, but then he is quite blind to my faults. I'm really a rattlebrain, you know. Mercy, how I'm going on now!"

The new maid laughed over her teacup.

"I think," she said, "that you've been hungering for somebody to listen to you."

"That's just it," cried Annabel. "It was different when Lena was here. She was a German girl, and very well educated, and so sensible. We often read German together, and really she used much more careful English than I do. But her mother's health failed, and she had to go home and look after her father and the younger children. That was five weeks ago, and I've been trying to replace her ever since. And really, you know, it's been dreadfully lonesome here ever since she went away."

"I can imagine it," said the new maid. "I've been lonesome myself a good many times." And she quickly and deftly cleared away the remains of the simple meal. "You said your husband's aunt was coming to-day."

"So she telegraphed," replied Annabel. "But she wasn't on the train. George said she must have been delayed somewhere, but he suspects she'll surely be here on the late afternoon express. And I want to have a real nice little dinner for her, you know."

"Of course," said the new maid, with a sympathetic nod.

"And you must let me help you get it," said Annabel.

The new maid laughed.

"You have my most gracious permission," she said.

"Oh, I'm not as useless as I look," protested Annabel.

"And I'm quite sure there is nothing useless about your looks," said the new maid as she put her head a little on one side and glanced admiringly at the pretty face with its flushed cheeks and its bright eyes.

"Oh, thank you," cried Annabel, and the flush grew deeper. "That's what George would call a barefaced jolly."

When Annabel's sharp ears heard George on the porch she was waiting in the library, and ran to throw the door open. George was alone.

"Why, where's Aunt Mary?" she cried.

"Not on the train," said George. He was much disappointed. "And I don't know where to telegraph. Of course it's barely possible she got off at the upper station by mistake. But she's too old a traveler to get lost or into trouble."

"Of course, dear," said Annabel.

"And I'm dreadfully disappointed, too. I've got such a nice little dinner waiting for her." Then she dropped her voice. "We've got a jewel in the kitchen, George."

"So you telephoned," said George. "Hope you won't find she's paste."

"I only hope she'll stick," laughed Annabel.

And just then the dining-room bell tinkled.

It was a dainty, little dinner, the joint production of Annabel and the maid, and there was nothing George could criticise. And how Annabel laughed when George sampled the golden johnnycake.

"And how does that compare with Aunt Mary's?" she asked.

"It's all right," said George, whose mouth was too well filled to permit of any further eulogy.

"The new maid made it," cried Annabel.

The new maid did not appear in the dining-room. Once or twice Annabel flitted out after some necessity for the feast, but George caught no glimpse of the accomplished stranger.

After they had returned to the library and George had again studied the table of train arrivals in the evening paper, he looked up suddenly and said:

"Did you get a reference with this new girl?"

Annabel started.

"Bless me," she cried, "I forgot all about it!"

George shook his head.

"That's bad," he said. "We can't be too careful about these strangers. Biscom told me to-day about a girl they took without a reference. She stayed one night and disappeared with his wife's best frock. I'll see the girl and find out about her."

"Don't say anything that will hurt her feelings, dear. Perhaps I'd better go with you."

"You stay here," said George. "I'll be right back."

But he didn't come right back. He was gone a long time. Once Annabel thought she heard the sound of laughter in the direction of the kitchen, and pretty soon she grew so fidgety that she determined to follow George and discover what had become of him.

She softly entered the dining-room and stole across and opened the door into the china closet. The swinging door into the kitchen had glass panels in it, and through these Annabel could look without being observed.

The new maid was standing by the kitchen table washing dishes, and beside her stood George. He had taken off his coat and there was a big blue apron tied about his neck, and he was wiping the dishes as fast as the new maid washed them.

And they both were merrily laughing.

Annabel softly retreated back to the library wondering what it meant. And after a while George returned.

"The reference seems to be all right," he said. "I know some of the people she mentioned, and I'll look the matter up more fully tomorrow."

"I thought I heard you laughing out there," said Annabel.

"Perhaps you did," said George. "She needed a little cheering up. It seems that she's seen better days or something like that, and comes of a pretty good family, and we've got to try to please her. I found that out right away. She's no ordinary woman, and we must expect to humor her."

"Then she thinks she'll stay with us?"

"Yes," said George. "She likes you, and she likes the house, and I think she's going to like me. Anyway, she said she meant to stay just as long as we'd make her welcome."

"I'm very glad," said Annabel. "I never was so much taken with a stranger before."

"Yes," said George, "but don't forget that we have to treat her well. We must let her sleep in the front chamber tonight."

"Why, George, that's the guest chamber!"

"Yes, I know."

"And it's all ready for Aunt Mary."

"That can't be helped," said George. "We'll let the—the maid sleep there tonight, and then we can make other arrangements. Sort of let her down easy, you know."

"Why, George, I never heard of such a thing! You'll spoil her."

"Very well," said George. "I'll take the responsibility. We've got to humor her. "I'll go up now and light the gas. The—the maid is tired and wants to retire early, and she has to arise early, too, you know."

He paused in the hall doorway and looked around.

"Annabel," he softly said.

"Well, dear?"

"You're a little goose."

And he went up the stairs chuckling.

Annabel did not rise early the next morning. She was tired and sleepy, and a load of responsibility was off her mind. She did not know that George was up at daylight and bustling down stairs and rattling about the range.

But after awhile she dimly comprehended that somebody was calling her. Yes, it was George. What was he saying?

"Annabel, Annabel, come down, you lazybones. Aunt Mary is here and breakfast is waiting."

Aunt Mary come! And the hostess not up to welcome her. Oh, what a shame!

How she hustled on her garments and twisted up her pretty hair.

When she tripped into the library she looked about her eagerly. George was standing by the mantel, and in the dining-room doorway the new maid looked at her with a smiling face.

"Where is Aunt Mary," she cried.

George answered her questioning glance by opening his eyes very wide and then shutting one of them very tight.

"The reference proves to be all right, my dear," he said, with a comical quaver in his voice.

Annabel looked from George to the new maid, and the new maid's smile slowly deepened.

Then she suddenly understood.

"You—you are Aunt Mary!" she cried. "Oh, oh, how stupid I am!" and two big tears suddenly trembled on her long lashes.

"It wasn't a very nice piece of deception, my dear," she said. "But you know how I drifted into it. Besides, it gave me such a nice chance to make your acquaintance. And then I knew this wicked boy would appreciate the little joke so much. You must forgive me, dear."

"Your jewel stands the test, my love," laughed George.

Then Annabel couldn't help smiling.

"Breakfast is waiting," said Aunt Mary.—W. R. Rose, Cleveland Plain Dealer.

Electro Magnets.

The familiar horseshoe magnet is made of highly tempered steel and magnetized so that one end is a north pole, the other a south, or perhaps more commonly known as a negative and a positive. Once magnetized it is always magnetic unless the power is drawn from it by exposure to intense heat. An electro-magnet, however, can be made from any scrap of soft iron, from a piece of ordinary telegraph wire to a gigantic iron shaft. When a current of electricity passes through an insulated wire coiled about a soft iron object such as a nail, a bolt, or a rod, that object becomes a magnet as long as a current of electricity is passing through the coils of wire or helix. A coil of wire in the form of a spiral spring has a stronger field than a straight wire carrying the same current, for each turn or convolution adds its magnetic field to that of the other turns; and by having the center of the coil of iron, which is a magnetic body, the strength of the magnetism is greatly increased. —St. Nicholas.

Our Ancestors Double in Every Generation.

The number of a man's ancestors doubles in every generation as his descent is traced upward. In the first generation he reckons only two ancestors, his father and mother. In the second generation the two are converted into four, since he had two grandfathers and two grandmothers. But each of these four had two parents, and thus in the third generation there are found to be eight ancestors—that is eight great-grandparents. In the fourth generation the number of ancestors is sixteen; in the fifth, thirty-two; in sixth, sixty-four; in the seventh, 128. In the tenth it has risen to 1024; in the twentieth, it becomes 1,058,576; in the thirtieth, no fewer than 1,073,741,834. To ascend no higher than the twenty-fourth generation we reach the sum of 16,777,215, which is a great deal more than all the inhabitants of Great Britain when that generation was in existence. For, if we reckon on generations at thirty-three years, twenty-four of such will carry us back 792 years, or to A. D. 1093, when William the Conqueror had been sleeping in his grave at Cæn only six years, and his son William II, surnamed Rufus, was reigning over the land. At that time the total number of the inhabitants of England could have been little more than 2,000,000, the amount at which it is estimated during the reign of the Conqueror. It was only one-eighth of a nineteenth century man's ancestors if the normal ratio of progression, as just shown by a simple process of arithmetic, had received no check, and if it had not been bounded by the limits of the population of the country. Since the result of the law of progression, had there been room for its expansion would have been eight times the actual population, by so much the more is it certain that the lives of every Englishman's ancestry run up to every man and every woman in the reign of William I from the king and queen downward, who left descendants in the island, and whose progeny has not died out there.

Sneezing.

According to Lancaster Folk Lore, a good deal depends upon the day of the week in the matter of sneezing:

"Sneeze on a Monday, you sneeze for danger;
Sneeze on a Tuesday, you kiss a stranger;
Sneeze on a Wednesday, you sneeze for a letter,
Sneeze on a Thursday, for something better.
Sneeze on a Friday, you'll sneeze for sorrow,
Sneeze on a Saturday, your sweatheert to-morrow;
Sneeze on a Sunday, your safety seek,
The Devil will have you the rest of the week."



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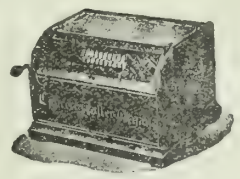
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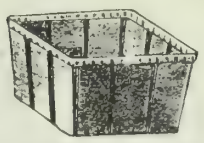
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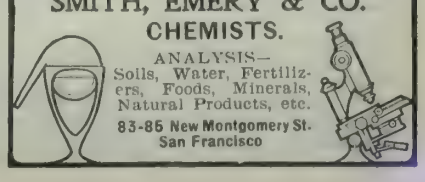
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The Markets.

San Francisco Produce Report.

San Francisco, Oct. 11, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 84⅛@ 83⅝	85⅞@ 85¼
Thursday	84⅜@ 84¼	86 @ 85⅝
Friday	85¼@ 84¾	86⅛@ 86
Saturday	85⅛@ 84⅝	86¼@ 85⅞
Monday	85⅝@ 85¼	86⅜@ 86⅛
Tuesday	85⅞@ 85⅛	86⅞@ 86⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	44⅜@44½	43¼@42¾
Thursday	44⅛@43⅝	43⅝@42⅞
Friday	44⅜@44	43⅞@43⅜
Saturday	44⅛@44⅛	43¾@43½
Monday	44⅛@44⅛	44 @43¾
Tuesday	44⅞@44⅜	44⅛@43⅝

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 36⅜@1 36⅛	$1 39 @1 39
Thursday	1 36⅜@1 35¾	——@——
Friday	1 36⅜@1 35¾	——@——
Saturday	1 37¼@1 36⅝	——@——
Monday	1 39 @1 38⅝	1 42½@1 42
Tuesday	1 39 @1 38	——@——

Wheat.

Arrivals from the north have been very free, being only restricted by the inability to secure cars, which is bothering everybody. No doubt by the first of December receipts will be very heavy. The foreign market shows signs of material improvement, and the trade generally look for higher prices. Chicago advices just received say that the wheat situation there is hardening, and advise the purchase of wheat in the San Francisco exchange on any decline. The local December option market has been advancing almost daily, the price going up to $1.39 on Monday, with but little disposition on the part of shorts to sell. There is just now more or less fear of slack receipts from the north because of incessant rains there, the rainfall since Sept. 1 having been over 7 inches. During September Portland shipped 500,362 sacks of wheat to San Francisco and 93,999 bushels to Asia. Puget Sound ports shipped 333,489 bushels to San Francisco and 46,123 bushels to Asiatic ports. Heavy rains, which prevent threshing, are marring the northern record wheat crop, making conditions similar to those of the fall of 1895, when a large crop was destroyed by rains before it could be threshed. More than 4 inches of rain has fallen in Eastern Washington since Sept. 13. Rain has fallen every day or evening this month and is still falling.

California Milling	$1 40	@1 45
Cal. No. 1 shipping	1 33⅛	@1 42½
Northern Club	1 38⅜	@1 41¼
Northern Bluestem	1 40	@1 45

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange. December, 1905, wheat ranged from $1.39¼@1.38⅞.

Flour.

The reduction of 20c a barrel in the price of flour has caused a slight speculative movement to develop as the price of wheat is now steadily climbing upward and it is generally believed that there will be a wheat shortage in some foreign countries. During the next two or three months unusually large quantities of flour will be exported from northern ports to Asia. Although the market in China has been curtailed by the boycott, the shortage of the rice crop in Japan will compel the Japanese to buy more flour in this country, and as the war is over big shipments will find their way to Vladivostok.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market is growing stronger every day and the trade are puzzled to know where all the barley is. There is very little arriving at tide water and it is very difficult to buy at any price. Shipments to date for the season have been 39,000 tons. Future option has been advancing rapidly and shorts are very nervous. At this writing $1.13 has been bid for December barley and $1.15 is being predicted for this week, Tuesday's receipts being only 3100 centals.

Feed, No. 1 good to choice spot	$1 10	@1 12½
Feed, fair to good	1 07½	@1 08¾
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 15	@1 20

Oats

Locally the situation remains unchanged. Arrivals have been light but entirely sufficient to supply the demand. Appearing quotations are being well maintained. An advice from Portland, Or., says the demand for local use is good, but very meager for export. Some business in oats could be done for shipment, but prices are a little too high to work the same to advantage, and holders are not liberal sellers at $23 for choice white.

White oats	$1 42½	@1 45
Black oats	1 30	@1 75
Red, choice new	1 30	@1 45
Red, fair	1 10	@1 27½

Corn

There is a little change in the corn situation locally, except as it is influenced by the fluctuations of the Eastern market. Appearing quotations are being maintained. A prominent Chicago commission man makes the following prediction: "The corn crop is nearer 3,000,000,000 bushels than 2,500,000,000. May should sell at a premium. In a few weeks a little old corn will make our new No. 3 go contract. Then watch the December break. Sell corn on every rally of ½c or more."

Large White, good to choice	$1 35	@1 40
Large Yellow	1 37½	@1 40
Small Yellow	1 50	@1 55

Rye.

The market for rye continues to hold its own and even to show slight advances in the price of choice grades. This is largely due to the fact that arrivals of what might be termed strictly choice rye are rather scarce. There is considerable off grade rye arriving from Idaho and Utah, which is moving rather slowly at the minimum quotation.

Good to choice	$1 45	@1 50

Buckwheat.

None is arriving and stocks on hand are very light; not sufficient to warrant quotations.

Good to choice	——	@——

Beans.

All kinds of new crop beans are coming into this market, though the receipts of some varieties have been rather meager. White beans of both the small and large varieties are very plentiful and slightly weaker in price. There are some new pinks coming in, and these are bringing the appearing quotations. Heavier arrivals are expected next week, and lower prices are predicted. Limas are somewhat weaker, owing to reports of an unusually large crop, and blackeyes and bayos are ruling firm at appearing quotations—this being largely due to the fact that the first part of the new crop had been contracted for some weeks ago. The Lima bean harvest is now at its height and all machines are running to full capacity. Several of them are operating night and day. Present indications are that the yield will be above expectations and the output is of the best. The beans are ripening so rapidly there is a rush to secure threshers.

Small White, good to choice	$3 00	@3 35
Small White, damaged	1 50	@2 75
Large White	2 00	@2 40
Large White, damaged	75	@1 50
Pinks	2 00	@2 25
Pinks, damaged	1 25	@1 75
Bayos, good to choice	2 90	@3 10
Bayos, damaged	——	@——
Red Kidneys	3 50	@4 00
Reds	3 50	@4 00
Limas, good to choice	3 35	@3 50
Black-eye Beans	4 00	@4 15

Dried Peas.

The market for dried peas is fairly firm and appearing quotations are being well maintained. The new crop has about all arrived, and stocks now remaining in second hands are rather light for so early in the season. A large demand from the south, where they are used in orchards for fertilizing, helped a great deal toward reducing stocks.

Green Peas, California	$2 25	@2 50
Niles	1 85	@2 25

Hops.

There has been but little activity to the local market, as dealers generally are unwilling to pay higher prices than those at present quoted and growers seem unwilling to conform to these. There is a much lighter demand from the brewers than is usual at this time of the year, as most of them have sufficient stocks on hand to carry them for some time, and mainly because they look for lower prices. Growers are holding off with the expectation of receiving higher prices for their hops as soon as samples of their crop shall reach England. Jobbers here do not look for any demand from European countries, except the usual demand for blending purposes, as most European hop sections have large crops this year. Last year England took from this country between 40,000 and 50,000 bales, and it is almost certain that the amount will be smaller this year. The coast crops for 1905 are estimated as follows: Oregon 100,000 to 110,000 bales, California 65,000 to 70,000 bales and Washington 40,000 to 45,000 bales.

Good to choice 1904 crop, nominal	10	@ 12

Wool.

Red Bluff and Corning wools were sold last week at prices ranging from 14c to 16½c. Local dealers predict that Humboldt and Mendocino wools will be sold by the end of October. There is very little life to the local market, as defective wools, such as the California fall clip, are much neglected in the Eastern market just at present.

FALL.		
Humboldt and Mendocino	17	@20
Northern, free	15	@17
Northern, defective	10	@13
Middle County, free	13	@15
Middle County, defective	10	@13
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11
SPRING.		
Oregon, valley	23	@25
Eastern Oregon	12	@17
Nevada	16	@20

Hay and Straw.

There has been a marked falling off in receipts during the last week. The total of arrivals was 2350 tons, as compared with 3570 tons for the week preceding. The shortage is largely due to a scarcity of cars and the effect is felt principally in the better grades of hay. There is a good demand for No. 1 grades, with practically none to be had. The supply of low-grade hay continues ample.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 00
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	5 00	@ 8 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	5 50	@ 9 00
Stock hay	5 00	@ 6 50
Compressed	10 00	@ 13 00
Straw, ₱ bale	30	@ 50

Millstuffs.

The market is in good shape and prices are ruling firmer on rolled barley, corresponding to the advance in price of barley. The latter is somewhat scarce, except in the off grades, and further advances are predicted. Bran and middlings are still rather scarce and appearing quotations are being well maintained.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	22 00	@ 23 50
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	23 50	@ 24 00
Cornmeal	32 00	@ 32 50
Cracked Corn	33 00	@ ——
Oilcake Meal	——	@ ——
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

No alfalfa seed has yet appeared in the local market. The demand for other seeds is rather quiet, even for this season. Prices remain, however, quotably unchanged.

Flax	$3 25	@ 3 50
Mustard, Yellow	3 00	@ 3 50
Mustard, Trieste	4 00	@ 4 25
		Per lb.
Canary		6½@—
Rape		2½@ 3
Hemp		3½@ 4
Timothy		5 @ 5½

Honey.

There is little activity in the local honey market, as dealers and growers do not seem able to make their ideas in regard to prices conform. At the present rate of demand, dealers do not feel warranted in paying more than 4c a pound for extracted honey and 8c a pound for comb honey, choice basis. On the other hand, growers are aware of a scarcity in some sections and are holding for higher prices. A prominent bee man of Bakersfield says that the honey crop of the county is a little above the average this year, but the price is small. Extracted honey is only bringing about 4c a pound. The extracting for the season is about completed.

Extracted, Water White	5	@—
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	8	@ 9
Amber Comb	6	@ 7

Beeswax.

There has been very little trading during the current week. The market is ruling steady at appearing quotations. A choice lot of light wax would bring a slight advance on quotations.

Good to choice, light ₱ lb	25	@27
Dark	23½	@24½

Live Stock and Meats.

The local live stock and meat market continues in good shape and appearing quotations are being well maintained. Arrivals of all kinds have been free, but a fairly brisk demand has kept prices from declining.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@	5¼
Beef, 2nd quality	3½@	4
Beef, 3rd quality	3 @	3½
Mutton—ewes, 8@8¼c; wethers	8½@	9½
Hogs, hard grain, 150 to 250 lbs	5½@	—
Hogs, large, hard, over 250 pounds	5¼@	—
Hogs, small, fat, under 150 lbs	5¼@	—
Veal, large, ₱ lb	5 @	6½
Veal, small, ₱ lb	6½@	8
Lamb, spring, ₱ lb	9 @	10

Hides, Skins and Tallow.

Hides are firmer again this week and advices from Chicago indicate a higher market than heretofore. In this market quotations are hard to fix, as each lot sold is sold for what it will bring, and this is, in some cases, higher and, in some cases, lower than appearing quotations. Probably the very best quality stock would bring from ½ to ½c more than quotations.

Bags and Bagging.

The market is firm on all varieties of bags and bagging. Bean bags and fruit and wool sacks are stiffer in price. Other varieties are ruling firm at appearing quotations. Very few Calcutta grain bags are to be had at any price, and domestic bags are also scarce.

Bean Bags	$	6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7	@7¾
Fruit Sacks, jute, as to quality	6½@7½	
Grain Bags, Calcutta, 22x36, spot	7½@7¾	
Wool Sacks, 4-lb	33	@ 34
Wool Sacks, 3¼ lb	30	@ 31

Poultry.

The market is steady at appearing quotations. All good young stock and large hens are in demand. Receipts of turkeys are increasing and prices are easier. Very few, however, show up "well fed" as yet.

Turkeys, choice Young, ₱ lb	$ 22	@ 25
Turkeys, live gobblers, ₱ lb	20	@ 21
Turkeys, live hens ₱ lb	21	@ 22
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	6 00	@ 7 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 00	@ 5 50
Fryers	3 50	@ 4 00
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ₱ dozen	4 50	@ 5 00
Ducks, young, ₱ dozen	4 00	@ 6 00
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	2 00	@ 2 50
Pigeons, old, ₱ dozen	1 25	@ ——
Pigeons, young	1 75	@ 2 00

Butter.

The supply of fancy butter now in the hands of dealers is rather limited, and as there is an unusually good request for this variety the price has advanced. Other grades are also moving steadily and creamery firsts are somewhat stiffer in price.

Creamery, extras, ₱ lb	25	@28
Creamery, firsts	23	@26
Creamery, seconds	21	@23
Dairy, select	20	@22
Dairy, firsts	20	@—
Dairy, seconds	18	@19
California storage	23	@25
Mixed Store	17	@18

Cheese.

The market is steady and prices are unchanged. The demand for the fancy grades is good, and it is probable that an extra fancy lot would bring an advance over the 12½c quotations.

California, fancy flat, new	11	@12½
California, good to choice	10	@10½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13½
Eastern, new	15½	@18½

Eggs.

Prices are being firmly maintained, and dealers here predict a further advance. The extremely hot weather of the past week has told against the quality of the receipts and has caused a slightly weaker feeling in the intermediate grade, stocks having a tendency to accumulate under only normal receipts.

California, select, large, white and fresh	38	@40
California, select, irregular color & size	28	@30
California, good to choice store	18	@24
Eastern firsts	21	@23
Eastern seconds	19½	@20

Potatoes.

Local dealers say that the market just at present is inclined to be a hand to mouth proposition. The local demand is not able to take care of the receipts, and the shipping demand has fallen off to a mere bagatelle. Colorado is now supplying the Texan market. The quality of the receipts for the local market has averaged very well. California Early Rose are now out of the market.

Cal. Early Rose, ₱ cental	—	@ —
River Burbanks, ₱ cental	60	@ 70
Salinas Burbanks	85	@ 1 15
Chile Garnet, ₱ cental	55	@ 65

Vegetables.

The vegetable market is now in good shape. A fairly brisk demand is maintaining prices at a good average level and the hot weather has in many cases hampered arrivals. Tomatoes are in fairly good supply, but the quality of the receipts for the current week has not been up to standard as they nearly all show the effects of the hot weather of the past few days. Lima and string beans are scarce and firmer in price. Egg plant is a shade weaker and garlic continues to advance, being now quoted at 6c per pound.

Beans, Lima, ₱ lb	2	@ 3
Beans, String, ₱ lb	2	@ 4
Cabbage, choice garden, ₱ 100 lbs	50	@ —
Corn, Green, ₱ crate	75	@ 1 25
Egg Plant, ₱ box	50	@ 65
Garlic, ₱ lb	—	@ 6
Onions, New Yellow Danvers, ₱ ctl	85	@ 90
Onions, Australian Brown, ₱ ctl	70	@ 85
Peas, Green, ₱ lb	4	@ 5
Peppers, Bell, ₱ box	40	@ 50
Peppers, Green, ₱ box	25	@ 50

Summer Squash, per large box	—	@	75
Tomatoes, ℔ box or crate	40	@	50

Fresh Fruits.

All kinds of deciduous fruits are becoming rather scarce, and plums, peaches and pears are nearly out of the market entirely. The only peaches to be had are cold storage stock, as there are no more arriving from the ranches. Apples are, however, still quite plentiful and somewhat weaker in price. Figs are scarce and somewhat stiffer in price. Grapes are very scarce and are only to be had in small boxes at $1.15 per box. The only kind of plums now in the local fresh fruit market are the late Coes Red, which are selling at 65c per crate. Berries of all varieties are stiffer in price and owing to the very hot weather are not of strictly choice quality.

Apples, choice to select, ℔ 50-lb bx	1 00	@	1 15
Apples, good to choice, ℔ 50-lb. box	65	@	80
Apples, fair to good, ℔ 40-lb box	40	@	—
Cantaloupes, ℔ box	—	@	65
Figs, ℔ one layer	—	@	60
Figs, ℔ two layer	—	@	80
Grapes, Seedless, ℔ crate	75	@	1 00
Grapes, ℔ small box	—	@	1 15
Huckleberries, ℔ lb	7	@	9
Peaches, ℔ small box	—	@	1 00
Pears, Bartlett, choice to select, 40-lb box	—	@	2 25
Plums, Late Coes Red, ℔ crate	65	@	—
Raspberries, ℔ chest	7 00	@	8 00
Strawberries, Longworth, ℔ chest	—	@	8 00
Strawberries, large var., ℔ chest.	—	@	5 00
Strawberries, Santa Clara, ℔ chest	—	@	9 00
Watermelons, ℔ doz	1 50	@	2 50
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The local dried fruit market is a trifle sluggish, but the general situation throughout the coast was never better than at present. Less than 10% of the prune crop remains in the growers' hands. This has been the best drying season on record, and, for the first time in the history of the trade, has been gotten off during the month of September. Last year, owing to the rains, it dragged along a number of weeks later than usual. Large amounts of prunes for October shipment are carried by the packers Dried peaches are now pretty well out of the growers' hands. Quotations on choice peaches are about 8c for Crawfords and 8½c for Muirs, and ½c more for extra choice. There are moderate stocks of dried apricots, which are also practically out of the growers' hands. Choice apricots are quoted at 8c and extras at 8½c. Dried pears are scarce and high; choice are 10c, extra choice 11c and fancy 12½c.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6	@	6½
Apples, extra choice to fancy, 50-lb boxes.	6½	@	7
Apricots, Royal, good to choice, ℔ lb	6½	@	7
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box, 1-lb cartons	5›	@	6‡½
Nectarines, White and Stanwick, ℔ lb	7	@	7½
Nectarines, red, ℔ lb	—	@	6
Peaches, unpeeled, good to choice	7	@	7½
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ℔ lb	7	@	7½
Pears, choice to fancy	8	@	10
Plums, Black, pitted	5	@	6
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3½@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3½
Figs, White, in bulk	2	@	2½
Figs, Black	2	@	2½

Raisins.

The local raisin market is unchanged. Stocks of 1904 goods are very light, but sufficient to supply the market till the new crop arrives. The directors of the California Raisin Growers' Co. announced opening prices last week. The prices are higher than they ever were before except in 1903. There was a heated controversy among the directors before the prices were fixed. The following prices are those named, but local dealers are not inclined to pay those figures, as they believe they are opening too high. The raisin crop is estimated not to exceed 35,000 tons, or about one-third of the stock available on October 1 last year. There is this year no carry over from the last crop and the stocks in second hands are said to be in closer compass than has been the case in years. In addition to this, the bulk of the California acreage, amounting to 55,000 acres, is under the control of the growers-packers' combination.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 25	@	—
London Layers, 3-crown, 20-lb box	1 35	@	—
Fancy Clusters, 4-crown, 20-lb box	1 50	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	2 50	@	—
2-Crown Standard loose Muscatel	4½	@	—c
3-Crown Standard	5	@	—c
4-Crown Standard	5½	@	—c
Seedless Thompsons	6	@	8c
Seedless Sultanas	3½	@	4c
Fancy, 16-oz. Seeded	8	@	—c
Choice, 16-oz. Seeded	7¼c		
Fancy, 12-oz. Seeded	6½c		
Choice, 12-oz. Seeded	7 c		

Citrus Fruits.

Owing to the fact that the local fresh fruit market is now nearly bare of deciduous fruits, the attention of consumers is now being turned more toward oranges and other citrus fruits. There have been several arrivals of the new intermediate crop of Navel oranges this week, which found ready takers at $4.25. Lemons and limes are steady at appearing quotations and grape fruit is scarce and somewhat firmer in price, this being especially true of the seedless varieties. It is predicted among local dealers that the new lime crop, which will soon commence to arrive, will meet with a good demand and good prices.

Oranges, Navels, intermediate crop	4 25	@	—
Oranges, Valencias, ℔ box	2 00	@	4 50
Lemons, California, fancy, ℔ box	2 50	@	3 00
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ℔ box	—	@	3 00
Limes, ℔ box	4 00	@	4 50

Nuts.

New crop almonds are arriving freely and are of good quality. Prices now being paid by local dealers are somewhat lower than those at which the Association said they would open. Transactions made in the local market were for I. X. L.'s at 11c; Ne Plus Ultra, choice basis, 11c, Non Pareils 12c, Languedocs 7½c, Golden State 7c and hard shells 5c. The new crop of walnuts is now being gathered and is of a very fair quality.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ℔ lb	11	@	12
Almonds, Ne Plus Ultra, ℔ lb	11	@	12
Almonds, Nonpareil, ℔ lb	11	@	13
Almonds, Languedoc, ℔ lb	7½	@	—
Almonds, Golden State, ℔ lb	7	@	—
Hard Shell, ℔ lb	5	@	—

The Lantern on the Farm.

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of yours is earning only 3 per cent interest. Draw fifty dollars of it and become a part owner of Smiths' Cash store of San Francisco. You can buy five shares of stock at ten dollars a share that are guaranteed to bear interest at not less than 6 per cent a year and that will enable you to obtain household supplies at owner's prices.

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THE DAIRY.

How About the Silo?

We recently had two accounts of experience with the silo in California which were in opposition on the question of desirability. We give another below on the affirmative side and shall be glad to have others. Who can tell us of a silo which is not in use and why? Mr. E. E. Moore, of Compton, Los Angeles county, gives the Los Angeles Cultivator the following strong declaration:

I have no doubt that some of your readers who are dairymen do not own a silo, and perhaps do not believe it much good. On this point I would say that any one owning ten cows would add at least $20 per cow per annum to the earning capacity of his herd by feeding say thirty to forty pounds daily of corn silage. I began its use about six years ago when I owned ten cows. I constructed a square silo in one corner of my hay mow by nailing No. 2 6-inch flooring to 2x6 studding 24 feet long. I placed the flooring with the groove up and filled this groove with heavy paint. In each of the corners I put a 2x8 beveled at the mills, so that the sharp angles of the box was cut off. This silo holds about fifty tons and has been in use ever since it was built.

A couple of years ago I put up a stave silo outside of the barn; this was constructed of 2x6 rough redwood, is 30 feet high and contains perhaps seventy-five tons. The silage in this tub has been equally as good as in the square one. This fall I have constructed two other stave silos, one of 100 tons capacity, and the other of sixty tons, so that I now have close to 400 tons capacity for my 100 cows.

So much for the silo. I might say, however, in passing, that none of these silos cost me over $100 and some as low as $60.

Another good style of silo is made by ripping fencing into ½-inch stuff and putting tarred paper between. I am told this makes a cheap, easily constructed silo of great capacity and durability. I am inclined to think that I shall try this style when I increase my silage capacity, as I surely will by another season.

Now as to filling: I first used a No. 3 Lambert engine and No. 131 cutter. This machine would put up about three tons per hour. Then I got a 6 H. P. Lambert and No. 18 Ohio, having sold the old one. I now have a Climax blower and cutter, which is run by an 18 H. P. White & Middleton engine, and with this last machine I have put through forty-five tons in 180 minutes, or a ton every four minutes. Where one does not desire to go to the expense of buying the machinery he can easily hire it cut at 30 cents per ton. One peculiarity about the work of the Climax cutter I have noticed is that the stalk is entirely crushed and shredded besides being cut, so that a silo will hold much more and the cows do not leave any because of sharp edges or chunks.

A very common mistake in the preparation of silage is made in cutting it up too green. When this is done the succulent juices will run to waste and much of the food value is destroyed. If the corn is kept well irrigated and growing it is best to have the ear pretty hard. Of course, when the lower blades die and the lower part of the stalk gets yellow, it is not right, but this will not occur if kept in good growing condition up to the last.

I have always fed my cows at noon, thus keeping away any unsavory odors during milking. I find that they require from thirty to forty pounds per head. I always figure my silage in at $3 per ton. If one has to buy the corn and hire it cut, it may cost perhaps $3.50 per ton, and where one raises all the corn and has his own machinery, the cost would not exceed $2.50 per ton. When fed in conjunction with beets and alfalfa hay, you have a perfect ration and one that will develop to its fullest the capacity of your herd. Any single ration must necessarily be unsatisfactory and consequently unprofitable. I always salt my silage so that the cows eat more and drink more perforce, and this adds greatly to their milk production. I have also salted my alfalfa hay this year and I believe it will be found satisfactory. I have been handling dairy cattle now for ten years, and some of the best cows on the coast with pedigrees equal to King Solomon's, and I find that they all take to silage like a duck to water, and with unvarying good results. Not only is the quantity of milk increased but also the test is very perceptibly higher when feeding silage.

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Stallion Law of California.

The stallion law of California is new, having been approved in March, 1905. Every owner or person having in charge any stallion, jack or bull used for propagating purposes has a lien for the agreed price of its service upon any mare or cow and upon the offspring of such service, unless some willfully false representation concerning the breeding or pedigree of such stallion, jack or bull has been made or published by the owner or person in charge thereof, or by some other person at the request or instigation of such owner or person in charge.

Every claimant of a lien provided for in the preceding section must, within ninety days after the service on account of which the lien is claimed, file in the office of the county recorder of the county where the mare or cow subject thereto is left, a verified claim containing a particular description of the mare or cow, the date and place of service, the name of the owner or reputed owner of such mare or cow, a description by name or otherwise of the stallion, jack or bull performing the service, the name of the owner or person in charge thereof, and the amount of lien claimed. Such claim, so filed, is notice to subsequent purchasers and incumbrancers of such mare or cow and of the offspring of such service for one year after such filing.

Action to enforce this lien may be brought in any county wherein any property subject to the lien may be found.

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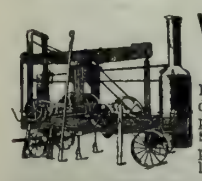
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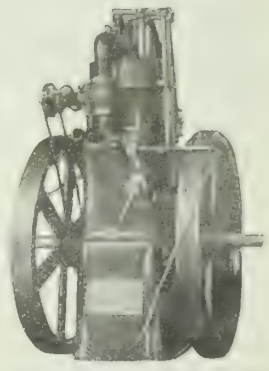
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Patrons of Husbandry.

The State Grange.

To the Editor:—The California State Grange held its thirty-third annual session in Napa last week. All of the subordinate Granges in the State except four were represented.

The citizens of Napa City and the members of Napa Grange did much to make the session both pleasant and profitable. They tendered the visiting Patrons a reception Tuesday evening that was thoroughly enjoyed and greatly appreciated by all who were in attendance.

Many important measures that are now before the public were considered and much time and serious thought were given to devising methods for the advancement of the order.

The secretary of the State Agricultural Society appeared before the Grange and explained the society's position and desire to co-operate with the Patrons of Husbandry in the interest of the producers.

Resolutions relating to parcels post, increasing the powers of Interstate Commerce Commission, tariff laws, equal suffrage, forestry and irrigation, good roads, rural mail delivery and the following resolution defining the position of the California State Grange on the temperance question were adopted:

Resolved, That the State Grange is unalterably opposed to the selling or the granting of any rights or privileges for the sale or distribution of any spirituous liquors at any Grange gathering or picnic.

Thursday night a large class was initiated in the fifth and sixth degrees and the Feast of Pomona was observed.

Friday night the officers for the ensuing term were installed and the Grange closed until its reopening in Santa Rosa on the first Tuesday of October, 1906.

Emily L. Burnham,
Sec'y Cal. State Grange.
Healdsburg.

Continued Proceedings of State Grange.

Second Day.—On the second day of the State Grange at Napa proceedings were resumed, with a large attendance of delegates. Master H. C. Raap of Martinez presided. Reports were read from various Granges throughout the State showing a gain of 500 in membership over last year. The San Jose Grange presented a strong resolution asking that the authorities take prompt steps to establish a State agricultural farm, and that it be located at some point in the interior. Pomona Grange of Sacramento county presented a resolution asking that Governor Pardee appoint a representative from the State Grange on the State Board of Agriculture. Later in the session the State Grange will recommend some one to the Governor, if he approves of the plan.

Strong resolutions were presented by Glen Ellen Grange of Sonoma county asking that the national Congress pass no tariff reciprocity laws or treaties with foreign countries which would be detrimental to the industries of California.

A special programme was then presented on the good of the order. Addresses were made on various topics, as follows: "Essentials and Obstacles to Progress of Grange Work," Prof. D. T. Fowler of Berkeley; "What We Have Done and Are Now Doing," John Tuohy of Tulare Grange, Tulare county; "Unimproved Opportunities," John S. Dore of West Park Grange, Fresno county; "Educational Advantages of the Order," Walter W. Greer of Sacramento; "Social and Co-operative Advantages," J. E. Metzgar of Geyserville Grange, Sonoma county; "Fraternal Advantages," D. J. Brown of Napa Grange.

A resolution was passed by the State Grange, to be submitted to the National Grange, providing that hereafter each subordinate Grange should be allowed two representatives in the State Grange. Under the present rules the wife of the Master of a subordinate Grange is unable to attend the convention.

Third Day.—The most important business transacted the third day was the election of officers for the next two years. The following were chosen:

Master	W. V. Griffith, Geyserville
Overseer	S. W. Pilcher, Folsom
Lecturer	J. W. Webb, Modesto
Steward	E. C. Shoemaker, Visalia
Assistant Steward	N. H. Root, Stockton
Chaplain	Mrs. C. F. Emery, Oakland
Treasurer	Daniel Flint, Sacramento
Secretary	Miss Emily L. Burnham, Healdsburg
Gate Keeper	S. S. Gladney, Roseville
Pomona	Mrs. Lottie V. Mitchell, Campbell
Flora	Miss Laura S. Root, Stockton
Ceres	Mrs. Eliza J. Farrell, Mountain View
Lady Assistant Steward	Miss Carrie D. Hansen, Mills Station
Organist	Mrs. Bessie McKnight, Napa

EXECUTIVE COMMITTEE.

Thos. Jacob	Visalia
G. N. Whitaker	Santa Rosa
Michael Farrell	Mountain View

A proposed amendment to the constitution and by-laws was presented, providing that the annual meeting of the State Grange be held on the second Tuesday in December, instead of the first Tuesday in October, as at present, but the amendment was voted down by a small majority.

A resolution was passed strongly indorsing the system of a parcels post for the United States Postoffice Department. A proposed amendment to the constitution, providing that each quarter the Secretary of subordinate Granges should report to the State Secretary the names of only those members whose dues are paid up, was voted down.

At the afternoon session a resolution was passed providing that hereafter all reports of officers of the State Grange be printed in advance of the session, so that they can be placed in the hands of the delegates.

Some time was devoted to the good of the order, remarks being made by Master W. V. Griffith of Geyserville Grange, Sonoma county; Lecturer H. F. Tuck of Lincoln Grange, Santa Clara county; Deputy Master D. M. Winans of Marin and Sonoma counties, and Steward E. C. Shoemaker of Visalia Grange, Tulare county.

A report was made that Rochdale co-operative stores are succeeding in California, and that mutual fire insurance is succeeding in Oregon, and should be advanced in this State.

Fourth Day.—Proceedings were resumed, Master H. C. Raap presiding. An amendment to Article 1 of the by-laws was passed, providing that the Master and the State Lecturer should be paid $700 per annum in addition to their necessary expenses while engaged in the work of the Order. The by-laws of the State Grange were also amended, making the compensation of the District and County Deputy Master $3 per day.

Article 8 of the by-laws was amended fixing the fee for membership in subordinate Granges at $2. The convention decided to hold its next meeting at Santa Rosa.

The committee on co-operation, of which J. E. Metzgar of Geyserville Grange is chairman, reported in favor of the State Grange establishing a bureau of statistical information to collect information on crops and resources in the various counties in the State and forward them to subordinate Granges. The convention adopted the recommendation and also one from the same committee in favor of establishing a State agricultural federation, to consist of representatives of the State Board of Agriculture, the State Board of Horticulture, the State Grange and other bodies interested in agriculture.

The matter of the University farm was discussed at length. The special committee, of which W. W. Greer of Sacramento Grange is chairman, presented the following resolution, which was adopted by the convention:

"We request that the commission proceed with as little delay as possible with the selection and purchase of the University farm, that the farm be put to use not only for purposes of instruction, but also for experimentation on agricultural problems, and we request that such farm be selected from land in an interior county and not from land about Berkeley."

Installation of the new officers was held Friday night.

Profit-Sharing Farming.

The London Daily Mail writes of efforts to check the depopulation of English villages, which is reaching alarming proportions, and says several large landowners have decided on a system of profit sharing with their agricultural laborers, hoping by this means to stimulate "Hodge" to take a greater interest in his employment. The system of sharing farm profits was initiated by Mr. E. W. Hussey, a large estate owner of Scotney Castle. Every year the hands are called together and each receives a share of the profits made on the year's working of the farms. On the last occasion of the profit sharing each man received $13.13, while a youth's share amounted to $8.75. In cases where several members of a family are engaged on a farm, sums approaching $48.66 have been taken home. The system has had such successful results that Mr. Hussey has received numerous inquiries asking for details as to the working of the scheme, with the consequence that other farmers in the county have expressed their intention of working on similar lines. All the employes on Mr. Hussey's Lamberhurst estate now take such a keen interest in their work that they exhibit no inclination whatever to migrate to the towns. Lamberhurst, though a very small place, has long been looked upon as a model village, everything being done to encourage the inhabitants to remain within its boundaries. The wealthy residents in the neighborhood have established a number of up-to-date recreative institutions, and the village is unaffected by the problem of the unemployed.

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For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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W. H. Benteen, manager of the San Monte Fruit Company, and James Copeland, says the Watsonville Pajaronian, are the originators of an ingenious appliance for use in grading apples, and the same is in operation at the San Monte packing house. The invention consists of a wooden structure about 54 feet long, 6 feet high and 2 feet wide, substantially constructed and amply braced. The structure contains three decks, one above another and two feet apart. Over each of these an endless belt of canvas, with cleats about 8 inches apart, so as to catch and carry the apples, passes by means of cog-wheel machinery with sprockets and chains. The motive power of this grader is furnished by a 3 H. P. electric motor. Each of the belts, or sections over which the apples pass, is devoted to different purposes. The top belt carries off the culls at the end, depositing them in boxes that have been placed for them; the second division carries fancy or first quality fruit, while the third conveys the second quality fruit to the hand graders. The object of this new appliance in grading is to eliminate, on the part of the girls who do the grading, the necessity of thinking of so many things at once and looking after various sizes of apples. From twenty to forty hand graders can work at one time—half working on either side of the mechanical device—thus rendering the grading more accurate and confusion impossible.

In explanation of how the apples are handled we will state that a number of young ladies stand at the starting end of the grader and grade the fruit for quality, the culls being placed on the top carrier, the fancy stock on the second carrier, and the second-grade fruit on the third, or lower carrier. The young ladies, who are stationed all along the route of the belts, look after their own section and grade to size as the belts carry the fruit along. They soon become quite expert and can grade fruit almost perfectly with the eye. They deposit the different sizes in their respective boxes and the same are then ready for the packers. This new system gives the apples two careful handlings instead of one, as under the old system. The continual movement of the belts prevents loafing on the part of any of the operators, yet it does not work them hard. The new invention will handle up to 3000 boxes of apples per day easily.

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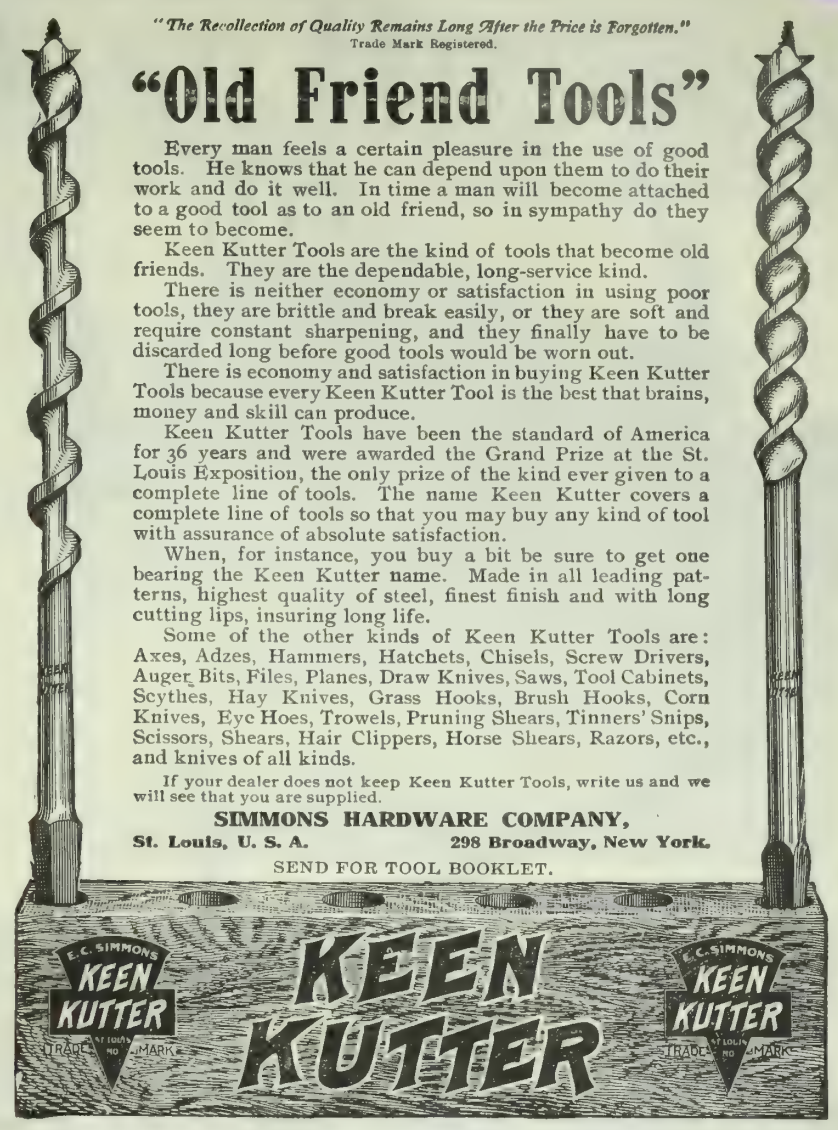
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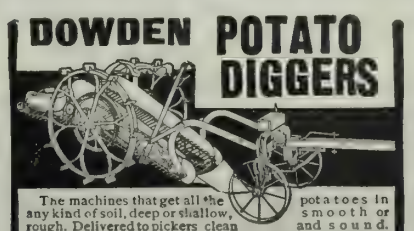
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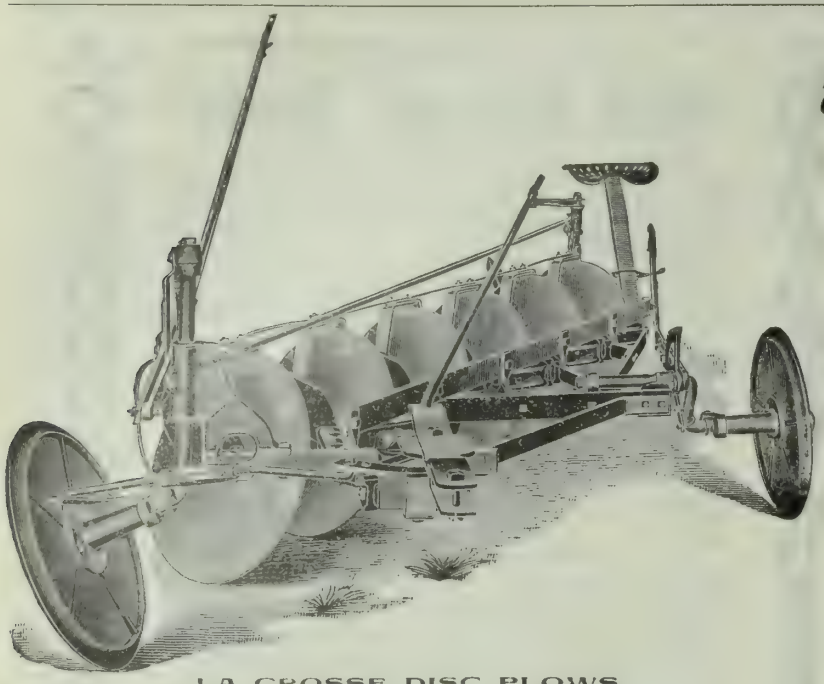
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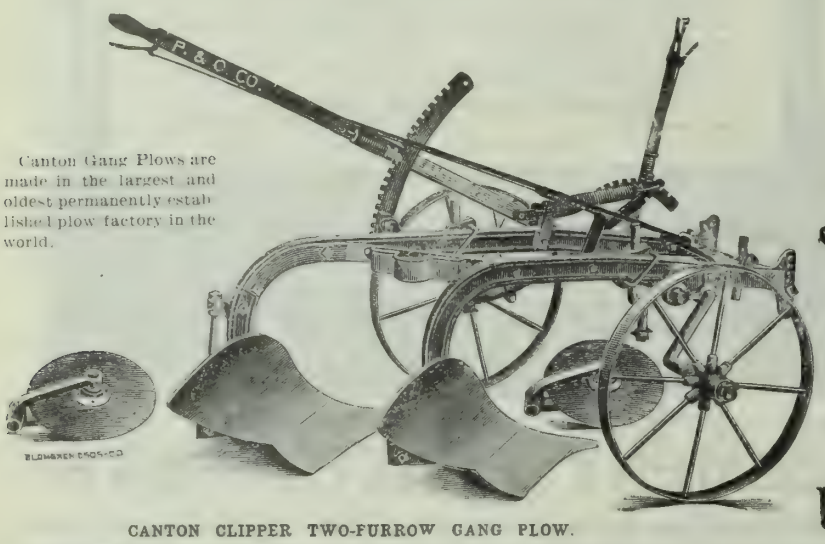
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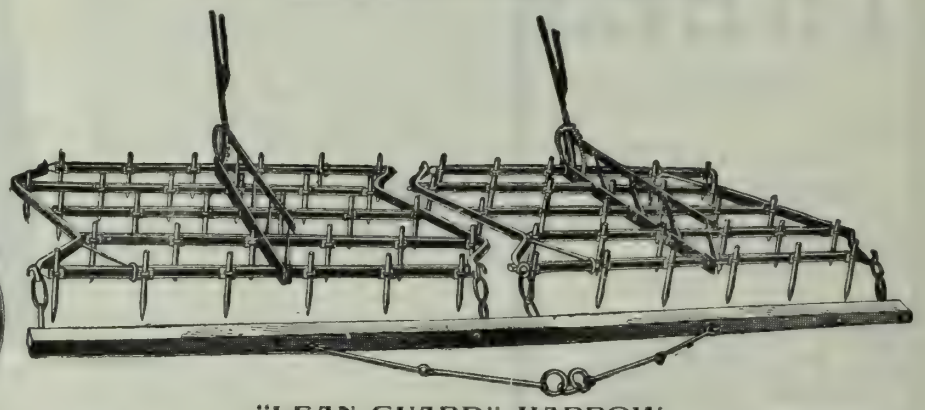


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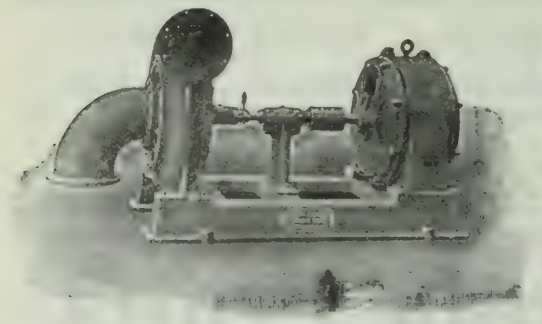


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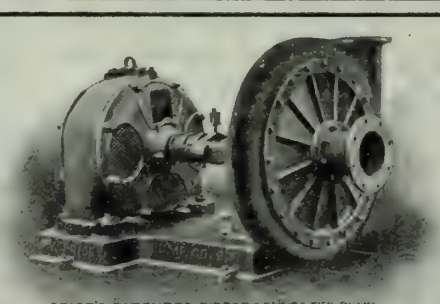
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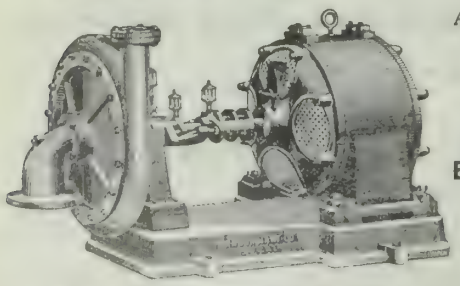
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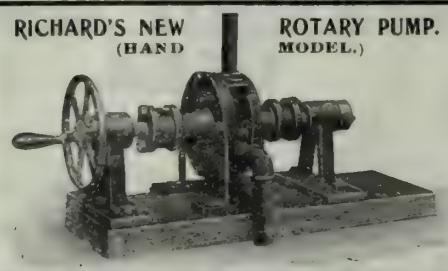
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THE PACIFIC RURAL PRESS

AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 17. SAN FRANCISCO, SATURDAY, OCTOBER 21, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Mountain Movements.

We do not refer to movements of mountains, but to methods of movements on mountains, as our pictures indicate. When it comes to very rough country the airship rises as an ideal of locomotion, because it is presumably just as smooth in the air over mountains as over plains, but when it comes to railway trains, automobiles, teams or pedestrianism, the mountains are a weariness to steam or gasoline or muscle. For this reason flying through the air by inverted trolley on the top of a cable, as a man is doing in one of the pictures, is accepted as a method approaching the ease of an airship and much safer. Crossing canyons or streams in this way, or moving freight in the same way, is, therefore, often resorted to in the mountain country. These devices are called aerial tramways, and they are undoubtedly a great benefit where the mountains are extremely high and the traffic must be conducted in out-of-the-way places, where it requires several miles to reach by wagon road or trail, while the aerial tramway is built over the most precipitous mountains and across gulches. These tramways do not need to be straightaway concerns. We have read of a tramway in three sections, the first of which runs 1800 feet at a 35° grade, the next section, 760 feet, at a 50° grade, and the last, 2200 feet, at a 63° grade. This is a very steep affair, and to one not accustomed to riding tramway lines it looks as if the bucket were going straight up. The sensation cannot be described. The total length of the three lines is 4750 feet, with a fall of 2200 feet.

When the traffic has to go in various directions, where cables cannot be stretched, then the old-fashioned way of packing or teaming is still in vogue, and our pictures show several instances of it. Some striking achievements of packing are known to almost all our mountain readers. In the pictures of packing on this page one accomplished the transportation of material for a boarding house from the railroad up a gulch, where a trail was struck and followed to the top of the mountain, making about 5 miles by trail and less than 1 mile straight up the hill, where it was lowered down in an improvised chute a distance of 500 feet. A steel range for the boarding house was also handled in this manner.

The pack train in some sections is almost a necessity, as to build wagon roads would mean large amounts of money, and until the country is more thickly settled the pack train must of necessity take the place of the railroad and tramway. The pack train shown herewith consists of seventeen mules carrying 3400 feet of 1⅛-inch wire cable in one piece for use on an aerial tramway. Freighting by wagon is, of course, a familiar affair in the mountains. In some instances, however, where there is a fairly good road, the operators seem to think it the cheapest and most economical to pack the material in preference to hauling by wagon.



Pack Train Conveying Building Material, Etc.



Seventeen-Mule Pack Train Conveying 3400 Feet of 1⅛-Inch Cable—All in One Piece.



Passenger Crossing a Chasm on an Aerial Tramway.



A Freight Team About to Start for the Railroad Station, 80 Miles Away.

THE special commission, appointed by the last Legislature to locate a new laboratory for study of plant diseases and a horticultural experiment station, went to southern California on that errand this week. The commission consists of Governor Pardee, President Wheeler and Professor Wickson, of the University of California, under whose direction the new establishments will proceed with their work, when duly established by the special commission.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, OCTOBER 21, 1905.

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The Week.

The skies hold bright and clear and weather comments of a week ago may be repeated. Surely there is not often a year when harvesting conditions have been so continuous, and if the last grape and bean and apple are not successfully gathered it will be the growers' fault. Naturally some dry-year talk is heard, but the apprehensive apparently forget that the best year is one in which rain begins rather late and then keeps at it, at proper intervals, to allow for both growth and work to proceed. The very early rains are seldom more than dust-dampeners, and, when heavy enough to spoil old grass and start new, there is often a long drouth which merely lessens the amount of seed which is available to make permanent winter growth. It looks as though this danger has passed for this year, and the consumption of hay will help use up the old crop and improve the outlook for the new. It is, however, rather hard on those who have to buy feed while the fields are bare. They must get what recompense they can from the better prices, which will hold later in the season than usual. There is, of course, ample time for the realization of a most favorable season all around.

Wheat abroad is advancing by reason of peculiar commercial conditions in Europe. In this market a drooping tendency just after our last report has been checked, and last week's figures still hold. Harvesting conditions of the coast are being injured by rains, which have not extended to our latitude yet. Barley is still going up, and the highest market of the season was struck this week. Receipts of barley are still exceedingly small. Barley helps to raise oats, and corn is high from scarcity. Rye is also scant and the advantage on the seller's side. Beans are arriving heavily, and most kinds weaker save Limas, which are held for better prices. Mill stuffs are still in active demand and high. Hay is coming more freely again and lower grades weak, although improvement is to be expected if dry weather continues. The best beef is doing better and other meats are steady. Butter overreached itself and receded a little, but the situation is still promising. Cheese is improving. Eggs are firm. The best poultry and potatoes are in active demand; other grades somewhat easier. Onions have improved. Oranges have held high and the demand is good; lemons and grape fruit are also doing well. Deciduous fruits are also in good shape. Dried fruits are also strong, except that prunes are not as active as their present owners desire; prune growers have little stock left to worry over. Almonds are forced down by large crop figures, while walnuts are late and expected to hold values well. Honey holders are still confident and buyers aloof. Hops are slow and above buyer's views. Wool is quiet here, though much trade is doing at country markets.

The rush for records in the early orange market is now on. Mr. Parker Whitney scored on October 16 with a shipment of Navels from his Spring Valley ranch at Rocklin, Placer county. The fruit is well matured, very smooth and fairly well colored. Mr. Whitney is making continuous effort to demonstrate that Placer county can produce oranges equal in quality to those in any other part of the State and can produce them much earlier. The crop is always harvested by January 1st and at much better prices than are realized on later oranges. This is an effort which several districts can share in and they are all invited to the race with Placer county.

We wonder how much agriculture has contributed to the list of defunct corporations. Since corporations have been ordered by the Legislature to pay a license fee, Secretary of State Curry has been after them. There were 43,000 corporations on the State books, and, when notices were sent out to them, about 20,000 were returned as not being visible to the mail carriers. Up to date, according to returns made at the office of the Secretary of State, 8609 corporations have paid the corporation tax of $10, and nearly a thousand have paid the corporation tax of $10 and the $5 penalty added because the tax was not paid at the time specified in the law. So it appears that less than one-quarter of the organizations incorporated by law have contributed to the State treasury, and the rest are advertised as delinquent. These facts are interesting to farmers, who rightly believe that corporations ought to carry more of the burden of taxation.

It is the law that if you sell potatoes you really must dig them up somewhere. An Oregon firm sold to a Sacramento firm two carloads of potatoes. The Oregon concern failed to carry out its part of the contract, claiming that the company could not get hold of the necessary potatoes, and the buyer began suit, asking that it be awarded damages in the sum of $420. Judge Shields held that the plaintiff was entitled to judgment in the amount stated and the District Court of Appeal has affirmed the decision.

Many will be surprised to hear how much it costs to market a crop of horses at the East. It is estimated in the Sacramento Union that it will cost James B. Haggin about $48,000 to transport his 600 head of horses East if he decides to send them to New York for sale following the disposal of his Rancho del Paso breeding stud. It has been stated that the horses will be sent across the continent by express, and, if so, forty-eight cars will be required. It is claimed the contract with the express company calls for the cars to be ready November 15th, and five days will be required for the trip. The plan is to divide the forty-eight cars into four special trains, or one train of four sections, which will run on passenger schedule time, the horses reaching New York ten days or two weeks before the proposed date of the sale. To start in with an express handicap of $80 per head for transportation alone, not counting other expenses, makes the horse crop rather a hard one to handle on two sides of a continent.

If we only had more woolen mills in California it would help the wool market greatly. At the sales at Wheatland and Marysville on Saturday last there was a large clearance of stock. The first day of the sale the Marysville Woolen Mills purchased more of the wool than did all the eleven other buyers combined, there being, apparently, a disposition among the outside buyers to keep down the prices. From the amount of wool purchased for the mills it is evident there will be great activity at that establishment. The prices paid ranged from 13½ to 17 cents. There were about 1600 bales of wool offered for sale at the two places. If it had not been for the local mills it would have been a sad day for the growers.

QUERIES AND REPLIES.

Mr. Burbank's Work.

To the Editor:—I have been appointed to read a paper on "The Scientific and Practical Aspects of the Work of Luther Burbank." Mr. Burbank's achievements have been very much exploited in literary and horticultural periodicals within recent years and I have accumulated considerable data on the subject. There is no questoin that he is a miracle worker in plant forms; but are not some things claimed for his improvements that have not yet been thoroughly tested by economical experiment—for example, his wonderful thornless, speculeless cactus, it is asserted, has been rendered so climate-proof that it will grow in any soil or temperature almost from the equator to the poles? How can this be known? It would not seem that it has yet been planted to any extent outside of Mr. Burbank's grounds; and how can one be assured that the valuable characters will persist when the plants are grown in such numbers as to realize the claim made for them—"to render the desert habitable for man and the domestic animals?"

What of his idea that a graft can have an effect to change the nature of an entire tree? Are not the seedless fruits, as a rule, lacking in flavor? Is the blackberry-raspberry of commercial importance? We are growing his Wickson and Burbank plums, which are fine, though not of the richest flavor. We have grown the Burbank potato and discarded it for better varieties—that is, for those finer on our clay soil. If I am not asking too much, will you not aid me by giving me the opinion of a practical horticulturist on the economic value of a considerable proportion of Mr. Burbank's "creations?" As scientific experiments, I do not undervalue them. They are wonderful and startling in their overturning of what have been regarded as established laws of plant development; but, from a practical point of view, some of them do not appear to me to be "worth while."—Enquirer, Chicago.

It is true that all sorts of exaggerated reports have been printed as to what Mr. Burbank has done, and it is also true that he can not be blamed for them. They are prepared by different people who must have something sensational to print, and consult their fancy rather than the records of what has been actually accomplished. It must also be remembered that many of Mr. Burbank's new things have not had sufficient time to have their practical value demonstrated. It will take years to do that, and, no doubt, many of his creations, though exceedingly interesting and important, may for some reason or other not meet the requirements of commercial fruit growing, and for that reason will be abandoned. Nothing but actual trial of sufficient duration will demonstrate these points with reference to the cactus and other new things.

Mr. Burbank believes that the graft will change the nature of an entire tree, because he has found that, in putting grafts into trees that were formerly barren, not only has the graft grown and borne well, but later growth below the graft has also borne fruit, although it never did before. Upon such observation as that and many others, he believes that the whole nature of a tree can be changed by the influence of a graft, though just in what way remains to be determined.

Fruits practically seedless are not necessarily lacking in flavor. The California Navel orange, of which probably $10,000,000 worth has been produced in a year in California, is one of the highest and best flavored oranges in the world; at the same time, some fruits boomed as seedless are of no commercial value whatever. The seedless character in itself does not seem to be at enmity with flavor. Another instance is our Thompson's Seedless grape, from which small seedless raisins are produced, and the Zante currant, so-called, which is a seedless grape which has grown for centuries in the Grecian Archipelago, is also a fine grape either for raisins or wine, and certainly not lacking in flavor. The reason why some of Mr. Burbank's new plums built upon Japanese ancestry are lacking in flavor is because the whole Japanese class of plums is thin of juice and lacking in the richness of the domestica and other plums built up upon that ancestry. The Burbank potato is the leading potato in California; but it has been abandoned for years at the East, because other varieties were more hardy and better. Mr. Burbank's new varieties will be like new varieties from other sources—some to be good and worthy of perpetuation, others to be inferior on the final test. Among those most fully demonstrated to be good and commercially valuable in California, the blackberry-raspberry hybrids stand high. Many writers claim far more for Mr.

Burbank's varieties than he claims for them. He can afford to wait for the fullest tests; they will not wait, and they make a great deal of trouble both for him and for other people.

A Phylloxera Spot.

To the Editor:—By this mail I send you a package containing bark, canes and roots from grape vines. You will observe that the canes and grapes did not attain their full growth. About one month since all the leaves fell off and the vine appeared to die. All of the roots are from near the surface. Some of them are entirely dead and those that yet have sap in them seem diseased. There are amber colored objects that, under the microscope, appear to be like lice. Please let me know the trouble and the best thing to do to save the rest of the vineyard. About twenty-five vines are in the condition described; none of the rest seem injured.—A Subscriber, Napa, Cal.

This is a most excellent description of the entrance of the phylloxera, including the identification of the insect itself. You have to deal with that dread scourge of the vine which has destroyed so many thousands of acres in this State, and against which the whole strenuous efforts for resistant vines is being primarily directed, although resistance against the Anaheim disease also is now rising into prominence. If you find no more spots in the vineyard, the conclusion is that the insect gained access at one point, probably some time ago, and is now spreading outward in all directions from the point of entrance, as is usual. An old spot generally shows several dead vines in the center, then a ring of vines with very short growth and no grapes, next another ring where the growth is not of normal vigor, but where the crop may be equal to or larger than that of the healthy vines. Such a spot enlarges its area year after year at a gradually accelerating rate as the front of the invading army becomes longer. The rate of advance will vary with the soil and climate, but will probably never exceed 40 or 50 feet annually.

Unless there is water available so that a levee can be thrown up all around the spot, including also a ring of the nearest healthy vines, and it be kept full of water for several weeks so as to drown the insect, it is better to apply the death treatment directly by pulling up all the vines in the spot and next to it and burning them in the center of the spot. Do not make the old mistake of dragging them all around the place so as to save them for firewood and in that way spread the insect far and wide. After the vines are grubbed out and burned the ground should be kept clean of all growth for at least one year. This is in order that any suckers which may come up from the roots may be destroyed immediately. If crops, or even weeds, are allowed to grow, some of these suckers may escape observation and serve to keep the insects alive to spread the pest the next year. If the affected spot is not too large it is well to disinfect the soil with bisulphide of carbon. This is applied by pouring one ounce each into holes placed 2 feet apart all over the land to be treated. These holes should be about 1 foot deep and can be made with a small crowbar or dibble. After pouring in the liquid, the hole should be closed by pressing earth into it with the foot. The spot should be strictly isolated in all farming operations. In cultivating the healthy parts of the vineyard, to pass through the infested spots with plows or hoes is a most effective method of accelerating the spread of the insect.

Johnson and Bermuda.

To the Editor:—At what time of the year should Bermuda grass and Evergreen millet be sown to get the best results? Would they do well sown with a nurse crop, such as barley? Where can the Bermuda grass seed be had and about what cost? In answering the first and second questions please remember that we expect to sow the grass seed on high, dry Santa Cruz mountain land without irrigation.—Enquirer, Corralitos.

Probably nine out of ten of those who know these grasses would advise you never to sow them at all. If, however, you get over that point, we can advise you to sow seed or plant root pieces rather late in the spring, because both grasses are summer and not winter growers, and root best when the ground gets well warmed up after the rains. You can sow or plant with a nurse crop or not. It does not matter which; if they like the place you cannot get rid of them without a very hard and enduring effort. It is possible that Evergreen millet or Johnson grass will let go of itself, because it does not like dry uplands—the very place where it would be most useful. Seed of Johnson grass is abundant, but Bermuda grass is such a scant seeder that it is usually planted with root cuttings made by running the long roots through a hay cutter. You can get seeds or roots from seedsmen if you can find one who does not think that dealing in them will give his place a bad name.

Soil for English Walnuts.

To the Editor:—I have a young orchard of English walnuts. How can I best tell if the land is suited to them? Is it necessary to have the soil analyzed, or can I tell otherwise?—Owner, Santa Cruz.

It is not necessary to have a chemical analysis made to indicate fertility. The plants themselves do that better than the chemists can do; and if you find a piece of soil producing satisfactory crops, it is as good indorsement as you can have, if you bear in mind, also, whether the crop is deep or shallow rooting. If your walnuts are growing well and you have reason to think, from the digging of wells or otherwise, that your soil is quite deep; that it is free from hardpan; that water does not gather and remain long in the soil—you can expect the success of the walnut. There is, however, one more thing which is necessary to the success of the walnut tree—that is, that moisture enough should remain in the soil so that the tree is able to carry its foliage rather late in the fall, because a long growing season is necessary to the ripening of the nut and to the preparation of the tree for the following year's bearing. Walnut trees on shallow soils, or on soils liable to become waterlogged, or on soils which dry out in mid-summer, are not generally a satisfactory investment. The tree manifests its displeasure in all such situations by dying back from the top. If you have walnut trees which grow well, remain thrifty in the extremities of the branches, it is fair to conclude that soil conditions are favorable.

Hot Wires and Berry Canes.

To the Editor:—I intended to train up some logan and raspberry vines with wire, but people have told me that they believe the wire will kill the plants when heated by the sun in hot weather. I have read of a party who had them training on wire in this way, but climatic conditions may have been different. Please give me some information on the subject.—Grower, Amador county.

We have never heard that injury has resulted from heated wires used in training berries. Wires are largely used in the interior of California. The only person who can answer your question is one who has seen the injury done. Wires have been used for years in training grapes like the Thompson's seedless in the very hottest parts of the State. Although there are cheaper ways of growing these berries than wire training, our impression is that your informant who says he believes that wire will kill them is drawing upon his imagination.

Winter Work Against Fungi.

To the Editor:—Last spring the shothole fungus attacked my almond trees so badly that half of the nuts fell off. Do you think it would be advisable to spray with Bordeaux mixture, winter strength? Also, where grape vines are badly affected with mildew, would it be best to spray with Bordeaux first and sulphur them later?—Grower, Woodland.

It certainly would be desirable to give a good winter treatment and you would, probably, find that such killing of the spores on the bark would save your almonds if the trees have good growing conditions afterwards. The vine treatment is, also, rational, but the sulphuring can probably not be dispensed with, but you may be able to begin later with sulphur than you could if you used no winter spraying.

Merely Spider's Eggs.

To the Editor:—I enclose sections of orange leaves with eggs. Are they eggs of the common spider or something else? I find in my orange trees—also guavas—where these are, bunches of spider webs in many places where blossoms have come out, that the blossoms or fruit just set are all destroyed. Do spiders do that work? If not, what does? I have not supposed the presence of spiders in trees and shrubs to be harmful.—Grower, Santa Barbara.

The objects you find are merely egg masses of a common spider, which lives, as spiders usually do, upon other insects. They have no relation to the behavior of your trees which you describe and which must be attributed to some other cause to this deponent unknown.

Estimating Weight of Barley Hay.

To the Editor:—Please inform me if there is a rule for measuring barley hay in the stack. I have them for measuring Eastern hay, but the barley hay of California is a very different article, and there should be a rule for California.—Joseph Sexton, Santa Barbara county.

Who has worked this out? We cannot answer the question.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 16, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

The weather was dry and clear during the past week, with temperatures slightly above normal. These conditions were very favorable for grapes and beans, and fruit drying. Large shipments of Tokay grapes continue from the American River district. Fruit drying is nearly completed. Citrus fruits are well advanced and promise good crops. The absence of rain is causing some anxiety among stockmen and wheat growers. Range feed is poor, but stock are healthy and in good condition. Fall plowing and dry seeding are in progress. The apple crop will be large and of good quality.

Coast and Bay Sections.

Clear weather, with warm days and cool nights, prevailed during the past week. Light frosts occurred in some sections, but caused no damage. In Humboldt county the showers of last week started the grass and put the land in good condition for plowing. Farm work is backward in other counties owing to the lack of rain. Apples are of excellent quality and the crop is large. Grape picking is finished in the small vineyards, but continues in the larger ones. Zinfandel bunches have many dried berries on them and the yield will be short; other varieties are good. Apple drying continues. Walnuts are being gathered. The bean harvest is nearly completed. The bean crop in the vicinity of San Luis Obispo is large and the beans are of good quality. Dry feed is becoming scarce in the southern counties and stock are not doing well. Plowing is progressing in the northern counties.

San Joaquin Valley.

Clear and pleasant weather prevailed during the past week. High north winds prevailed on the 8th and 9th in the northern portion of the valley, but caused no damage. The first crop of raisins is being hauled to the packing houses as fast as it can be handled, and large shipments are being forwarded to Eastern markets. The crop is fair and the quality is good. The second crop of raisins is ready for the sweat boxes. Alfalfa threshing continues; the yield and quality are good. Hay is being shipped freely to San Francisco and Oakland, and large shipments of potatoes are being made to southern California, Arizona and Texas. Dry feed is good and stock are healthy and in good condition. Dry plowing and seeding have commenced. Hay baling continues. Olives and citrus fruits promise large crops.

Southern California.

Clear and warm weather prevailed the first part of the week, and cloudy and cooler weather the latter part. Fruit drying, raisin making and bean harvesting are progressing rapidly. Citrus fruits are in excellent condition and promise large crops. Irrigation continues, with a good supply of water. The walnut crop is generally of good quality, but is about two weeks later than last year. The apple, pear and quince crops are much larger than last year. Late apples and pears are being gathered, and shipments are very satisfactory. The honey crop is larger than that of last season and the quality is excellent. A large crop of beans is being harvested.

Eureka Summary.—The weather the past week was generally favorable. Grass is making slow growth. More rain is needed. Apples and pears are being marketed in large quantities. Fall plowing is progressing.

Los Angeles Summary.—Farm work is generally at a standstill awaiting rain. Threshing is about finished. Bean threshing continues; will be finished in about two weeks unless rain comes; the yield is heavy and the quality good.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Oct. 18, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	T	1.76	4.36	3.20	62	42
Red Bluff	.00	.18	8.46	1.71	86	42
Sacramento	.00	.02	5.54	1.06	83	38
San Francisco	.00	T	7.46	1.18	76	48
San Jose	.00	.00	.....	.....	88	38
Fresno	.00	T	4.99	.78	90	42
Independence	.00	.24	.45	.47	78	36
San Luis Obispo	.00	.03	4.60	1.36	78	38
Los Angeles	.00	T	1 14	.69	84	48
San Diego	.00	.66	.17	.37	70	58
Yuma	00	.54	81	.85	92	54

THE POULTRY YARD.

Poultry Pointers.

To the Editor:—Farmers and their wives, throughout the United States, are annually paying increased attention to poultry raising. Wonderful progress has of late been made in this industry in very many of the States east of the Rockies and there is an onward movement among the farmers of California. But this advancement here is not a tithe of what it should be. We need more enthusiasm, more love for the business and a determination to "get all out of it that there is in it," as one has said.

Better Fowls.—With a majority of farmers the matter of poultry raising is a side issue. Frequently the good housewife has entire charge of the flock. But, as a rule, too little attention is paid to details, chief of which are the keeping of fowls bred for many years along certain lines, either for size of body or for laying qualities. This is the foundation which, if not well laid, will prevent the superstructure from attaining the noble proportions it should.

Chicago is the center of an immense poultry business, drawing supplies from many of the northwestern States. The manager of one of the large packing houses in that rapidly growing city lately said: "The poultry business has grown tenfold during the last few years, if our trade is any indication. I feel positive that the census figures, large as they are, are still too small. I predict that within a few years the farmer who does not have standard bred or, at least, well bred stock will almost have disappeared."

When will the majority of farmers in this State awake to the fact that they are standing in their own light in not raising a better class of fowls? If pure breeds cannot be obtained, well graded fowls can be raised instead of the nondescripts one so often sees. Then, when improving the quality of the flock, the number of fowls kept might well be greatly added to. There is money in the poultry business and many a farmer might just as well raise at least 400 or 500 as the few score he at present possesses.

Let it be understood that no class of stock on the farm responds more quickly, more largely, to kind treatment than fowls. They need to be well housed, but not pampered. They will do best when liberally fed. The quiet, contented, happy flock will give the greatest returns.

Incubation.—Brother farmer, do you not think the time has arrived when you should invest in a good incubator? The use of one of approved pattern will save you and your good wife many steps, much extra care and hard labor. Give the matter your serious consideration. Note what others are doing along this line and assure yourself that what others accomplish in the matter of successful artificial raising of chickens you can do, if you have a modicum of the knack of doing things with which many of your friends are blessed.

You will need, in conjunction with the incubator, one or more brooders of a pattern tried and found successful. You will need a good brooder house and the necessary appliances to keep the chickens in good shape. You will find that the outlay, seemingly large though it may be to the novice, will pay large returns, though at first there may be some regrettable mistakes.

Purpose With Poultry.—An experienced poultryman, in writing to an Eastern periodical, voices sentiments which should be of use to every farmer who keeps poultry, and to all others who are at all interested in this pleasant, profitable avocation:

"The chief object of the poultry raiser, who is raising poultry for dollars and cents, is to learn the safest and most economical ways of doing it. He has little time to experiment, though he may have a strong inclination to test some matters that do not seem satisfactory. I have had as little time to devote to these matters as anybody, but I have learned that it is possible to investigate and test many things as a side line without interfering with duties which must be attended to. And by following this idea I have tested a great many things, and often learned that I was not employing the best methods—that I was not obtaining results I was led to expect would be the natural sequence of the work I was doing. Then, having learned these things for myself, I was able to remedy them and get much better results and to make more money and to save more. A hoary, old, time honored and eternally lauded method may not be the best by a long shot. In fact, it may be a losing proposition—and the way to find it out is to properly test it. The practical poultry raiser does not want any fancy frills, juvenile theories nor dream work in his business. His bread and butter depends upon his profits, and if he is astray he wants to know it. If there is a way of making another dollar or saving one he wants to know it."

There is as little luck in poultry raising as in any other business and the man who trusts to luck for profitable returns from hens will, in the majority of cases, reap disappointment. A little less of this article, a more earnest endeavor to raise the standard of farm poultry and to treat the fowls in a fair and square way will materially add to the size of the pocketbook of the farmer, or of his wife's, which is often one and the same thing.

Good luck attends good management, and vice versa. Good management means a fund of common sense, considerable experience and an endeavor to carefully look after the details of the business and, as far as practicable, to stop all leaks.

A. Warren Robinson.

Napa, Cal., Oct. 9, 1905.

The Ferret.

To the Editor:—The ferret is the most valuable friend of the farmer and poultryman and ought to become more generally known in California. It is simply invaluable for exterminating rats, rabbits, squirrels, gophers, etc. Ferrets are bred in large numbers in the Eastern States, where they are in great demand for all of the above named purposes. To give some idea of the great demand there is for them I will quote an extract from a letter which I received a short time ago from an Eastern firm of ferret breeders. They say: "There has been an almost unprecedented demand for ferrets during the past year. Notwithstanding the fact that we have increased our capacity and facilities from time to time and have kept several hundred extra breeders each season, we find ourselves still unable to cope with the rapidly increasing demand and have been compelled to refuse hundreds of orders late in the season. Last winter our stock of 10,000 ferrets was sold before the season was half over. We have 1000 yearling females which are most of them raising a second litter. We can supply 200 of these in August and the rest we can ship as soon as they raise their litters, etc."

From the above it will be seen that the demand exceeds the supply considerably.

About Ferrets.—As there are a great many people who have never seen a ferret a brief description of them will not be out of place. The ferret has been raised in confinement for several years. They were brought to this country over twenty-five years ago. They resemble a mink or weasel, having a long slim body, a small head and pointed nose. It is their nature to hunt and kill. When they are allowed to run in a hole where rats are they will not leave it until every rat has been killed or driven out of their burrows or hiding places, and it is a remarkable fact that no rats will return to the burrows which a ferret has run through, nor will they come anywhere near where ferrets are kept.

There are two varieties: The English, which are white and have pink eyes, and the Fitch, which are brown with dark eyes. There is no difference in the two varieties as far as breeding and working is concerned—only a matter of fancy as to color. They are very hardy and breed well in any climate. The breeding season commences about the first of March and ends in September. A female ferret will usually raise two litters in a year. An average litter is eight or nine, but they sometimes have as many as fifteen. They carry their young six weeks, which are born with their eyes closed, opening when they are six weeks old.

Ferrets are very tame, and when handled carefully they soon become as playful as a kitten. You can carry them in your pocket and they will lie there quite contented. They are used for cleaning vessels, warehouses, cellars, elevators, barns, haystacks or any place infested by rats, and they will thoroughly clean them out. They are also used for hunting rabbits and for exterminating gophers, squirrels, prairie dogs, etc. I shall be glad to give in future articles in this journal full instructions for the breeding and management of ferrets, and I firmly believe we shall have a great demand for them in California when their usefulness becomes more generally known.

San Francisco. W. Styan.

SHEEP AND WOOL.

How Lamb and Mexican Peas Enrich a Valley.

One of our readers told us about a year ago that he proposed to try in the Sacramento valley the growth of the Mexican pea, which is doing so much to enrich the soil in a Colorado valley. We hope he may soon report, for certainly if we can find a legume which can be worked into the farming programme of the Sacramento valley to take the place of the usual bare summer fallow, it will be a great gain. To stimulate interest and experiment in this line, we transfer from the Breeders' Gazette an almost thrilling account of what a legume is doing in Colorado.

The Situation.—In the San Luis valley exclusive grain growing had produced its inevitable result—soil depletion. Confidence in the productive resources of the valley was on the wane. Nature's store of nitrogen was exhausted. The fields yielded scantily. Dissatisfaction was rife. Pessimism was growing. A cloud of gloom hung over the sunny acres. Desertion of the land was decided upon by many of the discouraged owners.

Among those who had addressed themselves to the work of rescuing the valley from impending ruin was F. Sylvester, who has lived in it for fifteen years. He did not appear magically as the hero of the hour, but his experiments with Mexican peas had given him an answer to the annoying riddle. Unprofitable yields of wheat had spurred his inventive faculty, and he accordingly made a practical test of peas as a soil-improving crop. The peas supplied the deficient element of plant food—nitrogen—and the wheat crop which followed demonstrated the value of Mr. Sylvester's method. But this did not solve the problem, except in part. In fact, it raised a new question. The peas bettered the soil—that was indisputable and highly important—but the use of the land was supposedly lost for a year, and an enormous quantity of forage or hay was grown, which in a country practically without live stock could not be advantageously utilized. Mr. Sylvester stacked tons of the nutritious hay and fed it to sheep and lambs, and found this a profitable way to use it; but, as the peas grew luxuriantly, only a few acres could be thus managed. Moreover, as only a few of the farmers grew commercial meat, the use of peas for feeding purposes was exceedingly limited. Invention was still a necessity. A plan whereby all the forage could be used with profit as a feed and the fertilizing value of the crop secured was universally sought. To evolve it was Mr. Sylvester's ambition. His first attempt was a success, although an accident. It unlocked the wealth of the San Luis valley and incubated a great industry. It so happened that a small band of lambs was allowed to pasture in a pea field about the middle of November. They seemed to be growing nicely when examined several weeks subsequently, and, as it was not convenient to change them to new quarters, the lambs remained in the pea field until early spring, when they were found to be in excellent condition for market.

Mr. Sylvester's previous experience with pea hay had proved to him its merits as a sheep and lamb feed. It was in 1900 that about 8000 lambs were fattened exclusively on peas in fields, being marketed from the middle of January to about the same time in March. Excellent gains were made and the pea-fed lambs won popularity among killers. There was but little labor involved in feeding, and the cost of gains was almost insignificant. Add to these considerations the fact that the peas had augmented the nitrogen of the soil many fold through the agency of their bacteria and been returned to the fields in the form of manure, and it is obvious that the Sylvester experiment was a success of the first rank. And so it has come to pass that the agricultural salvation of the San Luis valley grew out of an accidental experiment.

The Result.—Fattening lambs on Mexican peas has wrought pecuniary wonders in the valley. It has made financially comfortable dozens of farmers who formerly were desperately indigent. By its aid many of the pioneer settlers have amassed snug fortunes. This growing industry has effected a beneficent revolution in the erstwhile decadent agriculture of the valley. It has checked soil robbery, introduced an expanding animal husbandry, restored the land to astonishing productivity, builded towns, broken the record price for fat lambs at leading live stock marts and planted the banner of a prosperous, broadening civilization in one of the most picturesque, healthful and delightful retreats the red man ever knew. We doubt whether the recent agricultural progress of this home of the pea-fed lamb industry has a parallel in history. Nothing approaching it is of record.

How It Is Done.—Here is the gist of an interview with one of the small feeders in the valley. It is a representative sample of the information secured during our four days' visit:

"How many lambs did you feed?"

"About 3200."

"What did they cost?"

"We got them laid in here for $3.75 per cwt."

"What was their average weight?"

"About fifty-seven pounds. They were improved Mexicans—a Shropshire-Merino cross."

"How were they handled from start to finish?"

"We turned them into the peas November 25, running as near as we could 1600 lambs on a quarter—160 acres—of peas. We aim to fatten ten lambs on an acre. A herder, who was paid $45 per month, had charge of the 1600 lambs—we had two herders, one for each lot of sheep. He lived in a tent pitched in one corner of the quarter and looked after the sheep. At night they were put in a corral. Water was supplied by an artesian well. At first some precaution is necessary. The lambs should not be allowed to stuff themselves. They must be gradually privileged to eat all they can hold. When we turned in the sheep the peas were at a high point of nutritive value. The frost had nipped them considerably. The vines were still growing, or had just been checked by the frost, but the foliage and peas of earlier growth were cured. The peas were sown with oats. The ripe oats and forage with the peas make a fine combination ration for growing good meat. The lambs grew splendidly. We sold them February 18, when their average weight was seventy-four pounds, show-

ing a gain of seventeen pounds per lamb in eighty-five days. The shrinkage was light. Peas make firm meat that holds up well."

"What did the lambs net you?,"

"They brought $7.25 per cwt. in Kansas City and netted us $2.30 per head, or more than $7000. Thousands of lambs from this valley netted the feeders better than $2.50 per head last spring. None made less than $2 per head net. Between 165,000 and 185,000 were fattened in the valley. About fifty farmers were engaged in the business."

Our informant stated further that he fattened seventy-five hogs on peas after the lambs had been marketed. The sheep leave a lot of feed on the ground which hogs will clean up to advantage. Many feeders claim that their peas last year made them from $15 to $18 per acre net. Probably the general average in the valley would be close to $15 per acre.

Growing the Peas.—Peas are sown from March to May at the rate of thirty to forty pounds of seed per acre. The seed costs $2 per 100 pounds. It is sown with an 8-hoe or 16-hoe drill in rows about 12 to 16 inches apart. Only a small percentage of the land is plowed, the common practice being to drill the peas in stubble, following a crop of wheat, oats or barley. If plowed, the cost per acre is about $1.25. When the peas are seeded the work is finished. No cultivation is given. Sub-irrigation is practiced. One man can irrigate five or six quarter sections.

Last season about 175,000 lambs were fattened in the valley by fifty feeders. They were turned in from 30 to 100 days, made an average gain of about thirteen pounds and netted the growers better than $2 per head. About 20,000 acres of peas were grown. Valley farmers cleaned up close to $325,000 in less than four months.

It should be remembered that last year was exceptional in many respects, so far as lamb feeding was concerned. A more favorable twelvemonth has probably never been experienced by American sheepmen. Figures of record-breaking years should be used cautiously by those inclined to "get rich quick." The basis for safe calculations for future business is not to be taken from record figures.

The Outlook.—Confidence in the lamb-feeding industry is deep-rooted. Valley growers believe they can make money when feeders elsewhere lose heavily. They are not to be scared out by high prices for feeders, but purchases will be made with extreme caution. It looks like most of the sheep will cost right at $4.50 or better delivered. As wool is 7 to 8 cents a pound higher than last season, the present price of feeding lambs is not materially higher than a year ago. This is a reassuring element in the situation. High wool will be depended on to offset low mutton. Many growers confidently expect as good prices next spring for pea-fed lambs as they secured the past season; but all agree they will make money even if the market is $1 lower. The truth is, considering the cheapness of gains on peas, valley feeders can make fair interest on their investments if the price next spring drops lower than $6.

Indications are that more than 300,000 lambs will be fed in the valley this season. The area in peas will probably exceed 50,000 acres, and the prospect is the best in the history of the industry. The peas are podding well and "look better than we ever have seen them at this time of the year," according to an old-timer. Several quarter-sections of peas have been sold at $5 to $7 per acre.

FORESTRY.

Trees of the Sierra Nevada.

Mr. Frank Femmons, who has a lovely home and fine orchard near Ahwahnee, Madera county, is not only a skilled fruit grower, but a most earnest nature lover and expert on local forest trees and forestry problems. Of the trees, he has written descriptively and appreciatively in the California Cultivator, and his comments will be valuable to many in our parish:

The Mountain Trees.—Between the Merced river on the north and the Kern on the south, and covering in a continuous belt the mountain sections of Mariposa, Madera, Fresno and Tulare counties, is one of the finest forests of pine, fir and other timber trees in the West, if not in the world. A forest of similar tree growth and species extends from north to south through the entire length of the State, but nowhere else does it reach such grand development of the different species. The redwoods (Sequoia sempervirens) of our northern coast counties and the firs of the Puget sound country of Washington may challenge the admiration of the world, or the eye of the lumberman, but for diversity of useful species, the size and length of their growth, and their beautiful grandeur as a mountain forest, they have no equal, and are becoming year by year more and more the admiration of the thousands from all over the world who visit the Yosemite and other portions of our mountain scenery.

Pine, fir and oak—each of several species—with sequoia (gigantea) and cedar form the larger tree growth, and blooming shrubs at different altitudes, or many of them intermingled over a wide range, give a wonderful variety that is pleasing and harmonious, and to one who loves the woods gives a never-ending pleasure by their varied forms and groupings. Some of us who have spent a considerable part of life in every day association with their many and ever-changing beauties find their charm the more pleasing as the years go by. There is something in our nature that feels at home in the woods—a feeling as towards some older brother binds us to some beautiful monarch of the forest. "The groves were God's first temples," and the towering spires of some forest-covered mountain peak brings to the heart the crowning inspiration from the architecture of nature.

Kinds of Trees.—But I began to say something, in my own way, of the different forest trees. It is easy to think of this tree as a pine, or of that as an oak. Certain peculiarities of form, growth or leaf connect them with some particular class or family. We need not mistake an oak for a pine or a fir for an alder, but most families of trees are divided into many different species, all closely related, as if originally from the same stock. In the United States we have about seventy species of the oak (quercus) family and about forty of the pine. Each species of a family has many characteristics common to the others, and some found in no others. When a group of trees resemble each other in their constant characteristics, we think of them as belonging to the same species. Local conditions of soil and climate often cause a difference that is sometimes confusing, and when we observe and remember the fact that every individual tree has its own characteristics—an individuality of its own, no two of them alike—the confusion in names we often see would seem to be explained, but some of the mistakes are misleading. Quite recently I saw the "poison oak" (Rhus diversiloba) classed among the oaks of California, and often our foothill or gray-leafed pine has been confused with the contorta, the shore scrub pine of our northwest coast, and I have also seen it referred to as the coulter pine, which is found only in the higher ranges near the desert in the southern part of the State. No doubt some dendrologist will pick over the mistakes of this.

Nearly all the forest growth, both tree and shrub, is evergreen. One of the first pleasing surprises every newcomer meets in California is this evergreen character of its tree growth. It is expected in the pines, but to see it in the broad leaves of the manzanita, the laurel and many of our oaks gives a sensation that is hard to realize at first.

On the line of the Yosemite & Raymond stage road can be seen nearly all the different species found in this part of the State, and the rich profusion and constantly changing character of their forms and associations, seen as the road climbs higher or winds along the streams or around some mountain side, present a charm and fascination that give a new sensation of delight with every turn. During the spring months of April, May and June our mountain forest is in its greatest beauty.

Soon after leaving the treeless plains of the San Joaquin valley the oaks attract attention. At first a few are scattered here and there among the lower hills, but they become more and more numerous as we climb higher. We have seven different species of oak in this part, two of which are evergreen and one that drops a portion of its leaves in the fall or during the winter, and four that are deciduous.

White Oak (Quercus Lobata).—This is our largest and one of the finest of the family. It is found on low or moist land and will be frequently seen from the low foothills to nearly 4000 feet altitude. In many places it assumes a noble proportion and aspect—body often 4 to 6 feet in diameter, with a heavy, wide-spreading crown and arching limbs. Some of them have a pendulous growth—long, slender, vine-like spurs from the larger limbs trailing almost or quite to the ground. The one that gave the name to Big Oak Flat, in Tuolumne county, was over 11 feet in diameter, an still lies there, a fallen monument to the sacrilegious greed for gold. Its prostrate, weather-beaten trunk seems yet to express a sorrowing appeal for protection. The few dollars of gold obtained at some time from among its torn up and cut away roots were but a poor return to the world for the life of that tree. As one stands beside it now and lays a loving hand against its still rugged form, with but the decaying stubs of its noble old branches, its mute voice seems to reach the heart—a requiem to the desolation around it.

The dark green, deeply-lobed leaves and the heavier bark give this species a strong contrast with the blue oak.

Blue Oak (Douglasii).—This grows over about the same habitat, but always on the high, dryer ridges. This tree often assumes some very picturesque forms. One with a rounded, well-balanced top is an exception, but once in a while you will see one that seems to have made a special effort to grow beautiful in shape, and it is certainly a beautiful tree. In many specimens a single limb will grow out in some horizontal direction and would seem determined to have an idea of its own, and get away from the rest of the tree, or perhaps the direction of growth is abruptly turned. I know of no trees that will assume so many odd and grotesque forms. The leaves are small, with a general oval shape, and their bluish shade of green gives a distinctive characteristic to the tree. It was named for David Douglas, a Scotch botanist, who visited California and the Pacific coast in 1826, and first discovered the sugar pine on the upper Columbia river, in Oregon, besides many other of our Western coast trees. Had he penetrated into the then unknown Sierra Nevadas from his landing at Monterey, what a wonderful storehouse of Nature's choicest tree productions would have met his wandering and lonely steps.

Black Live Oak (O. Wislizeni).—This species occurs and grows over nearly the same ground as the two preceding, but not so abundant in the lower hills as at a little higher elevation. Usually it assumes a rough, scraggy, scrub growth, but on deep, rich soil attains something of a tree form, and it is sometimes 15 or 20 inches in diameter and has a rough, open top. The leaves are small, oval in shape, and most of them are armed on the edge with stiff, irregular spines, and are glossy, dark green, although not so dark as its near relative, the coast live oak (Q. agrifola), but in habit of growth very similar.

Chestnut Oak (Q. Densiflora).—A few solitary specimens of this species are found here and there in a narrow belt between 2000 and 3000 feet. This is our semi-evergreen oak, but the younger trees usually carry most of their leaves through the year. The leaves are somewhat similar in shape to the chestnut, and the burr produces a very few acorns, some none at all. The trees are so few and scattered that if not pointed out would scarcely attract attention. The finest I know of grows by the side of the road in front of the Crooks residence, near Gertrude.

Black Oak (Q. Californica).—This was generally known until recently as Q. Kelloggii. Why the name needed any change I do not know, but as it is found in nearly all the wooded sections of our State, and at almost all altitudes where trees will grow, and as no one mistakes it in any situation, the new name would seem to be typical. You will find it in the rich little valleys of the upper foothills, along the streams and on the hillsides throughout the timber belt, battling with the storms and the snows on the crags and rocks above, but reaches its best development along the lower edge of the pine belt. It was this tree that produced the acorns that formed one of the principal foods of the Indians.

Scrub Oak (Q. Dumosa).—I don't feel quite sure of the identity of this. It is confined to a very narrow belt at about 3000 feet. It is a small-growing shrub, but sometimes gets to a height of 20 feet if on good soil and fires do not reach it. The bark is thin and on the larger growth resembles that on the young white oak of the Eastern States. The leaves are deeply lobed and deciduous, and the little shrubs produce abundantly the most beautiful acorn of any of our oaks. They drop from their shallow cups as soon as ripe, and, as they are quite sweet, are soon gathered up by the squirrels and other animals.

Golden Cup Oak (O. Chrysolepis).—Although this has been reserved to the last in the list of oaks found in this part of the State, I think it is the most interesting and beautiful tree we have. It is so varied in its form and character that each individual tree has an expression of its own. The body is usually short and frequently divides near the ground into two or more stems, but uniting to form a wide-spreading crown, and always—whether growing in an upright or drooping form—seems to be seeking some new ideal of beauty that is found in no other tree. Many of them when not injured by fires or other changing conditions reach almost perfection in many forms of symmetry, and, however beautiful we think any of them, we soon learn to expect some new beauty in some one we meet.

This oak is found in almost all situations over a wide range of our mountain slopes above 2000 feet, or about the same as the black oak, but the growing habit of the tree is so much more pleasing, and seems in all places to fit into such a perfect harmony with the surroundings, that our forest hills would lose much of their charm without it.

THE APIARY.

Notes on Experience in San Diego County.

Mr. A. J. Burns of San Diego county gives the American Bee Journal an account of his experience last year which contains many interesting points:

I saw the statement recently that the honey crop of southern California this year would be only about one-third. In this section that estimate will hold good, not because we did not have the honey, but because we did not have the bees to gather it.

Last year's drouth was the most disastrous to bees of any season for many years. Last spring it was my business to see every resident in a territory that would average 20 miles square, in which there were many bee keepers. I found only two bee keepers whose losses were as low as 20%. If I remember correctly, the next lowest was about 40%. Most of the losses were around 75%, and some 90% and 95%. Those bee keepers having less than ten or twelve colonies and who allowed their bees to provide for themselves, I did not count where all were lost.

Like a good many others, I did not begin to feed

soon enough; but another time, under like circumstances, I think I could feed more effectively, although I saved nineteen out of about seventy colonies—all healthy, but not strong.

Our season opened about six weeks late, and while I tried to get a few days at home each week to look after the bees, when I did all I could to control swarming, I lost fifteen or sixteen of the first swarms, which at that stage was a serious loss.

The bees did not get strong enough to do effective storing until the black sage—from which we get our nicest and best honey—was well past its best. About June 1, however, they were well over their swarming fever and I began to have bushels of bees. The way they scooped in the honey would make a man's eyes stick out. I could not always keep ahead of them in filling frames with foundation. This was kept up until about the last of July on white sage, wild buckwheat, sumac and, towards the last, tarweed. This last does not make very nice honey, but it feeds the bees.

I have now 100 colonies all in fine condition, except one, through an accident. I think they have plenty of honey to carry them through until next year. Some of the later colonies I may have to even up a little, but there is plenty of honey elsewhere to do it. Besides, I have put away over 200 good, fat frames of honey to use wherever they will do me the most good. If there is any honey in the fields next year, I hope to have the bees to gather it.

The bees are still gathering a little honey from the very last of wild buckwheat, a species of goldenrod and sugar gum. I wish I had thousands of these trees where I have one now. I think they must equal your basswood, not in quality, perhaps, but in quantity. The bees keep up a perfect roar on them, and, if you are close to the house, you would have to be an uncommonly sound sleeper if their noise did not arouse you before it was fairly light. Near the trees the air is filled with the odor from the blossoms, and the white blossoms are fairly black with bees and the bloom keeps up for weeks.

Three years ago this fall the greater part of the pasture upon which I depend (several square miles, 75% black sage, 20% white sage and sumac) was burned off as bare as a street, since when we have had only one really good growing year, so that the black sage, a naturally slow grower, has been more than usually slow. I have just discovered, however, that, if given favorable conditions, it grows quite rapidly. Black sage must be several years old before it blooms much. An abundance of rain next winter would give me considerable pasture in this burned district.

HORTICULTURE.

Fertilizers of Olive Trees.

To the Editor:—Of all the fruits grown in California perhaps the olive has been planted upon the most unfavorable soils for profitable production. This has been the result of an early idea, and one which is as yet, to some extent, prevalent, that the olive tree would do well upon soils much poorer than other trees would stand. As a result of this mistake in the earlier history of fruit plantings, there are now large numbers of olive plantations which have failed to produce profitable returns, and, in many cases, have been dug up and replaced by other fruits. It is altogether probable that careful attention given to the matter of feeding the tree would have rendered it possible to save many of these orchards and to have secured fairly profitable returns, and perhaps more profitable returns than can be secured from the same soils planted to other fruits. Still there are many such orchards remaining in the State and there is an increasing demand for information as to the plant food required by this crop. This is becoming more and more apparent on account of the continued failing of these orchards not only to produce crops, but also from the debilitated condition of the trees themselves.

While it is true that the olive tree is not a gross feeder as measured by the crop, yet it demands a sufficient amount of plant food as do all other trees and in this respect differs from them only in degree. The oil, which is the most valuable part of the fruit, is not formed from the ingredients in the soil, but for it to be developed to its maximum extent there is required a healthy development of the tree and the other parts of the fruit. The vegetative functions of the tree must be healthy and active, and this can only be brought about by the presence of abundance of readily available potash, nitrogen and phosphoric acid.

A full grown olive orchard may be considered as removing from the soil the following ingredients per acre for a crop of 2200 pounds, of fruit leaves 4400 pounds and wood 11,000 pounds:

	Fruit.	Leaves	Wood.
Potash	18.81	58 05	24 46
Phosphoric Acid	2 59	20.08	14.86
Nitrogen	13.86	69.90	117.69

It will be seen that in the fruit alone there is the heaviest draught of potash, and on the soils on which so many of these orchards are planted it is this element that is liable to be lacking. While in some soils of California potash may be sufficiently present in these particular cases this leement is one which should be given the most careful attention.

To increase the nitrogen content and improve the moisture conditions, the practice of green manuring with a leguminous crop is to be highly recommended in these orchards. For this the vetch, lupines or the Canadian field pea can be used successfully, and the mineral ingredients alone supplied for direct fertilization. Further, the pomace, after the extraction of the oil, makes a valuable fertilizing material, for the addition of organic matter to the soil. The phosphoric acid may be applied either in the shape of basic slag or bone superphosphate, and the potash either in the form of sulphate or muriate of potash.

A general formula for use on these orchards may well be made up about as follows:

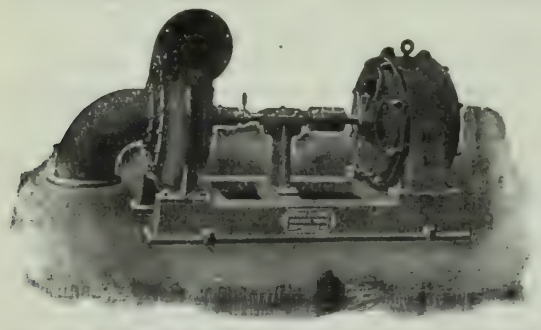
	Pounds.
Nitrate of soda	300
Superphosphate	500
Muriate of potash	125

The above quantity to be applied to one acre of ground. This fertilizer may be applied broadcast in the fall and thoroughly worked into the soil. If it be in the northern part of the State it may be well to apply only a portion of the nitrate in the fall and to add the balance in the spring application to avoid any possibility of loss from leaching during the winter months. In the southern part of the State there is not great danger. As to the other ingredients, there is practically no danger of loss as the mineral elements become fixed in the soil in such a way as to prevent leaching, but so they will still be available for the use of the plant.

With these orchards planted in such untoward places there is no other way in which their fruiting can be maintained to a profitable point except by heavy dressings of commercial fertilizers. Unless the farmer is prepared to feed these trees liberally they might as well be destroyed, as there is little hope of their being more than a constant load to carry. Under the conditions under which they are growing, it is impossible to expect any profitable return.

George Wright.

[This is interesting and important. It should be stated, however, that what many unthrifty olive trees need is pruning and irrigation. Our greatest mistake has been in thinking that an olive tree did not need water like other trees.—Ed.]



Jackson Patent Horizontal Centrifugal Pump Direct Connected to Electric Motor.

PUMPS!

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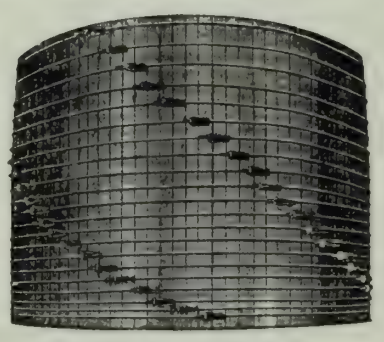
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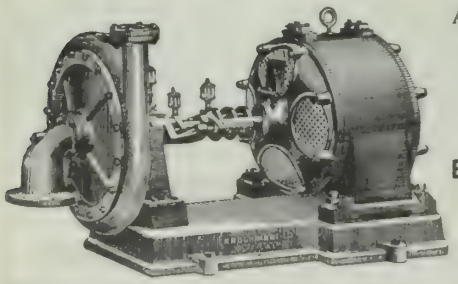
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Costs no more, is easier to set up and is far superior to the old style flat-hoop tanks for any purpose. They need no water channels or perishable devices for keeping the staves wet. They are always tight. The hoops are of steel and tighten with a monkey wrench. They have an upset thread end 6 inches long. Each hoop has from 2 to 6 lugs or shoes, according to size of tank. Send for price list of stock sizes.

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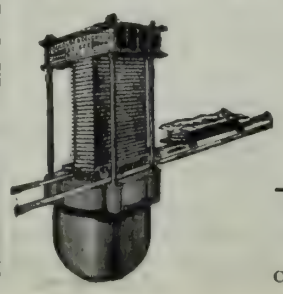
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Works: PERTH AMBOY, N. J.
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The only positive eradicator of the SAN JOSE SCALE,
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Wine and Oil Machinery
A SPECIALTY.



Presses for All Purposes.
Complete Plants Fitted Out.

TOULOUSE & DELORIEUX,
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CATALOGUE UPON APPLICATION.

GREENBANK POW'D CAUSTIC SODA and PURE POTASH. BEST PRUNE AND OLIVE DIP.
T. W. JACKSON, 123 California St., San Francisco.

Agricultural Review.

Butte.

OLIVE CROP PURCHASED. — Oroville special to Sacramento Bee, Oct. 14: Representatives of the Ehmann Olive Co. of Oroville and the American Olive Co. of Los Angeles have purchased nearly the entire olive crop of this part of the county. Two hundred tons have already been secured, the purchasers paying $40 a ton on the tree. All the olives are to be picked and taken from the tree by December 7th. Picking will begin on the 23d of this month.

CHICO CORN.—Chico Enterprise, Oct. 13: D. Madigan owns a farm 3 miles west of Chico on which he raised this season 18 acres of corn. The land selected for the crop was plowed twice before planting and the seed put in carefully, six acres of white and twelve acres of yellow corn. In preparing the soil and in cultivation Mr. Madigan followed the Government bulletin on corn raising, as he had never grown a corn crop, and wanted to make a fair test. He cultivated the corn during the season four times, each way. The white corn has given up a yield of 80 bushels to the acre (5600 pounds in the ear, or 4480 pounds of shelled corn). The yellow corn yielded 50 bushels to the acre and was much more subject to worms than the white. The six acres of white shells out almost as much as the twelve acres of yellow, with practically the same care and both varieties of seed were considered good.

Fresno.

HONEY.—Selma special to Fresno Republican, Oct. 13: The honey producers have had a fine season, and like all other producers in this section report much better conditions than those enjoyed in other localities. Whereas the honey crop was light in most localities of the valley this year, in this section some phenomenal yields were recorded. The total output of honey shipped from this point will amount to about 4000 cases, each case containing 120 pounds.

Napa.

NEW POULTRY FARM.—Napa Register, Oct. 13: E. H. Winship and C. F. Grant of Napa have formed a copartnership, and under the firm name of C. F. Grant & Co. have purchased from T. N. Mount the Meredith place of eighty acres, 5 miles north of Napa, and will establish thereon the Mammoth Poultry Farm. The old buildings which are now on the property will be torn down, and the work of constructing a residence, brooders and incubator houses, and other structures planned and equipped for the care of poultry will be commenced. Two chicken houses, 400 feet in length and 24 feet in width, will be built. Down the side of each building will run a tramway, and on one side of the tramway and next to the nests will be troughs for the soft feed. Above the nests will be slides, inclined toward the tramway, which will enable the workmen to thoroughly and conveniently clean the houses. Above these slides will be the roosts. At the end of each building will be provided a cook house for the preparation of feed, and adjoining it a granary. An incubator house with a capacity of 5000 eggs will be built. From the brooding house will be runs and these runs will lead into large corrals, enclosed with wire netting. It is estimated that over 6 miles of wire will be used in this manner on the farm. A complete water system will be established, the water required to be pumped with a gasoline engine. The C. F. Grant Co. has already purchased 2000 hens, and hopes to be ready for business within a few months.

VINTAGE OVER.—St. Helena Star, Oct. 13: The vintage of 1905 is about over. The crop of grapes has been even lighter than was expected, but the quality of the wine made has never been surpassed. A. Forni, in conversation with a Star representative, says, that in his thirty-one years' residence in St. Helena he has never seen such fine dry wines made as those of the vintage now drawing to a close. Mr. Forni has now finished wine making, only one customer having any grapes yet to haul. B. Bruck says he has harvested fully 280 tons on the Moffit place, and that the quality of wine made is exceptionally good. Anker Miller, superintendent of Greystone, says that the vintage has been very successful, though the crop has been light. He expects to receive fully 200 tons more at Greystone. The reports from other vineyardists and winemakers are about the same. The grapes on Howell mountain and in Chiles valley are quite late, but the crops will be in by the middle of next week.

Sacramento.

WILL PASTURE GOLD LAND.—Dispatch to Sacramento Union, Oct. 7: The Folsom Development Company has hundreds of acres of land, acquired some time ago for dredging purposes. It will be several years before dredgers can be built and put in operation on this land, so the company has decided to go into the cattle raising business, using the land for ranges upon which the herds will graze. The company will go into the business on quite an extensive scale. In the past the land has been rented to stock raisers, but they have been notified that the company will reserve the lands for its own use.

VINE DISEASE IS CURABLE.—Sacramento Union, Oct. 12: John McNie, whose grape vines are suffering from what he thought was the Anaheim disease, has ascertained that the trouble is of a different character. He submitted specimens to John Isaac, of the State Horticultural Bureau, who declared the pest to be phytoptus vitis. Mr. Isaac said that the only thing to do is to treat the vines with sulphur. This was the course adopted by Mr. McNie and it proved successful. He used 660 pounds of powdered sulphur on three acres, applying the sulphur five times. Mr. Isaac says that when vines are found to be suffering in this way sulphur should be applied liberally and that the affected leaves and brush should be burned. He made an examination under the microscope and found that in this case sulphur had done the work of destruction most successfully. Mr. McNie declares that this discovery of the efficacy of the sulphur remedy is worth hundreds of thousands of dollars to vineyardists of this State. He finds that his vines this year are in a healthy condition, while last season was most disastrous, the grapes rotting on the vines.

San Joaquin.

SHEEP DIP. — Stockton Independent, Oct. 7: A plant for sheep dipping has been installed by the Bellevue ranch, which for thoroughness of treatment and economy of operation is an advance on former methods. The plant is on a hillside. At the top is a furnace of cement with vats for boiling the dip, which consists of three parts sulphur and two parts quick lime, with sufficient water to give the desired strength. The dip is delivered into a cement trench, with the sheep corrals at one end and the drying corrals at the other. The sheep are passed into the trench at one end, care being taken to submerge each animal. Each sheep has to swim the length of the trench filled with dip. This saturates the wool with the sulphur solution. At the farther end of the trench a leadway guides the animals into corrals with cement floors sloping back into the trench, thus saving the dripping solution. The sheep are held until the wool has drained the excess dip, and are then passed on to a holding corral. A gravity drain empties the dip trench when the work is done. By means of this very simple and efficient arrangement 5000 head of sheep can be treated in one day by five men.

CAN GROW TOBACCO.—Lodi special to the Sacramento Bee, Oct. 7: John Lay, a rancher of northern San Joaquin, has demonstrated that tobacco can be grown here with success. Fine samples of the "weed" were exhibited here this morning, and those who claim to know state that it can be grown here with profit. The sample exhibited is 5 feet high, and has leaves that measure 15x25 inches. The plant is a seedling. Mr. Lay also brought in some fine cured Havana leaves grown on his place. So far, tobacco culture has been a success to the extent of the plants producing four crops per year, of leaves handsome in color and as smooth and as fine as silk.

MANUFACTURE OF BUHACH IN LODI. —Independent, Oct. 14: Furry Brothers have under cultivation seven acres of pyrethrum. Their land is 4 miles south of Lodi, and the crop is 300 pounds per acre for the first year and about 650 pounds to the acre when in full bearing. To successfully grow the plant it has to be irrigated in the same manner as alfalfa, and does not come into full bearing before the third year. It produces a white flower and is a mid-season crop, being harvested in April and May. Major Peters originally introduced the plant into this county, and from it manufactured what he called buhach. This word was coined by Major Peters for a yellow powder that is fatal to insects which imbibe it. The experiments in the raising of the crop were first made in Stanislaus county, and later introduced in San Joaquin county by Furry Brothers, who were employed by Major Peters. The outcome of the product yields clear about $100 to the acre.

San Luis Obispo.

BEAN CROP.—San Luis Obispo Tribune, Oct. 13: It is estimated by a good authority that in the Santa Maria valley, including Guadalupe, Nipomo, Oso Flaco, Santa Maria and Garey to the head of the valley, about 150,000 sacks of beans will be harvested this season. Small whites sell for $2.75 per cental, pinks $2. The weather is ideal for harvesting and hundreds of hands are engaged in that work.

Shasta.

FRUIT UNDER COVER.—Anderson letter to Searchlight, Oct. 10: The Anderson fruit district is now pretty well cleaned up, the dried fruit is about all under cover and the orchardists are ready for a rain. Two or three days' rain would be welcomed by everyone. It would start the fall plowing and greatly improve the roads. The prune crop was very disappointing as to quantity. The quality was good and the price all right, but combined they come far from compensating the growers for the short crop. An example is furnished by the Shanahan orchard of nearly 600 acres. With a good crop 300 tons of prunes should have been harvested. The yield was but twenty-five tons. At the Sanitary packing house twenty people are employed, receiving, handling, processing, packing and shipping prunes, dried peaches, pears and others fruits. There is of course a marked difference in the quantity of prunes being handled. A great deal of green fruit was shipped out of the district this year to the canneries of Santa Clara county and other about-the-bay packing centers. Probably the bulk of the Happy Valley product was shipped up or down the rail by individual growers or peddled throughout the county. With the exception of prunes, the fruit growers have had a good year and are well satisfied with the outlook. The short crop of prunes was not due to frost, as might be supposed, but to a heavy rain at the most inopportune time, washing out the pollen and destroying the fertility of the bud.

Tehama.

FARMERS DESIRE IRRIGATING DAM.—Red Bluff dispatch to Sacramento Union, Oct. 13: The farmers and property owners of Red Bluff district, in this county, will meet in the court house in Red Bluff on Wednesday, Oct. 18th, for the purpose of forming a water users' association. Red Bank canyon affords an excellent site for a restraining dam, and the farmers are anxious that the Government become interested enough in the project to do the construction work. This site has recently been visited by Government engineers, who have been favorably impressed with its location and natural advantages for a dam site.

STOCKMEN TO BECOME HOP RAISERS. —Red Bluff dispatch to Call, Oct. 13: The rich country around the town of Tehama is soon to become an important hop growing center. Gerber & Conant, who have a large ranch near Tehama and who have been making the breeding of fine Herefords a specialty, have disposed of their cattle business and will turn their alfalfa fields into hop yards. They have 400 acres of land in alfalfa, and this will be plowed up this winter and 200 acres planted to hops. Next winter the other 200 acres will be planted to hop roots.

WOOL SOLD FOR GOOD PRICES.—Corning Observer, Oct. 12: The woolgrowers of Corning and vicinity realized in the neighborhood of $60,000 for their fall wool sold in the local market the past week. Earlier in the season it was thought the prices would be close to 20 cents and growers held for that figure until a short time ago. When the market opened, 15 to 16 cents was offered, according to the quality, and was readily accepted. Nearly 1200 bales were sold here, and a slightly larger number in Red Bluff, the total for the county approximating 2500 bales. A close estimate places Tehama county far in the lead of any other county in the State in the number of sheep and the output of wool.

Tulare.

CATTLE SHIPMENT.—Porterville Enterprise, Oct. 13: In talking to F. A. Doty, who owns the cattle corral and weighing apparatus near the depot, about the shipments of cattle from here during the year, he said he had just figured up the number of cattle and hogs, which had gone out of here since Oct. 1, 1904. Besides what may have been shipped from here without going over his scale, from Oct. 1, 1904, to Jan. 1, 1905, 207 head of cattle and 2404 hogs had been shipped, and from Jan. 1, 1905, to Oct. 1, 1906, 1554 head of cattle and 2941 hogs had been shipped, making a total from Oct. 1, 1904 to Oct. 1, 1905 of 5345 hogs and 3015 head of cattle.

Yuba.

CANNERY TO CLOSE.—Marysville dispatch to Sacramento Union, Oct. 13: The Sutter Preserving Co. will close its cannery in Yuba City next week, after a long run, having been in operation steadily for more than three months. The output has been more than 45,000 cases of fruits and tomatoes.

H. S. WHITE MACHINERY CO., Office and Salesroom, 130 Beale St; Works and Yards, 9th and Bryant Sts. We have a brand new lot of pipe complete, ready for immediate delivery.
¼-inch pipe, $3.25 per hundred feet; new.
⅜-inch pipe, $3.95 per hundred feet; new.
1-inch pipe, $5.70 per hundred feet; new.
1¼-inch pipe, $7.60 per hundred feet; new.
1½-inch pipe, $8.90 per hundred feet; new.
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2½-inch screw pipe (2d-hd.), ready for use, 10c
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Send by check, money order or coin by Wells-Fargo Express Co. with order. H. S. WHITE MACHINERY CO., Office 130 Beale St. Reference: Any bank, banker or publication.

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CHEAPER, STRONGER AND MORE DURABLE
than riveted iron or steel pipe. Requires no expert to lay and can be easily taken up and relaid, as it is absolutely indestructible. All pipe sold under an absolute guarantee. We contract for complete irrigation systems. Illustrated catalogue sent on application.
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GOMBAULT'S
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A Safe, Speedy, and Positive Cure
The safest, Best BLISTER ever used. Takes the place of all liniaments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.
THE LAWRENCE-WILLIAMS CO., Cleveland, O.

FRANCIS SMITH & CO., Manufacturers of
SHEET IRON & STEEL PIPE
FOR TOWN WATER WORKS,
Hydraulic, Irrigation and Power Plants, Well Pipe, Etc., All Sizes.
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WATER AND OIL TANKS—ALL SIZES. Iron cut, punched and formed, for making pipe on ground where required. All kinds of Tools supplied for making pipe.
Estimates given when required. Are prepared forcoating all sizes of Pipes with Asphaltum.

The Home Circle.

The Chambered Nautilus.

This is the ship of pearl, which, poets feign,
Sails the unshadowed main,
The venturous bark that flings
On the sweet summer wind its purpled wings
In gulfs enchanted, where the siren sings,
And coral reefs lie bare,
Where the cold sea-maids rise to sun their streaming hair.

Its webs of living gauze no more unfurl;
Wrecked is the ship of pearl!
And every chambered cell,
Where its dim, dreaming life was wont to dwell,
As the frail tenant shaped his growing shell,
Before thee lies revealed,
Its irised ceiling rent, its sunless crypt unsealed.

Year after year beheld the silent toil
That spreads his lustrous coil;
Still, as the spiral grew,
He left the past year's dwelling for the new,
Stole with soft step its shining archway through,
Built up its idle door,
Stretched in his last-found home, and knew the old no more.

Thanks for the heavenly message brought by thee,
Child of the wandering sea,
Cast from her lap, forlorn!
From thy dead lips a clearer note is born
Than ever Triton blew from wreathed horn!
While on mine ear it rings,
Through the deep caves of thought I hear a voice that sings:

Build thee more stately mansions, O, my soul,
As the swift seasons roll!
Leave thy low-vaulted past!
Let each new temple, nobler than the last,
Shut thee from heaven with a dome more vast,
Till thou at length are free,
Leaving thine outgrown shell by life's unresting sea.

—Oliver Wendell Holmes.

A Clean Bill.

In the drawing-room of a house in Mayfair, Violet Raymond, a pretty, thoughtful-looking girl of some twenty-two years was sitting anxiously awaiting the arrival of an expected visitor. Presently there was a tap at the door and a servant entered.

"Capt. Walter Grenville, miss."

The girl rose as a tall, bronzed man of about thirty-five came into the room.

"I hope you will forgive me for asking you to call, Captain Grenville," she said with a grave smile. "I heard you were back in London, and I felt that under the circumstances you would not think it a liberty. My aunt, Lady Shenley, has retired with a bad headache, else she would also be here to receive you."

"I am only too glad to be of any service," he responded as he sat down. "In fact, if you had not written, I should have ventured to call."

She sat down opposite him. The only previous occasion on which they had met had been at Liverpool three years ago, when he had set sail to take up his command in West Africa. With him had been her brother, young Dick Raymond, then starting his military career as a subaltern, and she and her aunt had journeyed down to see the last of him.

He remembered every detail of the short time he had spent in her company; now as he met her again, after the terrible thing that had happened, his heart went out to her in pity.

"You know what I want to know," she said quickly. "I only saw your official dispatch published in the papers."

"God knows it was hard enough to write," he broke out.

"It was kind of you to say what you did—'A gallant and promising officer,'" she exclaimed. "But tell me all, please," she finished, pleadingly.

"We were in Sierra Leone when the rising in the Badakuta district broke out," he began, speaking in a low disjointed voice. "I was immediately dispatched with an expedition to quell it; your brother came along with me, the only other white officer who could be spared. We got up near to Acandro and encamped over night on the south bank of the river. In the morning we prepared to cross; the natives, we understood, were ambushed about two miles away on the other side." He paused. "Suddenly, as we began to cross, we were attacked by them in the rear. They were in full force; we were surprised, and the fighting was desperate. Numbers of our men fell, and it looked as if we were in a tight corner, when Sherston and his relief party came up on the opposite bank, just in time. We dropped flat on our faces and they fired over our heads—the situation was saved."

"And Dick?" she inquired tremulously.

Grenville shifted his foot uneasily.

"The last time I saw him was some minutes before Sherston came up," he said, speaking with difficulty. "He threw up his arms suddenly and staggered backward on the bank."

"Into the river?" she whispered. He nodded. There was a moment's silence, then the girl rose to her feet. The tears were glistening in her eyes, but she was smiling.

"If it had to be, thank God he died as he did—fighting at his post!" she cried. "It's something for me to be proud of."

He looked at her steadily.

"Yes, it's good to think that," he said slowly.

She stood before him with shining eyes for the moment full of enthusiasm. Then it died away, and she sank down and covered her face with her hands.

A little later he left with a promise to come to luncheon one day with Lady Shenley. He went straight to the rooms which his man had engaged for him in Duke street, Piccadilly. Sinking into an armchair, he buried himself in thought.

"Yes, I did right," he said at last, with a sigh. About a week afterward he received an invitation to luncheon at the house in Mayfair, and he went with a curious feeling of eager anticipation. Violet Raymond treated him in the light of an old friend, and he found the couple of hours spent in her society more enjoyable than any thing he had yet experienced. Presently when he rose to depart, Lady Shenley, who was about to take her afternoon drive, offered to put him down in Piccadilly, and he accepted gratefully.

He sat opposite Violet and Lady Shenley in the open victoria, replying politely to the latter's gay and irresponsible chatter. He formed the impression that, while Lady Shenley was kind in her way to Violet, the two had not much in common, and in this he was correct. The girl was built of far more reliable stuff than her light-hearted, pleasure-loving aunt.

The carriage turned into Bond street and rolled down toward Piccadilly at a good pace. As it swept round the corner there was a sharp cry of warning from the pavement. Walter Grenville sprang up and saw a child running across the road a few yards ahead. She lost her footing on the greasy wood pavement and fell sprawling in the roadway right in front of the horses. The coachman pulled frantically at his reins, but they were going at full speed. There was another yell from the bystanders, then a sudden silence. The carriage swayed to and fro; another second and the horses would have trampled on the child had not a figure, darting madly from the curb, pulled her from under the horses' hoofs and thrown her out of harm's way. The next moment his foot slipped on the slimy surface, and, falling, the pole of the carriage struck him and he was trampled on.

The carriage came to a standstill with a jerk and Grenville leaped out. Already a little crowd had gathered round the prostrate figure; he was carried to the pavement. Grenville pushed his way through and leaned over the man. He was apparently a tramp; his clothes were in rags, his face was thin and gaunt, with some weeks' growth of straggling black beard on his chin. From a wound in his forehead the blood was streaming, and he was moaning. As Grenville dropped on one knee beside him he slowly opened his eyes. The officer gave a sudden start, then peered eagerly into the man's face. He rose to his feet quickly.

"My rooms are just opposite—No. 33B Duke street," he said quickly to the policeman who had just appeared. "Take him there, and I will get a doctor at once."

He hurried back to the carriage where Violet was waiting, pale and trembling.

"It's rather a bad accident," he said swiftly. "I'm having him taken to my rooms. You go back now; I will let you know later how things are."

"A terrible misfortune!" exclaimed Lady Shenley piteously. "Every one is looking at us. Tell John, home at once, Violet."

"Can't I help?" said the latter anxiously to Grenville. He shook his head.

"I will let you know," he repeated, then gave directions to the coachman; the carriage turned and moved swiftly away.

He approached the knot of people again. Already a shutter had been obtained, and the wounded man laid upon it. They raised him carefully and carried him across the road, the crowd of bystanders following curiously. Grenville led the way to the house, and opened the door with a latchkey.

"Scrivener," he called out to his servant, who appeared in the hall, "there has been an accident; fetch the nearest doctor—quick!"

Scrivener ran off without his hat. The man, now unconscious, was brought in, carried slowly upstairs and deposited on a bed. A few seconds afterwards a doctor arrived, and Grenville was busily employed in giving him assistance. Then, retiring to a corner of the room he waited until the doctor had finished his examination. At last he rose from his task. He turned and walked over to Grenville. "Nothing can save him," he said in a low voice. "He has received internal injuries which make it impossible for him to live more than a day at the most. He will regain consciousness again, but if we were to attempt to move him to a hospital he would die on the way."

"No, no; he must stop here," said Grenville between his teeth.

The doctor shrugged his shoulders.

"You will not be troubled long," he said, picking up his hat and gloves. "You can do absolutely nothing beyond following the directions I have given you; they will but make the few hours he has to live more comfortable. Goodby; I will look in again in the evening."

Grenville accompanied the doctor to the door, then went back to the room. At the entrance he was met by Scrivener, who had been in and was just coming out. There was a scared look on his face.

"Good God, sir, it's — —!" he whispered.

Grenville nodded.

"I know," he said, with clenched teeth. "Mind, not a word of this to any one."

He went into the room again and sat by the bedside gazing at the white pinched face. Suddenly the eyes of the man opened and centered themselves on his face.

"Grenville!" he murmured feverishly. "Of course—who should it be? It's 'Forward!' in a few minutes now! Oh, my head!" he finished with a moan.

Scrivener brought in the medicine that the doctor had sent. They gave him a dose, and presently he dropped off into a heavy sleep, Grenville watching by his bedside. Later the doctor came in again.

"He may last through the night, but not much longer," he said after another examination. "I have ordered a nurse to come around."

The next morning found the patient still alive, but the doctor gave him but a few hours. About eleven o'clock he had a spell of consciousness, and Grenville sat beside him talking to him. Then he grew half delirious again.

The door opened and Scrivener appeared; he beckoned Grenville aside.

"Lady Shenley and Miss Raymond have called, sir," he whispered. "Lady Shenley is in her carriage, but the young lady insisted on seeing you so I have shown her into your sitting-room."

"Stop here," said Grenville, with a white face, then strode to the door and opened it. He stepped out and shut it quickly, for the man in his delirium was talking loudly.

He crossed to the other side of the landing and opened the door of his sitting-room. As he did so the man's voice suddenly raised itself to a shout.

"Grenville," he cried.

He stepped hastily into the room and shut the door. The girl had risen from her seat and stood before him, her face white and terror stricken.

"That voice!" she cried. "It was Dick's!"

She was gazing into his eyes fearfully. Grenville clenched his hands; the veins stood out on his forehead.

"It was Dick's!" she repeated. "Oh, for the love of heaven tell me!"

"Yes—Dick's," he said hoarsely. "If you are strong enough, come with me. But it's almost death," he added, looking at her in anguish. She nerved herself with an effort.

"I am strong enough," she said between her shut lips. Without a word he led her across the landing and opened the door. Scrivener started when he saw her, then slipped out of the room noiselessly. The girl approached and gazed at the bandaged head. Then she dropped on her knees beside the bed and took his hands between hers. She pressed it to her lips.

"Dick! Dick!" she said with a sob.

The wild delirious look seemed to pass from his eyes. With a painful effort he raised his head.

"My Vi!" he groaned, the tears starting to his eyes. "Oh, my God! that I should have brought this upon you!" He paused to recover his strength.

"Yes, it's a lie that Grenville told in his dispatch. I didn't die like a man at my post; I bolted like a coward!" He paused again. "I was in charge of the right wing when the surprise rush came. Instead of holding their ground, my men—West Indians, curse 'em—broke and ran for their lives. To this day I don't know the reason. I simply seemed to grow gray with fear. I lost my nerve, lost my manhood. God knows how I did it—I fled with them! Grenville saw me do it!" he finished, panting for breath.

"Don't, Dick dear; that's enough!" implored the girl.

"You must hear me through," he went on weakly. "Half a mile farther I drew up. For the first time I realized what I had done. If I had had my revolver I should have shot myself, but I had dropped that. I could have died with shame. I knew I could not go back—never look a brave man in the face again!" He paused and drew in a torturous breath. "Somehow or other I managed to get down the coast to Waru—I had a little money with me. I got a passage in a trading brig to Liverpool, and landed there with a few shillings in my pocket—dead to the world, for I found out what Grenville had done for me—bless him! Since then it has been a living hell—tramping, now and then a job, starving. But I deserved it all! A man without honor has no right to live, and now, now—" His head fell back on the pillow and a deathly gray pallor came to his face. He closed his eyes. They stood watching him, not daring to move. He opened his eyes once again and wetted his lips.

"But the child—I've given my life; it wasn't much, but it's better than nothing!" he gasped.

"Yes, yes, Dick; your bill's clean!" broke in Grenville. "Your sister knows it; I know it."

With a tremendous effort young Raymond raised himself on his elbow.

"Ah, it's good to have a clean—" The last word choked in his throat as he fell back. With a cry the girl bent forward and peered in his face, then she rose, and her tear-laden eyes met Grenville's gaze.

"You need not be ashamed of him," he said gently.

* * * * * *

One evening, some few months later, the two were together again. He had been telling her something which had

brought a delicate flush to her cheek. Then she asked him a question.

"Why did I do it?" He paused. "Do you remember that night at Liverpool when I first met you? I saw what your brother was to you—that he was everything in your life. I fell in love with you that night! Then when, months later, that terrible thing happened, I realized in a flash what it would mean to you if I let the truth get known, so I thought for hours, then wrote the dispatch as you read it." There was a long pause. Then she raised her eyes to his.

"You did it because you loved me?" she whispered. He bent down and, taking her in his arms, kissed her on the lips.

"Because I loved you; because somehow I felt it was not his real self that had prompted him to act as he did—a mad impulse, but not his nature. And you and I know that this was right, that he wiped the stain out," he said.

"Yes, we know," she answered, with a soft sigh of content.—Gerald Dayle.

What Food Economy Means.

Economy in food does not imply prohibition. It is neither vegetarianism, fruitarianism, nutarianism, or any kind of "ism." It means simply temperance in diet, with the application of available scientific knowledge; the use of reason and intelligence, combined with a due appreciation of the dignity of the body and the necessity of meeting the daily wants without imperiling that high degree of efficiency which helps to render man physically and mentally supreme. Practically, this implies the avoidance of the large quantities of proteid food so commonly made use of by civilized man, with the substitution of a dietary characterized by a predominance of the lighter vegetable foods. In this respect it leans somewhat toward vegetarianism. The heavier meats of our daily diet can be advantageously replaced in part by lighter articles of diet less rich in proteid and with more frequent addition of green vegetables, fruits, and corresponding articles of food less prone to yield objectionable decomposition products.—Century.

Hints to Housekeepers.

An authority on woolen goods says that the proper way to dry them is to hang them on the line without wringing out any of the water. Dried in this way shrinkage is said to be very little.

Stewed cucumbers are not nearly as well known as they should be. The flavor is very delicate, and often puzzles the uninitiated to know exactly what vegetable is being eaten. The cucumbers are peeled and quartered and the pieces cut crosswise three times. Stew in salted water and cook until tender. Drain and serve in a thin, white sauce.

Velvet that has become crushed may be restored by placing the linen side of the dress over a basin of hot water.

It is a fashion in a certain tea room in New York to serve small pitchers of melted sugar with iced tea. The sugar is melted down with a very little boiling water. This is better than serving powdered sugar, which is likely to be part marble dust or cornstarch.

The little candles used on birthday cakes are seldom hard enough to stand upright until they have burned a satisfactory time. It is said that the candles harden wonderfully if laid on ice for a few hours before being used.

The white sailor hat left over from last summer may be in perfect condition except for a yellowish tinge, which, of course, marks it for an old hat. It is said that such hats may be whitened perfectly if rubbed hard with a paste made of sulphur and lemon juice. When quite dry brush off every trace of the sulphur with a stiff brush.

To remove ink spots from furniture wipe them with oxalic acid, let it stand for a few minutes, then rub well with a cloth wet with warm water.

Old putty on window frames may be removed by passing a red-hot poker slowly over it.

Jim's Sweetheart.

Mother put on her Sunday best,
Her lilac wedding gown,
And white straw bonnet neatly tied
With strings of faded brown;
We woke before the roosters crowed
And started in the dew,
To see the boat race, for our Jim
Was captain of the crew.

You see, six olive branches came
To bless our honest love—
Five slumber in the churchyard green
With little stones above;
But one was left in mother's arms—
Stern death was kind to him,
The youngest of our tiny flock,
The sturdy baby, Jim.

He took it in his curly head
To want a college course;
I parted with the pasture lot
And sold the sorrel horse;
We sent him every dollar saved,
And made a seedy pair
In garments that had long outlived
Their days of useful wear.

We did not want to shame our boy
And so kept out of sight,
Behind a row of waving flags
And fluttering kerchiefs white.
But when the slender sculls swept by
The rival crews abreast,
We both forgot our shabby clothes
And shouted with the rest.

The surging throng closed up in front,
We could not see our son,
But soon a mighty cheer went up
And told us Jim had won.
The crowd took up the college yell
And sent it to the skies,
And college colors everywhere
Shook out their brilliant dyes

He stepped ashore, looked up and saw
His mother's wrinkled face,
And hurried to her through the ranks
Of broadcloth, silk and lace.
He never gave a single glance
Toward the pretty girls,
But kissed her on the withered lips,
And kissed her silver curls.

His sunburnt face was glorified
With proud and happy smiles;
He did not mind because her hat
Was years behind the styles,
But led her out before his friends,
A figure quaint and grim,
In stiff, old-fashioned lilac silk—
"My sweetheart, boys," said Jim.

—Minna Irving in Leslie's Weekly.

Pleasantries.

Many curious reasons are given for absence from school. Here is one: "Dear Sir—Samuel cannot come to school this afternoon, as he glued his head to the dresser, and we have not been able to separate him yet."

"I want to complain of the flour you sent me the other day," said Mrs. Newliwed, severely. The grocer assumed an anxious expression, and inquired what was the matter with it. "It was tough," replied the housekeeper, accusingly. "My husband simply could not eat the biscuits I made with it."

Several years ago a Turner, Me., physician was called to prescribe for a young woman. He ordered the mother to apply a plaster to the patient's chest. The following day he called to see if his advice had been followed, and, finding the patient about the house, was complimenting his good judgment, when the old lady informed him that, as there was no chest in the house, she had pasted the plaster on a bandbox.

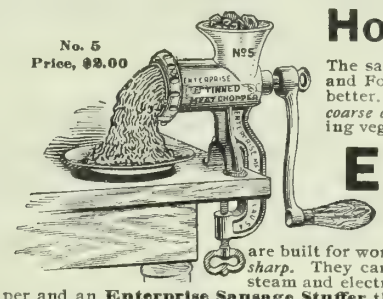


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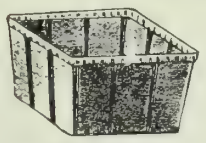
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References: David Starr Jordan or any Stanford Professor.
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The Markets.

San Francisco Produce Report.

San Francisco, Oct. 18, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 86½@ 85⅞	87¼@ 87
Thursday	86½@ 85⅞	87⅛@ 87
Friday	86⅜@ 85⅛	87⅛@ 86¾
Saturday	86⅛@ 85⅛	87 @ 86½
Monday	86 @ 85¼	87 @ 86⅜
Tuesday	86¾@ 85⅞	87½@ 86⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	45½@44½	44⅜@43¾
Thursday	45⅛@44¾	44⅜@44
Friday	44⅞@44⅜	44⅛@44¼
Saturday	44⅛@44¼	43⅞@43½
Monday	44⅛@44	43⅞@43⅜
Tuesday	44⅜@44¼	44⅜@43⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 39¼@1 38⅞	$ ——@——
Thursday	1 39⅛@1 38½	——@——
Friday	1 38⅛@1 37	——@——
Saturday	1 37⅞@1 37½	——@——
Monday	1 38½@1 37⅜	——@——
Tuesday	1 39⅛@1 38¾	——@——

Wheat.

The wheat market continues to gain strength, and this is particularly noticable abroad, Germany being a big buyer of wheat in anticipation of the increase of 25½ cents per bushel in the duty on wheat which is to take effect March 1st. The consequence is that while Russia is sending out a tremendous quantity of wheat, Germany and Continental Europe are getting the most of it. The amount of wheat bound for the United Kingdom is less than 8,000,000 bushels, or only 12 days' supply. Stocks there are quite small, so the trade generally look for improving prices. Locally the market has had a weak spell since the last review, the prices of December option having dropped down to $1.37½. It has advanced again, however, and at this writing is up to last week's figures, viz., $1.39 per cental. Receipts from the north should be heavy for some time to come, but the trade anticipate no pressure of supplies. Northern advices state that the heavy rains continue, and that grain men say that considerable wheat is injured. In some places there is grain yet unthreshed, owing to an inability to get machines earlier in the season, while in other places sacked grain still remains in the field. While the amount of unsaved grain, as compared with the entire crop of the country, is small, the aggregate will run into thousands of acres.

California Milling	$1 40 @1 45
Cal. No. 1 shipping	1 33¾@1 42½
Northern Club	1 38¾@1 41¼
Northern Bluestem	1 40 @1 45

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange. December, 1905, wheat ranged from $1.39¼@1.38¾.

Flour.

Arrivals of northern wheat have been heavy, and most millers are now using Oregon and Washington wheat, which they blend with a small proportion of California wheat. Only a few of the mills in the State are still grinding on straight California wheat. The recent reduction in the price of flour by local millers has resulted in a large inquiry from foreign points. At present Asiatic demand is mending rapidly, Japan being in the market for large quantities of wheat and flour, owing to a partial rice crop failure.

Superfine, lower grades	$3 05 @3 30
Superfine, good to choice	3 30 @3 55
Country grades, extras	4 05 @4 30
Choice and extra choice	4 30 @4 80
Fancy brands, jobbing	4 80 @5 00
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

The market is growing stronger and the highest price seen this season was touched during the past week, which was $1.13¾ for December option and $1.13¾ for nice grades of choice bright feed. Receipts continue less than requirements, and, if they do not improve shortly, it will be a runaway market, as there is a tremendous line of shorts out with concentrated holdings on the long side. Yesterday's receipts of barley were only 4554 centals, which is only a little below the average daily receipts of the current week.

Feed, No. 1 good to choice spot	$1 10 @1 12½
Feed, fair to good	1 07½@1 08¾
Chevalier, No. 1 to choice	1 20 @1 25
Chevalier, common to fair	1 15 @1 20

Oats.

The local market is steady in sympathy with the advance in the price of barley. The advance in the price of blacks and reds is for seed varieties. An advice from Oregon says that the oat pool formed by the farmers of the Macleay district was sold on Oct. 6th. The pool contained in the neighborhood of 75,000 or 80,000 bushels of oats and the price paid was 33c per bushel. The net price realized by the farmers, after paying all warehouse charges, was 32c per bushel. About forty farmers were interested in the pool.

White oats	$1 42½@1 45
Black oats	1 30 @1 80
Red, choice new	1 30 @1 60
Red, fair	1 10 @1 27½

Corn

Yellow corn is very scarce at the moment and frequent sales are reported at the top quotations. Advices from Chicago indicate a strong cash demand for corn, with stocks of old corn pretty well cleaned up. Cables from Liverpool reflect a firm feeling in corn. Some of the new crop has already been received at Peoria, Ill.

Large White, good to choice	$1 42½@1 47½
Large Yellow	1 37½@1 40
Small Yellow	1 55 @1 65

Rye.

Trading in rye has been rather light. There has been little that could be termed choice offering and such would doubtless bring an advance on quotations. Yesterday's receipts of rye were only 446 centals and this was mostly from Utah and is of such poor quality that it brought only the minimum quotation of $1.45.

Good to choice	$1 45 @1 50

Buckwheat.

Stocks now available are all in the hands of millers and there is no movement with the exception of an occasional sale for seed purposes. Prices are nominal. A choice lot of seed would perhaps bring as high as $2.75 per cental.

Good to choice	—— @——

Beans

Receipts of the new crop continue heavy, the arrivals during the current week having averaged about 12,000 sacks daily. On the river banks the crop has been pretty well cleaned up. Pinks and whites have been among the heaviest arrivals and are in consequence somewhat weaker. Bayos are steady and blackeyes are somewhat firmer owing to the fact that a considerable portion of the crop to arrive on these two varieties was contracted for some time ago. Limas are steadier again at primary points and no doubt growers who have not already sold will hold for better prices.

Small White, good to choice	$2 75 @3 15
Small White, damaged	1 50 @2 75
Large White	2 00 @2 25
Large White, damaged	75 @1 50
Pinks	2 00 @2 15
Pinks, damaged	2 00 @2 15
Bayos, good to choice	2 90 @3 10
Bayos, damaged	—— @——
Red Kidneys	3 00 @3 50
Reds	3 00 @3 25
Limas, good to choice	3 25 @3 40
Black-eye Beans	4 25 @4 35

Dried Peas.

Heavy arrivals of Humboldt peas are depressing the market somewhat and the appearing quotations are considered full ones. Stocks remaining in first hands are now considered rather light for so early in the season and it is probable that any considerable buying demand would have the effect of creating an immediate advance in prices.

Green Peas, California	$2 00 @2 15
Niles	1 85 @2 00

Hops.

As predicted in former reports, there is no betterment in the condition of the market and but very little trading has been done. This is due to the fact that buyers can not find a market for their goods at the prices at which growers are holding. The consequence is a stagnation of trade, especially in the State of California. In the State of Oregon some buying has been done at prices ranging from 10@12c, the latter figure being for strictly choice goods. Such purchases have been made to cover deliveries and not on a speculative basis, as the indications warrant even lower prices. Crops throughout the world are now estimated as follows: England, 400,000 cwt. more than last year; the Continent, 300,000 cwt. more than last year; New York State, 55,000 bales; California, 67,000 bales; Oregon, 110,000 bales; Washington, 48,000 bales. The carryover from last year is estimated at 18,000 bales, making the total available in this country 298,000 bales. The average home consumption is annually 200,000 bales, leaving a surplus of 98,000 bales for exportation.

Good to choice 1904 crop, nominal	10 @ 12

Wool.

Locally the market is very quiet. A little business is being done at the country sales at about appearing quotations. There is a good feeling in the local market about good wools; but as that grade includes little of California fall shearing, no business to speak of has been done. The Eastern demand is at present for long wools suitable for worsteds, defective wools such as the California fall clip being almost entirely neglected.

FALL.

Humboldt and Mendocino	17 @20
Northern, free	15 @17
Northern, defective	12 @15
Middle County, free	13 @15
Middle County, defective	10 @13
San Joaquin and Southern, free	10 @14
San Joaquin and Southern, defective	9 @11

SPRING.

Oregon, valley	23 @25
Eastern Oregon	15 @17
Nevada	16 @20

Hay and Straw.

Arrivals of hay by rail have been rather more free this week than last and the total receipts are about 800 tons in excess of those of last week. The demand for choice hay for retail purposes continues with a slight falling off in the demand for medium grades. The range of prices is still very wide owing to the weak demand for the poor quality hay. The lack of rain is causing some uneasiness and may result in a more active demand and higher prices for all grades. Prices at present are unchanged.

Wheat, choice	$14 00 @ 16 50
Wheat, other grades	8 00 @ 13 50
Wheat and Oat	9 00 @ 12 00
Tame Oat, fair to choice	8 00 @ 12 00
Wild Oat	5 00 @ 8 00
Barley	7 00 @ 9 50
Clover	6 00 @ 9 00
Alfalfa	5 50 @ 9 00
Stock hay	5 00 @ 6 50
Compressed	10 00 @ 13 00
Straw, ₱ bale	30 @ 50

Millstuffs.

There continues a lively demand for all kinds of millstuffs and prices generally are being firmly maintained. Bran is 50c per ton higher than at last quotations and middlings is also a shade firmer, though quotably unchanged. Choice lots of rolled barley are easily bringing the advance of $1.50 per ton shown in the quotations.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	23 50 @ 24 00
Middlings	28 00 @ 30 00
Shorts, Oregon	23 00 @ 24 00
Barley, Rolled, choice	24 50 @ 25 50
Cornmeal	32 00 @ 32 50
Cracked Corn	33 00 @ ——
Oilcake Meal	—— @ ——
Cocoanut cake or meal	21 00 @ 22 00

Seeds.

Alfalfa seed is now beginning to come into this market and is being quoted by dealers at 13c to 14c per pound. There is, however, very little demand for it as yet, owing to the fact that there has not been sufficient rain as yet to enable seeding to be begun. Shipments are much lighter than at the same season of last year. Mustard seed is in fair requets and Trieste is somewhat stiffer in price. Prices on other varieties are being maintained, though the demand at present is very light.

Alfalfa	$13 00 @14 00
Flax	3 25 @ 3 50
Mustard, Yellow	3 25 @ 3 50
Mustard, Trieste	4 25 @ 4 50
	Per lb.
Canary	6½@—
Rape	2½@ 3
Hemp	3½@ 4
Timothy	5 @ 5½

Honey.

The honey market continues featureless, except for the obvious disinclination of apiarists to sell at the ruling quotations and the inability of the dealers at the present writing to offer more. Five cents per pound for extracted honey seems to be as high a figure as dealers are able to contract for and even at this figure they are extremely reluctant to buy. Comb honey brings 9c, strictly choice basis, and the transactions at that figure are very limited. Lately, however, there are rumors that growers are beginning to let go of some of their holdings at the figures mentioned.

Extracted, Water White	5 @—
Extracted, White	4½@ 4¾
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	8 @ 9
Amber Comb	6 @ 7

Beeswax.

The market for beeswax remains featureless. Receipts are light, but stocks are entirely sufficient to supply the demand. Appearing quotations are being well maintained.

Good to choice, light ₱ lb	25 @27
Dark	23½@24½

Live Stock and Meats.

The market is stiffer on beef of first quality only. Other grades are ruling steady at quotations. Small veal is a shade firmer, but at quotably unchanged prices. Other meats remain steady but with a slightly improved market.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4½@ 5½
Beef, 2nd quality	3½@ 4
Beef, 3rd quality	3 @ 3½
Mutton—ewes, 8@8½c; wethers	8½@ 9½
Hogs, hard grain, 150 to 250 lbs	5½@—
Hogs, large, hard, over 250 pounds	5½@—
Hogs, small, fat, under 150 lbs	5¾@—
Veal, large, ₱ lb	5 @ 6½
Veal, small, ₱ lb	6½@ 8
Lamb, spring, ₱ lb	9 @10

Hides, Skins and Tallow.

The hide situation continues as heretofore with prices at the same high figures. There is an active demand for hides notwithstanding an inclination on the part of tanners to buy only for absolute needs. High prices seem, however, to have been accepted for the time being and nobody anticipates an immediate slump, though the opinion continues general that the present high values are not justified by the statistical situation.

Bags and Bagging.

The local market is still in good shape and the demand for bean bags continues to be the leading feature. Stocks of these, however, have been nearly exhausted in supplying the demand occasioned by the extremely large crops which are being harvested this year. The Walla Walla prision directors have purchased their next year's supply of jute, paying slightly over 4½c per pound for it. This figure will make the grain bags turned out worth about 6c, or one of the highest prices for Walla Walla bags on record.

Bean Bags	$ 6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼: No. 2	7⅛@7¾
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7⅛@7¾
Wool Sacks, 4-lb	33 @ 34
Wool Sacks, 3½ lb	30 @ 31

Poultry.

Receipts of California poultry have been lighter than during last week and Eastern arrivals of young stock show up poorly. The market has been a trifle more active on fancy stock. Small hens and turkeys are somewhat easier.

Turkeys, choice Young, ₱ lb	$ 20 @ 23
Turkeys, live gobblers, ₱ lb	21 @ 22
Turkeys, live hens ₱ lb	21 @ 22
Hens, California, ₱ dozen	4 00 @ 4 50
Hens, large	6 00 @ 7 00
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	5 50 @ 6 50
Fryers	4 50 @ 5 00
Broilers, large	3 50 @ 4 00
Broilers, small to medium	2 50 @ 3 00
Ducks, old, ₱ dozen	4 00 @ 5 00
Ducks, young, ₱ dozen	4 00 @ 6 00
Geese, ₱ pair	1 75 @ 2 00
Goslings, ₱ pair	2 00 @ 2 50
Pigeons, old, ₱ dozen	1 25 @ ——
Pigeons, young	2 00 @ 2 25

Butter.

Butter prices were up as high as 30c during the current week, but there is a slightly weaker feeling just at present and they have dropped back again to 28c. The general tone is, however, steady on extras at present with a greatly increased demand for creamery first and select dairy stock, which have advanced in price.

Creamery, extras, ₱ lb	25 @28
Creamery, firsts	23 @26
Creamery, seconds	21 @25
Dairy, select	20 @25
Dairy, firsts	20 @—
Dairy, seconds	18 @19
California storage	23 @25
Mixed Store	17 @18

Cheese.

The general tone of the market is steady with a firmer tendency on the part of fancy stock, the same being now held at 13½c. Other grades are being brought into requisition by the advance in the price of fancy stock.

California, fancy flat, new	11½@13¼
California, good to choice	10 @10½
California, fair to good	9½@10
California, "Young Americas"	11½@13½
Eastern, new	15½@18½

Eggs.

The egg market continues to be characterized by the firmness which has prevailed during the past several weeks. Receipts are now beginning to fall off somewhat, so it is extremely improbable that there will be any falling off in prices in the near future. The demand for selected and fancy ranch eggs is active, but off grades are moving slowly.

California, select, large, white and fresh	38 @42
California, select, irregular color & size	28 @30
California, good to choice store	18 @24
Eastern firsts	24 @25
Eastern seconds	19½@20

Potatoes.

The market is weak on the common varieties, but Salinas fancy stock has advanced somewhat owing to the fact that receipts now coming in contain much that is not strictly choice, the local demand for choice stock being now fairly brisk. Stocks of other grades have a tendency to accumulate and appearing quotations will doubtless be shaded somewhat.

Cal. Early Rose, ₱ cental	— @ —
River Burbanks, ₱ cental	60 @ 70
Salinas Burbanks	85 @ 1 25
Chile Garnet, ₱ cental	55 @ 65

Vegetables.

A firmer market is the rule for the current week, with stocks of nearly all varieties well cleaned up and appearing quotations being well maintained. Lima beans have stiffened somewhat in price

and string beans also show an advance. Green corn is scarce and firmer. The onion market is in better shape than it has been for some weeks past owing to a renewal of the demand for export shipment. Australian Browns are now quoted at 95c per cental, choice basis. Green peppers and summer squash are stiffer in price and tomatoes are steady at appearing quotations. The canners are now busy with the last of the tomato crop and it is said that the yield is beginning to fall off rapidly.

Beans, Lima, ₱ lb	—	@	5
Beans, String, ₱ lb	4	@	6
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	—	@	1 50
Egg Plant, ₱ box	50	@	65
Garlic, ₱ lb	—	@	6
Onions, New Yellow Danvers, ₱ ctl	85	@	90
Onions, Australian Brown, ₱ ctl	—	@	95
Peas, Green, ₱ lb	5	@	7
Peppers, Bell, ₱ box	40	@	50
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	—	@	1 25
Tomatoes, ₱ box or crate	40	@	50

Fresh Fruits.

All varieties of deciduous fruits are now showing up in the local fresh fruit market in very limited quantities and peaches, with the exception of some light cold storage stocks, are out of the market entirely. Grapes are still quite abundant and are commanding a higher price. No more Bartlett pears are to be had at any price, and the only variety of plums, the Late Coe's red, are now selling at $1 per crate. Berries of all kinds are in rather limited supply, blackberries being especially scarce and much firmer in price. A few watermelons are still coming into the local market and are bringing the appearing quotations, but the coming week will doubtless see the last of the crop marketed.

Apples, choice to select, ₱ 50-lb bx	1 00	@	1 15
Apples, good to choice, ₱ 50-lb. box	65	@	80
Apples, fair to good, ₱ 40-lb box	40	@	—
Cantaloupes, ₱ box	—	@	65
Figs, ₱ one layer	—	@	75
Figs, ₱ two layer	—	@	80
Grapes, Seedless, ₱ crate	—	@	1 50
Grapes, ₱ small box	—	@	50
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ small box	—	@	—
Pears, Bartlett, choice to select, 40-lb box	—	@	—
Plums, Late Coes Red, ₱ crate	—	@	1 00
Raspberries, ₱ chest	—	@	10 00
Strawberries, Longworth, ₱ chest	—	@	8 00
Strawberries, large var., ₱ chest	—	@	5 00
Strawberries, Santa Clara, ₱ chest	—	@	9 00
Watermelons, ₱ doz	1 50	@	2 50
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

With the exception of prunes, dried fruits now occupy a very strong position and are very firmly held at present prices. Apples are firmer than at last quotations, the ruling price being 7½c for fancy stock. According to statistics, the situation warrants much better prices than those prevailing on prunes. The output of prunes for the entire State is estimated at 60,000,000 pounds, of which 10,000,000 pounds have already been sold for export, leaving 50,000,000 pounds for domestic consumption. The annual consumption of prunes in this country is estimated at 90,000,000 pounds, leaving a shortage of about 40,000,000 pounds. Notwithstanding these estimates, however, the demand up to the present time has been considerably behind that of former years. Some of the smaller dealers are showing considerable anxiety to sell, so appearing quotations can be shaded somewhat.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6½@ 7
Apples, extra choice to fancy, 50-lb boxes	7 @ 7½
Apricots, Royal, good to choice, ₱ lb	6½@ 7
Apricots, Royal, fancy	7½@ 8
Figs, 10-lb box, 1-lb cartons	5½ @6½
Nectarines, White and Stanwick, ₱ lb	7 @ 7½
Nectarines, red, ₱ lb	—@ 6
Peaches, unpeeled, good to choice	7 @ 7½
Peaches, unpeeled, fancy to extra fancy	7½@ 8
Pears, standard, ₱ lb	7 @ 7½
Pears, choice to fancy	8 @10
Plums, Black, pitted	5 @ 6
Plums, Red, pitted	6 @ 7½
Plums, Yellow, pitted	5½@ 7½
Prunes, Silver, good to fancy	5 @ 8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3½
Figs, White, in bulk	2 @ 2½
Figs, Black	2 @ 2½

Raisins.

The appearing quotations are the prices named by the California Raisin Growers' Association October 4. The quotations are higher than for some years past, and are accounted for largely by crop conditions. It is considered safe to say this is the shortest raisin crop in many years. The association controls practically all the desirable seeding capacity of the State, and the trade will have to look to the association for its supply of seeded raisins of standard quality. While it is held to be quite certain that the consumption will be curtailed, taking the year through, it is not believed that the prices will have very much influence upon consumption during the two greatest raisin months, November and December.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40 @——
London Layers, 3-crown, 20-lb box	1 50 @——
Fancy Clusters, 4-crown, 20-lb box	2 00 @——
Dehesas, 20-lb box	2 50 @——
Imperials, 20-lb box	3 00 @——
2-Crown Standard loose Muscatel	5¾@ —c
3-Crown Standard	6 @ —c
4-Crown Standard	6½@ —c
Seedless Thompsons	6½@ —c
Seedless Sultanas	5 @ —c
Fancy, 16-oz. Seeded	8¼@ —c
Choice, 16-oz. Seeded	8 c
Fancy, 12-oz. Seeded	6⅝c
Choice, 12-oz. Seeded	6⅜c

Citrus Fruits.

The advance on oranges was further augmented this week and they are now ruling firmly at appearing quotations. This sudden strengthening of the market at this season of the year has been brought about by the sudden falling off in the supply of deciduous fruits in the fresh fruit market. Navel oranges of the intermediate crop are now selling at $4.50 per box, choice basis, and Valencias are also ruling firmer. Lemons and grape fruit are also a shade firmer, while limes are steady at appearing quotations.

Oranges, Navels, intermediate crop	4 00	@	4 50
Oranges, Valencias, ₱ box	2 50	@	4 50
Lemons, California, fancy, ₱ box	2 50	@	3 25
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ₱ box	2 00	@	3 00
Limes, ₱ box	4 00	@	4 50

Nuts.

Almond prices are dropping rapidly and have already reached a much lower level than that named by the growers' association which fixed them at a figure entirely out of proportion with the yield for this year, the crop being considerably larger than usual. On the other hand the trade looks for firmer prices on walnuts, as the crop was a partial failure in some sections.

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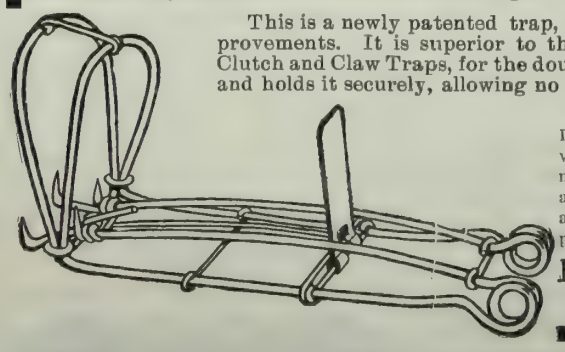
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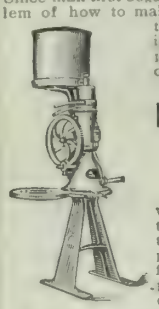
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THE DAIRY.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the Pacific Rural Press by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

King Cairo, Ozro Mitchell, R. F. Guerin, Visalia; Pacific Chief, Ozro Mitchell, R. F. Guerin, Visalia; Whitray, D. O. Mills, R. I. Or, Gilroy.

Creamery Operators' Convention.

The California Creamery Operators' Association will hold their annual convention this year at Modesto on December 8th and 9th. This has just been announced by W. H. Roussell, secretary of the Association, who is busily engaged in perfecting the details for the meeting.

An excellent feature of this year's programme is that there will be no lengthy addresses. It is the desire of those in charge to have a short talk by those designated for the programme, merely as an introduction for a general discussion by all the members present who desire to enter. It is thought that in this way the meeting will be made interesting. While the programme is not complete in all its details, the first number on the programme will be the opening of a discussion by Judge Peter J. Shields of Sacramento on the bringing together of the creamery managers and operators and the patrons, for the purpose of securing educational advantages and the advancement of social relations. This sort of work has received a good start in some of the Eastern States, where they have their pleasant creamery picnics and socials, which tend to establish cordial relations between the parties concerned in the management and support of the creamery.

Prof. Le Roy Anderson of the California Polytechnic School will open the subject of "The Care of Creameries and Skimming Stations." This should bring forth many good ideas from those present at the meeting.

H. J. Faulkner, one of the inspectors for the State Dairy Bureau and a man who has had practical creamery experience, will tell about "Our Work With the Patrons."

The always important subject of the care of milk and cream will be dealt with by Prof. E. W. Major of the University of California.

A. Jensen of the Central Creamery at Ferndale is on the programme for an address on "Butter and Cheesemaking," and in view of Mr. Jensen's long experience in this work, a few words from him will be gladly received.

"Marketing of Dairy Products," by A. B. Evans, completes the programme so far as arranged at the present time. Additions to the programme will be announced later.

There will be the usual butter scoring contest, which, it is expected, will be one of the best of recent years. Three valuable prizes will be offered in the butter class, the first prize probably being a gold watch. For cheese two prizes will be offered, and it is sincerely hoped that the cheesemakers will come forth and make it an interesting contest.

Legends of the Apple.

It has been pointed out that the apple tree has the most glorious history, in spite of the acknowledged might and grandeur of the oak. Symbolic of man's temptation and Venus' love, the apple is the fruit of Solomon, and Hercules, and Ulysses, and the food which ever evades the unhappy Tantalus. The space of this article might profitably be taken up with the lore of the fruit that is most beneficial to man. In the face of our regard for the apple it is odd to read that the angel Azarael holds it beneath the nostrils of the dying. Not to tell the familiar tales of the apple of Discord, and the golden apples of the Hesperides and Atlanta, it may be interesting to recall why the apple became associated with the Theban Hercules, who was known as Melius. It appears that once the Asopus overflowed and prevented the bringing across of sheep to the altar of the strong demi-god. Some suggested that "melon," the word for "sheep," was identical with that for "apples." Thus were sacrificed apples fitted with twigs for legs, and the symbolic sheep became the customary offering.

The goddess Iduna of the Scandinavian myths was guardian of those apples which the gods ate as a precaution against death. Loki, god of strife and spirit of evil, carried off the fruit, and everything went wrong among gods and men until the dwellers in Asgard were able to recover their sorely needed ailment. The Druids paid reverence to the mistletoe that clung to the apple tree and the oak, and on Christmas eve in Devonshire farmers sprinkle with cider the honored tree of Pomona and then dance around the knotted trunk. Sir John Mandeville tells us that the pigmies were nourished by the mere scent of the apples in Pyban. In England girls are known to stick sweetheart-named apple seeds on their foreheads, the seeds that stick the longest indicating the bridegroom; and on New Year's night the Silesian girls place apples underneath their pillows to promote dreams of a husband. Most pathetic of all, the hand of more than one dead child of Silesia clasps an apple, with which it may play in Paradise.—The Chautauquan.



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24 Years' Work—No Repairs		43 Years' Work—75c Repairs	
Hours run	1,200	Hours run	2,150
Pounds separated	1,080,000	Pounds separated	1,935,000
Turns of crank	8,155,760	Turns of crank	5,652,070
Turns of bowl	1,152,000,000	Turns of bowl	1,864,000,000
Oil used	8 quarts	Oil used	5¾ quarts
Time oiling	About 4 min.	Time oiling	About 7 min.
Time adjusting	None	Time adjusting	10 min.
Repairs	None	Repairs	75 cents

After 24 weeks, the balls in the frictionless bearing supporting the bowl showed wear. This was natural, for each had rolled over 32,000 miles. Renewing balls cost only 75 cents and ten minutes adjusting, yet made this Tubular as good as new. All Tubulars are equally durable. Catalogue P-131 tells about them. Write for it today.

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DE LAVAL SEPARATORS
AND OUR LINE OF **DAIRY AND CREAMERY MACHINERY**
are far superior to other like goods. The cost, efficiency and durability considered, are no higher than so-called cheaper grades. Everything on hand for the Dairy and Creamery. Write for Catalogues. Mailed free.
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Does Saving **ONE or TWO MEN** At the Cutter Mean Anything
in ensilage cutting time? **Self Feed** on "Ohio" cutters does that and more, and increases capacity 33⅓%.
"OHIO" Blower Elevators
solve the Blower problem. They successfully elevate ensilage into silos up to any height, as demonstrated by abundant proof in catalogue. **10** and **12** H. P. Engines drive Nos. 13, 16, 18 and 19 Cutters with blowers, and all other sizes "Ohio" Ensilage Cutters. In **capacity** "Ohio" Cutters lead; 10 to 30 tons per hour.
1904 Shredder Blades (patent applied for) are interchangeable with knives, all sizes. They put corn stalks into best condition for feed, running at normal speed.
Our absolute guarantee goes with every machine. Made by
HOOKER & CO., SAN FRANCISCO.
Established 1854.
"Modern Silage Methods" 10 cents, coin or stamps.

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MANUFACTURE
RIVETED WATER PIPE
for Mining, Irrigation, Dredging, Power Plants, and Water Works.
WELL CASING for Water and Oil Wells a Specialty.
AIR PIPE for Mines, Tunnels and Shafts.
TANKS for Oil, Water and Cyanide Plants.

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Experiments With Eucalyptus Posts.

Experiments with eucalyptus timber are being conducted at Ellwood, Santa Barbara county, by Robert W. Ayres, who arrived a week ago from Washington, D. C., direct from the forestry service. The Santa Barbara Press says: Mr. Ayres' first work is to experiment with eucalyptus for use as fence posts. He has secured the benefit of the cooperation of Ellwood Cooper, the State Horticultural Commissioner, who has given him the use of posts from the fine eucalyptus timber on the Cooper place at Ellwood. The Government's offer is to treat without cost posts that are furnished by land owners, who will use the posts as they are treated and report to the department on the result. While the work is largely experimental, there is sufficient promise of benefit to repay the farmer for his trouble in taking the posts to and from the treating plant located on the Cooper ranch.

The posts are dipped in creosote, which has been found to be about the best preservative for such purposes. While its effect on eucalyptus has never been officially tested, it has been in extensive use in the South for the treatment of piling for the swamps; and the Southern woods treated with creosote have been given a life of twenty-five to thirty years against three to five years for the same class of timber not treated. Experiments with the eucalyptus for wharf piling along the Santa Barbara coast have already given encouragement to the further planting of these trees, and the co-operation of the department at this time will result, no doubt, in further stimulus.

Redwood posts are now in general use throughout California and cost at this point from 15 to 20 cents. It is thought that eucalyptus posts can be grown for 5 or 6 cents and the cost of treating is from 2 to 3 cents. If the result of the treatment will give a post that will last as long as the redwood, there will be a saving in cost of one-half.

The posts are usually dipped for a depth of 3 feet, to allow about a foot to extend above ground. In some instances, for the sake of experiment, the entire post is immersed. A tank with a brick furnace underneath has been provided. The creosote is applied while at the boiling point.

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Has Stood All Tests for 30 Years.

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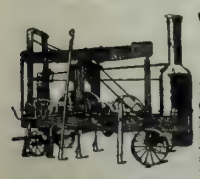
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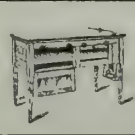
My birds are larger than P. Rocks; lay better than Leghorns.

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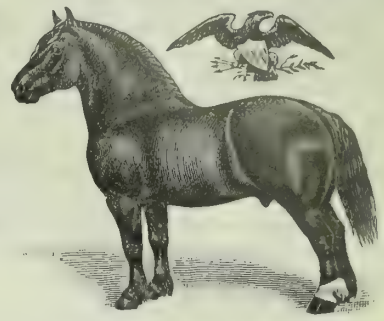
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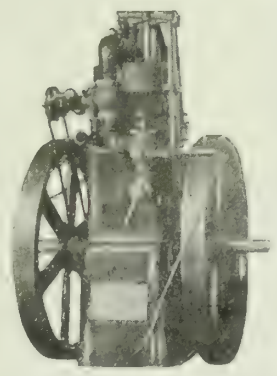
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Won, at the St. Louis World's Fair Dairy Demonstration: Test A, economic production of butter-fat and butter, and Test B, economic production of milk for all purposes related to dairying, on

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We also own the following cows in the St. Louis Tests:

Dorinda Darling,

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The herd is rich in the blood of others in that test.

Also, have a herd of Gernseys selected with great care.

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Prepared to furnish foundation herds of cattle and hogs. Prices reasonable. No catalogue.

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HOLSTEIN-FRIESIAN BULLS.

Do you want one that will improve your herd—one with strong official backing on both sides? The sire is half the herd. It is important that you use a good one. We have a choice lot of them. Let us send you one. Remember, our herd contains a larger number of cows with official records than any other herd in the world. Pierce Land & Stock Co., Room 884, James Flood Bldg., San Francisco, Cal.

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Tulare Grange Meeting.

To the Editor:—Tulare Grange convened in its hall in regular session on Saturday, the 7th. After formal opening and reading and approval of the minutes of the last meeting, an excellent lunch was ready and was enjoyed by all.

On reassembling, one application for the degrees was received and referred to a committee.

Worthy Master Barber reported, on behalf of special committee appointed by the Grange to wait on the Supervisors and protest against the granting of a franchise to any individual or company, to erect poles and stretch wires along the highways of this county for the transmission of electric light and power generated by the use of the streams of this county beyond the line of the county whenever the light and power is needed in this county.

The subject matter came before the Board of Supervisors on Tuesday, the 3d, on application of a company for a franchise, to it, to erect poles and stretch wires for the transmission of electric power generated on the Tule river, in Tulare county. Representatives of Tulare Grange and other public bodies appeared before the board and protested against letting the proposed franchise to any company without reserving the first right to use the power and light so transmitted to Tulare county if needed there. It was claimed and admitted that the opportunity for generating electric power on the streams therein is one of the natural advantages of Tulare county; that by electrical power the industries of the county can be best developed and promoted; that these industries will need all the power that can be economically developed on the streams of the county; that this county has, and should have, the first right to the same, and that for the Supervisors to do anything permitting so essential an element of our county's prosperity to be taken from us is a blunder which will ultimately work a great hardship to us and to the industries of Tulare county. The law providing for the granting of such franchises provides that the Board of Supervisors must advertise for bids for the franchise, and that the District Attorney advise the board that in advertising for bids the conditions of the franchise should be specified. On motion of Mr. Birkenhauer, seconded by Mr. Tont, it was resolved to grant the franchise without any restrictions as to where the power shall be taken to or used, all the board, except Mr. Twaddle, voting for it. The advertisement calling for bids was so framed. Of course the advertising is merely a form.

Mr. Fred Jacob of Iowa being present, on the request of the Worthy Master, gave an account of the workings of mutual fire insurance companies in that State. In 97 counties there are 117 mutual fire insurance companies. They have been in existence many years; between two and three hundred million dollars of risks are written; risks are written for five years; no risk is assumed until the company has applications amounting to $100,000; no one risk in excess of $4000 is written; risks are written only for two-thirds the value of the property; no premium is collected, but a charge of one dollar for each risk written, and of one-fourth of one mill per dollar, is made for current expenses when the risk is written; losses are paid by assessments the first of each year, these assessments not averaging one and a half mills per annum on the dollar. In all the years the company has existed it has met every loss, the greatest one loss being $2455.50. Every loss is promptly paid as soon as adjusted, the company borrowing the money from the local bank at 4% to 5% until the annual assessment is collected. The company Mr. Jacob writes for has $3,200,000 risks. Every assessment is promptly paid. No money is collected until needed, and no funds are kept on hand to excite the cupidity of agents. Every county in California should have a mutual insurance company, and the State and subordinate Granges should encourage and promote them.

A committee to report resolutions on the death of Bro. A. Fay was appointed. J. T.

Reading.

Good reading is fast being relegated to the "back stairs of time," with many other good things which we cannot well afford to lose. There seems to be no time or place found in the curriculums of the higher schools for plain, common sense lessons in reading. A woman who was trying to arrange a programme for an evening's entertainment sent for a bright high school girl, and asked her to read Joaquin Miller's "Men of Forty-Nine."

"Oh, but I cannot!" she exclaimed, "We have no time for reading lessons in our school. We have exercises in elocution, but I would not attempt to read a poem like that."

Elocution exercises are good, but the professional elocutionists are not the best and most pleasing readers. One has only to notice the readers at the clubs, not the old fashioned ones who were taught to respect vowel sounds, and give heed to commas and periods, but the modern readers, to sympathize with the mother, who called it not reading, but racing and mumbling. The "no time mantle" covers all our lives, and all we do, or shirk. There is so "much to be done" on every hand that when it comes to reading we have to clip our words, or we should never finish. Time presses. It is so much quicker to mumble than to pronounce every syllable distinctly. We have to mumble, or we could never get anywhere! And so we slur and slip and slash, and cut and race our lines, slaughtered victims of the King's English.

And what we do not express we courteously leave to our heroes to find out by their wit, or by their learning. And in nine cases out of ten the hearers have no time to give the matter a moment's thought beyond the hour. Said a club woman from the West, "I have no time or patience to give to slow readers; I want rapid reading, or none at all." We race from morning to night.

Said an octogenarian, "The time has come to me when I read with my eyes, not with my mind."

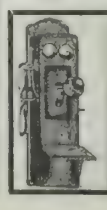
We are not all octogenarians. Do let us give ourselves the time to read with our minds if we read at all. Some of us read too much. A mere sponge is not the type of the highest life. Ralph Waldo Emerson said: "When I see a man staggering from a library every week under a load of books, I ask myself, how long since that man has heard from himself?"

The Salt in the Ocean.

If the ocean did not have salt it would freeze somewhat more readily than it does now, but there would be no very marked difference. The ocean is prevented from freezing not so much by its salt as by its size and its commotion. On account of its size, large portions of it extend into warm climates at all seasons, and by reason of its great depth it is a vast storehouse of heat. Its currents distribute much warm water among the cold.—St. Nicholas.

FOREMAN.

Capable man of 20 years' experience wishes superintendence of large fruit ranch or dairy farm. Best of references. Address Box 39, this office.



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"Clear, White Light of the DIETZ"

that settles it. You'll find a Dietz lantern dealer in most every town. But before you go to buy let us mail you free a book to post you up a little. You'll not be persuaded if you're posted. Then if you find no Dietz dealer in your town, just write us.

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PUMPS, PIPE and FITTINGS.
Estimates furnished on Pumping Plants and Water Supply Outfits.
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GLENN RANCH,

Glenn County, - - California.

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IN SUBDIVISIONS.

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This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular rips

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Elbe.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

F. C. LUSK,

Agent of N. D. Rideout, Administrator of the Estate of H. J. Glenn, at Chico, Butte County, California.

A Bargain in Land.

110 acres of the finest berry, seed, vegetable, alfalfa, dairy and apple land to be found in the valley. Soil deep, dark, rich alluvial. Within three miles of Palo Alto, in the artesian belt. No improvements. Good roads to the property. We are authorized to sell this property far below its real market value. Price $130 per acre.

If at all interested in this class of property, it will pay you to investigate this tract.

We have but a limited time to offer the property at this price.

JOHN F. BYXBEE,
PALO ALTO, SANTA CLARA COUNTY, CALIFORNIA.

FRUIT FARMS, 5, 10 AND 20 ACRES, IN THE BEAUTIFUL SANTA CLARA VALLEY.

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Answers to Inquiries.

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FISTULA.

F. P. H. Vorden, Cal., wants advice for "superficial necrosis of the maxillary bone, with fistulous communication between diseased bone and atmosphere. Have injected a solution of sulphate of zinc and acetate of lead, which seemed to do some good for a while, but sore did not entirely heal, and is running afresh now."

Reply: Doubtless there is some diseased bone which should be curetted out, so that healthy granulation can get started. You should consult a veterinarian, but if impossible, you must lay each of these fistulous tracks open, so that good drainage is present, and wash out at least twice a day with a 2% solution of some good coaltar disinfectant.

Hog Cholera.

Beginning with the month of July, severe outbreaks of "hog cholera" have been reported from different sections of the State of Indiana, and a number of requests have been received for a method of treating the disease. It is in response to the demand for information on the subject that the following bulletin has been prepared by R. A. Craig, veterinarian of the station. As medicinal treatment is unsatisfactory and a successful, practical vaccine or antitoxin has not been found, the only treatment that can be recommended is preventive, and consists in using all possible precautions against carrying the germs into the hog lots, and supplying clean, healthful surroundings and clean feed.

The main precautions against carrying the germs into the yards are as follows:

1. Hogs from other herds, or stock shows should not be allowed to mix with the herd until they have been proven free from disease.
2. All possible ways in which the germs can be carried into the yard by people, dogs, birds, etc., should be guarded against, especially when the disease is present in the neighborhood.
3. Dipping or washing the hogs with a 2% water solution of a tar disinfectant should be practiced and the animals placed in quarantine for at least three weeks in yards that do not communicate in any way with the regular yards.
4. When it is necessary for persons to enter pens where the disease is known to exist, they should clean and disinfect their shoes on leaving.
5. Persons taking care of sick hogs should use all possible precautions against the spread of disease in their neighborhood.

The importance of clean feed, water, troughs and feeding floors must be emphasized, as it is in the feed that the germs usually enter the body. In no other place on the farm are whitewash and disinfectants so necessary as in the hog houses and pens. Pastures and lots can be kept in a more healthful condition if the hogs are taken out for a few months each year, and a forage crop sowed in the unused lots. Clean yards prevent exposure to a large number of active germs at any one time, in this way being an important help in preventing disease. Pens and pastures receiving the drainage from neighboring swine enclosures should not be used.

Some of the necessary measures in the treatment of a sick herd are as follows:

1. Disinfect the feeding floors, troughs, hog houses and their immediate surroundings daily with a water solution of a tar disinfectant (two to four per cent). If this can not be done, remove the hogs and build temporary quarters.
2. Feed a light, sloppy diet of shorts, bran, etc.
3. Do not leave water and slop in the troughs for the hogs to wallow in.
4. Copper sulphate can be dissolved in the drinking water and slop in the proportion of four ounces to the barrel.
5. The dead hogs should be burned, or buried and, their bodies covered with lime.

If these precautions against the spread and perpetuation of "hog cholera" were observed, it is believed that this disease could not exist as an epidemic from year to year.

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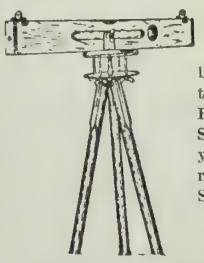
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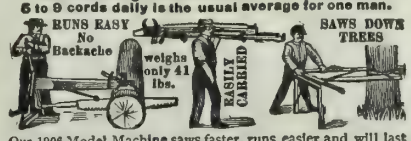
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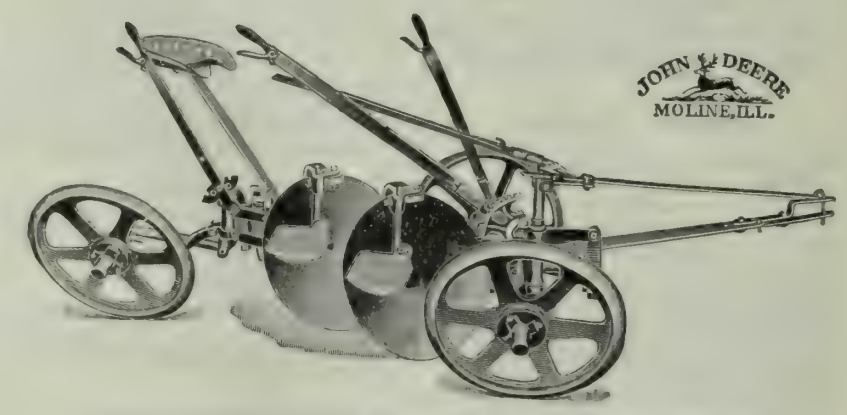
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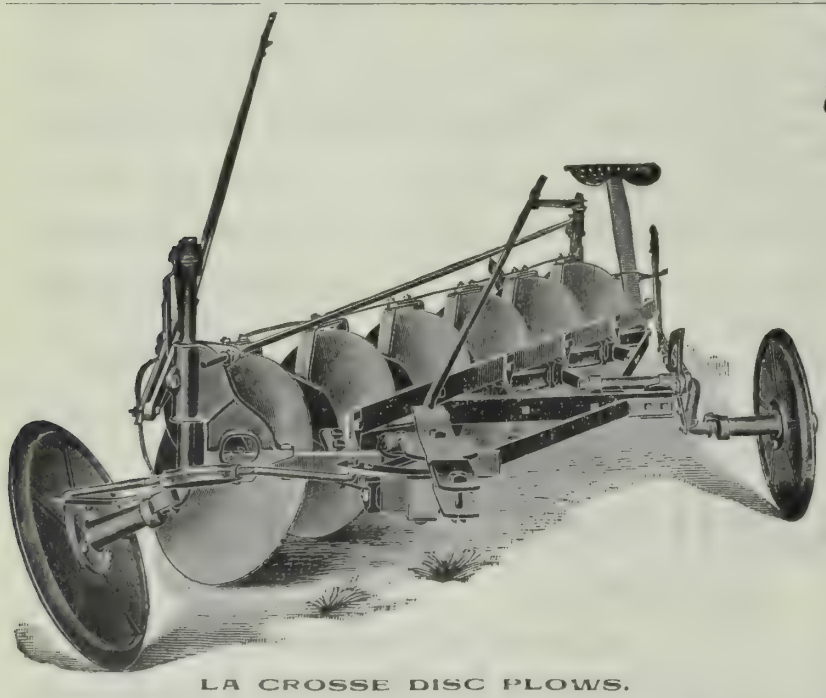
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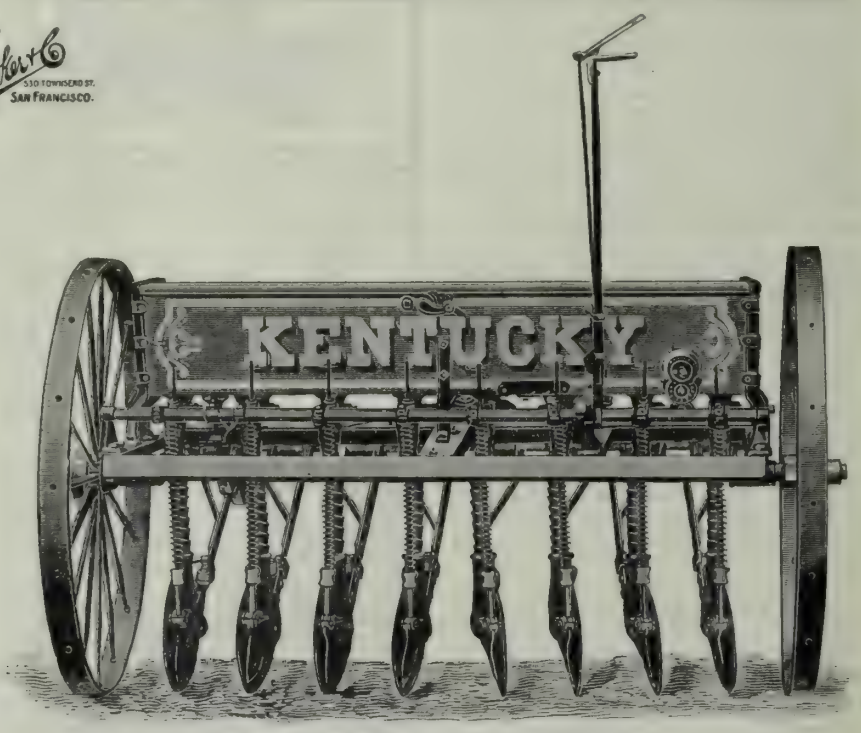
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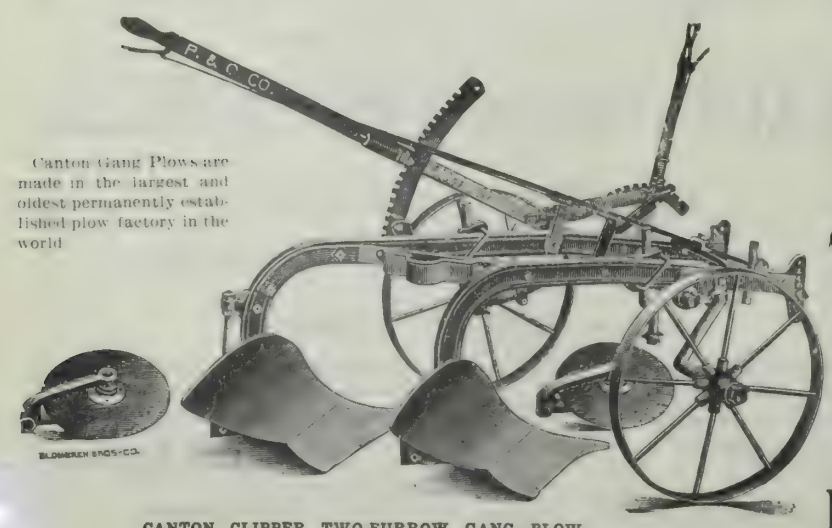


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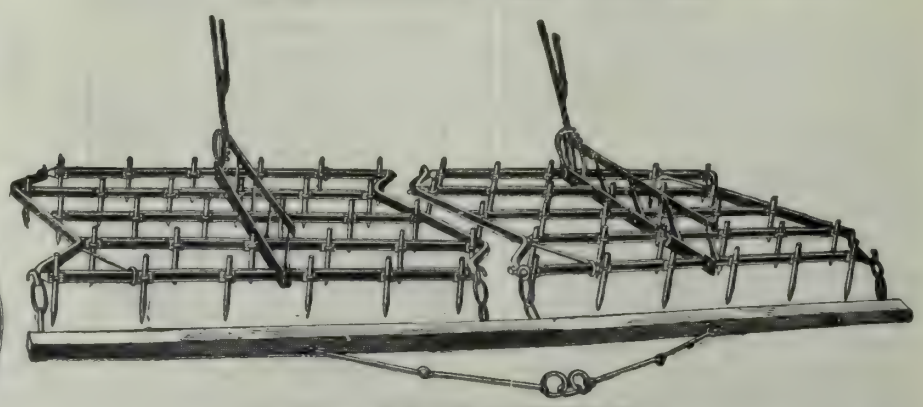


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Vol. LXX. No. 18. SAN FRANCISCO, SATURDAY, OCTOBER 28, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Field Work for Students.

Modern methods in education are being developed upon the conviction that the student should be brought as closely as possible to the real thing in whatever line he is pursuing. This principle would seem at first thought to be confined largely to scientific and industrial subjects, and its application does naturally proceed most widely with those subjects, but a second thought shows that the method has always prevailed in such esthetic subjects as drawing, painting and sculpture, and more recently is being strongly urged in educational effort in literature in which pupils are being encouraged to do less with books and more with the real things about which books are made. Students in history, for instance, are being encouraged not to receive unquestioned the work of historians, but, so far as possible, to go back to the original records, manuscripts, etc., and to the real scenes where transactions originated. The modern student, then, is led as far as possible to derive his own ideas by the application of his own senses and faculties to original sources of information, and to learn to think upon them, rather than upon what some one else has thought about them.



Bird's-Eye View of University Students' Camp Near Santa Cruz.

We have constantly reminded our readers that the best work in agricultural education, including the sciences on which agriculture rests, is that which comes closest to the real thing in nature and in human achievement. This is what is popularly called practical, but it is also thoroughly scientific, and so far as it results in sound deductions and generalizations it is theoretical also. Some people get an idea that theoretical instruction means fanciful instruction, but that is an outrage upon the very word theory, which in its best sense means an exposition of principles which are of universal application and underlie true practice everywhere.

Every one is interested in the combination of theory and practice in educational effort, and with this in view we give this page this week to a suggestion of how the combination is made in instruction in civil engineering at the University of California. The pictures show how the students arrange for field studies, and an account recently written by Prof. Charles Derleth, Jr., of the University enables us to introduce some descriptive paragraphs to accompany the engravings. Prof. Derleth shows that all the large Eastern institutions have summer surveying schools. Some of these are older and more equipped with permanent buildings, but none are larger than Camp California, while the latter has the distinct advantage of lacking all permanent fixtures and being exactly like the roving camp of a railroad party which is locating a long length of track through a wilderness.

Upon arrival at camp in stages from Santa Cruz last May, the students and instructors joined hands in the construction of a cook house, a wood house for sheltering instruments, a barn for horses, feed and storage, sanitary buildings and water supply and in the pitching of nearly sixty army tents. This work was no small job and was proved to be one of the most valuable experiences for the young men, for it gave them all the conditions of the actual establishment of a large camp on untried ground, and all enjoyed and profited by it. In Eastern summer schools these opportunities are often wanting, due to the permanent nature of the site and buildings.

With these matters settled, the work of the school is planned, which has as its final object the making of a complete topographical map of Arroyo de la Laguna ranch, a property of about 2500 acres, by the freshmen and sophomores, and the running of an imaginary railroad line by the junior class. All of this work is done in a most practical way and with complete organizations of parties so changed in personnel from day to day that every student gets a chance to be everybody from axeman and chainman to transitman and chief engineer. The results of the summer's work are carefully compiled and recorded and used in further studies the following winter at Berkeley. Two hundred and twenty-five students attended the camp last spring, and the total cost to the students for transportation, maintenance and fees was $30 each for four weeks' camp life and instruction. Four weeks spent in this way prove of inestimable value to all the men, who invariably have a good word for camp.



A Level Party on Very Rough Ground.



Studying Adjustment of Solar Compass and Transit.



Noon Hour in Dining Tent of Summer Camp.

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SAN FRANCISCO, OCTOBER 28, 1905.

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The Week.

Delightful weather continues, neither rain nor frost interfering with open-air affairs. The throngs of people who are now passing through the State after the Portland Exposition, and the other throngs who are coming in on the favoring terms offered by the overland railways, to make new California homes, certainly find all promises of a salubrious October verified and the usual autumn wraps of the East comfortably dispensed with. When this impression has been duly made, we hope it will start in and rain and blow in the way the old Californian knows to be good for the State.

It is certainly a good thing to get all the money there is in late grapes—and that is being done this year in fine style. Early this week cars were selling freely in Eastern cities at from $1500 to $1700 each, which must have been upwards of $125 per ton for the grapes, and to be able to sell our grapes by the carload at 5@6c per pound just at the time that the Eastern grape crop is at its height is a very significant thing. It is not long since our darktown friends told us that the extension of Eastern grape production would close the doors to the California product. It is really wonderful how much these prophets of evil did not know.

Wheat is on the bull's horns this week and quotations are advanced with a rush. Our Market Review shows how many affairs are working together to lift the grain. Barley has also advanced and in this only local conditions are concerned, for it seems hard to find out whether California has any barley or not. Corn, oats and rye are also strong. Beans are plenty, but the brisk demand keeps prices steady. More bran is coming from the North, but prices are unchanged. Hay is arriving slowly and advancing. The only change in meats is a slight weakness in veal, which is arriving rather freely. Butter and cheese are both rising, the former notably, and eggs are in the same company. Poultry prices are good for choice and bad for lower grades and sizes. Potatoes are improving a little but still weak, while onions are doing better than for several weeks. New oranges are selling well, though, as usual at this season, rather green. Lemons are scarce to-day and are selling high. Apples are abundant and not strong, though the outlook is called good. The dried fruit market is strong. Almonds are still weak and walnuts firm. Honey holders and buyers are still apart. Hops are reported selling now at a lower range than held for. Wool is quiet.

Some one has kindly sent us a priced catalogue of the Shorthorn sale of Messrs. Rush and Pierce, held last week at Suisun. The prices were moderate—in fact, should be an encouragement to buyers, for they got more than the worth of their money. The only way the breeders can realize is in the long run and in the reputation, which they expect to build up of selling what they offer at the bidders' prices and in furnishing animals of good breeding in serviceable condition. As we understand from those who saw the sale, the animals were right from the range, tough and lusty and not in any way finished for the occasion. To get such animals at reasonable prices should be an encouragement to buyers and we hope it will work out that way in the future.

The irrigation convention of the Sacramento Valley Development Association held at the Capital on Saturday last was a great success. There was a large and representative attendance and the keenest interest was manifested. The presentation of the situation by the representatives of the United States Reclamation Service was very satisfactory, and the disposition of all county representatives to work for the whole valley and to support any part of the great enterprise which the Reclamation Service should think it wise to undertake first, was very promising. The Association calling the convention has a right to congratulate itself upon the result which is really the beginning of an enterprise which has in it a great opportunity for work of inestimable value to the State. Now let discussion proceed until all propositions are fully understood and all interested can intelligently go to work.

One of the most important points to make is a demonstration of what can be done in the Sacramento valley by a recourse to irrigation, and how much can be gained by it. It is true there are many private efforts moving along that line and the transformation of the plains of Yolo county into park-like stretches of irrigated alfalfa cannot fail to exert a great influence. It will, however, be well to have official work proceeding to the same end, with many different cultures. For this reason we are glad to read that the Sacramento Valley Development Association is in receipt of a letter from George Thresher, a prominent farmer near Gridley, who offers to lease for a nominal rental eighty acres of land for use by the United States Department of Agriculture as a practical demonstration farm. The visit of Professor W. J. Spillman, in charge of the farm management work of the Department, occurred but a short time ago. Mr. Spillman was most favorably impressed with the opportunity for demonstration work here and there is a strong probability that this class of work may be undertaken here. Gridley is regarded as a likely field for farm demonstration, because of the recent construction there of a great irrigation canal, and consequent certainty that new methods of farming will be undertaken. New methods mean a good deal of experimental work, which it is advisable should be undertaken by some general agency. California has ample opportunity for experimentation and demonstration in agriculture, and the more of it the general government will undertake the better for the State.

And there is another thing which we think the United States Government ought also to undertake, and that is to take care of the wild Colorado river which has escaped from well-intended irrigators who took water from its treacherous bank. The Secretary of the Interior has received a petition from several citizens of the Imperial valley in California asking for relief from the damage done to their property by those whose method of building a drainage canal through that region is alleged to have resulted in the formation of a lake covering 600 square miles and in the loss through inundation of 25,000 acres of farm lands. They built a canal from the Colorado river north of the Mexican boundary into Mexico for 11 miles, where it emptied into an old river channel by which the water thus diverted would return to this country. In 1901 they began to deliver water, but in 1903 there were many complaints from the settlers about the scarcity of water. The company in 1904 made another canal from their canal into the Colorado river at a point about 4 miles below the American line; but this diversion from the Colorado river was made without any controlling works, and during the winter and spring heavy rains washed out the canals so that 86% of the water flowed to the valley and only 14% went through the river to the Gulf of California. It will take at least six months to install adequate works to turn the river back into the old channel. This, it strikes us, is properly a Government work, as the river seems to have laughed at private enterprise and Uncle Sam should now teach it to behave itself. It is a river improvement enterprise which should not be neglected.

QUERIES AND REPLIES.

The Poultry Tick.

To the Editor:—Inclosed you will find an envelop containing a few bugs that is new to this part of the country so far as we have been able to ascertain. The insect was first brought to notice by its tackling the poultry of a neighbor, and he called my attention to it, and I will say that I never saw anything in their line half so ferocious. They are on the chickens by the millions—in fact, as thick as you ever saw the lice on a willow twig, and adhere to the chick, so that one has to scrape them off with a knife with much difficulty; in a space as large as a thumb-nail one could count fifty of these insects. I told the party I would get you to pass upon them, so kindly give us your opinion. The enclosed contains the pest in two stages—after they fill upon the chick they retire and die and the stage that you will find adhereing to the cobweb. Some of the insects you will find dead, as the chick was dipped with sheep-dip; though they were dead, yet they were very difficult to scrape from the chick. This party has lost several dozens of fine chickens in less than a week. Kindly give us your views in the Pacific Rural Press.—J. F. Crowder, Selma.

The insects are the common poultry tick. They are one of the greatest pests of the poultry keeper in the interior valley of California, because they are so difficult to dislodge. They can be killed by fumigation with hydrocyanic acid gas, such as is applied to citrus trees, but no chicken houses are tight enough to admit of the effective use of this gas, unless one could rig a tent just as they do for the covering of an orange tree. Experiments in this direction seem to be warranted. All efforts to free houses of these ticks by spraying, whitewash, etc., are ineffective. About the only effective treatment so far suggested is to build the houses of galvanized iron and then at intervals to fill them with straw and set fire to the whole outfit. Of course, the poultry could be freed from the insect by dipping in water which had a little oil floating on the top, for the ticks are killed as easily with plain oil as with any other substance, but cleansing the birds is the smallest part of the problem; freeing the houses of the vermin is really the difficult thing and that has not yet been easily accomplished.

Feeding Value of Barleys.

To the Editor:—A number of your readers here would like to know if there is more value in Chevalier barley as a chicken feed than there is in common barley.—A Subscriber, Hollister.

There is no appreciable difference in composition between Chevalier and other barley of the same grade. There is, however, much advantage in feeding good, plump grain rather than poor grain, and experience seems to lead to the decision that the highest priced grains are really the cheapest—disregarding, of course, abnormal demand, which may sometimes influence the value of certain kinds.

An interesting statement is given by the Livermore Herald about feeding barley to fowls which many readers may like to try. When fed dry it is hard to digest, and when soaked in the ordinary way frequently produces fermentation, with the further effect of producing indigestion and intestinal disorders. Mr. Charles Ginger, a local poultry raiser of long experience, has discovered the remedy. Instead of soaking the barley in a barrel or vat and leaving it long enough to ferment, he soaks it thoroughly and immediately deposits it in long, shallow trenches. He covers the grain with earth and over that places a screen of lath to protect it from being scratched up by chickens. The act of germinating makes a chemical change in the kernel and it is found to be as sweet as a nut and a wholesome food for the chickens.

Subirrigating Peas.

To the Editor:—In your last copy of the Pacific Rural Press, page 260, under the heading of "Sheep and Wool," I noticed an extensive article on the Mexican pea and results attending its use. I desire to call your attention to the statement contained therein: "No cultivation is given. Subirrigation is practiced. One man can irrigate five or six quarter sections." An explanation of how this is done would prove quite interesting to the average Californian, and some knowledge might be thereby gained that could be put to good use by California irrigators.—C. E. D., Kingsburg.

We take it the method is by allowing water to flow in rather deep ditches and to move out by lateral seepage—a sort of underflow proposition, such as is relied upon in your own part of the country to some extent. It is perfectly sure that there is no system of subirrigation by pipes or anything of that sort. The first cost of that would be several times as much as the land is worth—not to mention other objections. The Colorado lands are probably of such character that water circulates freely through them, and the plant being thus supplied from below in adequate amount does not need conservation of moisture by surface cultivation.

A New Zealander Inquires.

To the Editor:—Can you give me any definite information regarding the Spencer seedless apple of Colorado? Is it actually seedless and coreless? Is the fruit of good color and good quality, and what is its season of ripening? Are there five closely allied varieties of the seedless apple, or is there only one variety? From articles we read it would appear that there were five original trees, and that these were propagated from indiscriminately without regard to differences — the five trees being treated as if they were actually one variety. What is the general opinion among commercial growers in California regarding this apple? Where can trees or scions be obtained?

In the Pacific Rural Press of May 20th I notice that free distribution of the new codlin moth parasite — Eppialtes carbonarius — will be commenced next September. Would it be possible for an applicant in New Zealand to get a supply of this insect by applying to the Commissioner of Horticulture in California, or failing this could you say where a supply could be obtained?

Is it possible under any circumstances for an apple or pear or any other fruit to come to maturity without pollenation of any kind? And should such fruit come to maturity is it possible for it to contain good seed?—Reader, New Zealand.

This coreless apple has been violently thrown down by all Eastern horticultural experts whose reports we have seen. We have not had opportunity to examine it. There is no general opinion among California commercial growers about it because no crop of it has been grown. We do not know where trees can be obtained; that is likely to crop out in our advertising columns whenever anyone is ready to offer it. Coreless apples are certainly very old and the worst thing about them is that they have never had any value except as curiosities.

The codlin moth parasite is being propagated by the California Horticultural Commissioner and applications can be addressed to his offices either in this city or Sacramento. We understand that the supply does not yet permit wide distribution, but it is well enough to file applications.

It is possible for a fruit to come to maturity without pollenation of any kind, but when a fruit generally seedless contains a seed it presupposes pollenation.

Times for Pruning.

To the Editor:—I would like to know at what time it is best to prune apricot trees? A friend tells me that in the Santa Clara valley they prune their apricot trees in September. If that be true, why is that not a proper time to prune peach trees also? I have a small vineyard of Tokay grapes; they did not do well this year. My neighbors tell me they were not trimmed at the right time, that I should have waited until January, whereas I trimmed them in November. Was that too early? I am much interested in the information you give to the readers of your paper.—A. H. Willard, Glenn county.

Trees which bear early fruits usually finish their growth periods earliest in the fall and can be safely given ordinary pruning soonest. This is true of the apricot and experience justifies the practice of which you speak. The peach usually grows later in the season than the apricot and pruning should generally not be undertaken until the leaves have finished their season's work; consequently usually the peach should not be pruned so early as the apricot. If your Tokay vines had finished their leaf action in November pruning at that time can be done as well as in January, except that the earlier pruning induces earlier start in the spring and in that way may invite frost injury to the young growth. Probably some other conditions are affecting your vines.

Onion Growing.

To the Editor:—What is the best time and how late can you plant onion seed to transplant for big onions? Do onions need more moisture than any other garden crop? This is on rich river bottom land and I do not calculate to irrigate.—Enquirer, St. Helena.

Just how late one can plant onion seed to get seedlings for transplanting depends on the local climate in the place where he is operating. It is usual to sow the seed from September to November, according as the ground becomes moistened by rains and to transplant from February onward, according to the character of the winter, because it is useless to transplant until the ground comes into the best condition and this is much later in some localities than others; in fact, your district is rather late, because of the abundant rainfall and the rather sharp frosts that sometimes occur. Under the conditions you describe it does not seem as though resort to irrigation would be at all necessary. We suppose you know that although transplanting seedling onions has been practiced in California for a long time, the chief part of the crop is made from seed sown in the field when the ground comes into good condition early in the spring.

Not Root Knot.

To the Editor:—Under separate cover I am sending you a sample of root knot on young apple tree. This form is under dispute in this district, as to its being crown gall or not. Do you know if it really is or not?—Horticulturist, Toppenish, Wash.

We should not call it root knot. The many small roots starting at the point in question have the appearance of growing out from a natural callus which seems to have been put out from the root to heal an injury to the bark by some mechanical agency. The slight swelling at the base of these roots has then the characteristic of a callus growth and not of a root knot. The curling or circling of the fibers which is found in a knot is not discernible in the specimen. We therefore hesitate not to call it not a knot.

Out of Our Reach.

To the Editor:—Can you tell me whether I can grow English walnuts in Virginia on land where ordinary orchard fruits and figs do well?—Reader, South Dakota.

It is almost impossible for Californians to tell whether the English walnut will succeed in Virginia or not. From what you say about other fruits growing, it seems likely that suitable varieties of the English walnut would also do well. Your application for information, however, should be addressed to the Bureau of Pomology, United States Department of Agriculture, Washington, D. C., and they can send you specific information, because the district you mention is directly under their observation.

Crude Oil for Peach Borers.

To the Editor:—What is the general experience with the use of crude petroleum for painting about the base of trees, and beneath the ground, as a treatment for peach borer? Some claim that if this is done, and the earth not replaced for two or three weeks, the possibility of after injury is prevented by the evaporation that takes place in the meantime.—L. C., Morgan Hill.

Crude oil had certainly been used in this way without injury, according to testimony sent us last year. Who will give us experience up to date?

Curing Smyrna Figs.

To the Editor:—Will you please publish a receipt for drying white Smyrna figs, of which we have many?—Subscriber, Ventura county.

We have published such full accounts in recent volumes that we can not repeat now. You can get a good pamphlet on the subject from Mr. George C. Roeding of Fresno. His instructions are good for all figs, and so will be helpful in the figs you have for White Smyrna, although figs freely distributed years ago in southern California under that name were not the true Smyrna fig.

The Alligator Pear.

To the Editor:—What climate, soil, etc., are necessary to the culture of the avocado or Alligator pear, and where may seeds for planting be obtained?—Subscriber, Stanislaus county.

This fruit is successfully grown in thermal situations near the southern coast from Santa Barbara southward. The presumption is that the tree will not be worth growing in frosty situations, and only demonstrations by actual trial can remove this.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 23, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Clear weather, with pleasant days and cool nights, prevailed during the past week. These conditions were favorable for beans and fruit drying. Light frost occurred on the 18th, but caused no damage. Large shipments of Tokay grapes continue from the American river district. Prune drying is about completed; the crop was light. Grapes continue to go to the wineries. Citrus fruits are making excellent progress and promise good crops. Dry plowing and seeding are progressing. Cattle and sheep are in good condition and healthy, but feed is getting scarce. Rain is badly needed. A good apple crop will be harvested.

Coast and Bay Sections.

Generally clear weather, with pleasant days and cool nights, prevailed during the past week. Heavy frosts have occurred in the mountain sections, but caused no damage. Farm work is generally backward, owing to the absence of rain. Plowing is progressing in the northern counties. The apple crop is large and of excellent quality. The bean crop is nearly all in sacks; the crop is large and of good quality. A good crop of walnuts is being harvested. The grape harvest is completed and most varieties were a good yield. Pruning is progressing. Dry feed is scarce and cattle are only doing fairly well.

San Joaquin Valley.

Clear weather, with warm days and cool nights, prevailed during the past week. Light frosts occurred generally on the nights of the 18th and 19th, but no damage resulted. Raisins are being hauled to the packing houses, which are running to their full capacity. Large shipments of raisins were made to Eastern markets during the week. Wine grapes continue to be picked and shipped to the wineries. Olives are progressing and promise a good crop. Alfalfa thrashing is about completed. Oranges are coloring slightly and promise a large crop. Dry plowing abd seeding are progressing. Dry feed is plentiful and stock are healthy and in good condition.

Southern California.

Generally fair weather prevailed during the past week, with light showers along the coast Saturday night and in the extreme south Sunday night. Fruit drying and raisin making are nearly completed. Nine-tenths of the raisin crop is packed and many carloads have already been shipped. Guavas are yielding splendidly, the quality and quantity exceeding that of last year. Walnuts are ripening slowly. Late potatoes are making good progress. A large crop of beans is being harvested. Citrus fruits are in excellent condition and promise large crops. The water supply is increasing with the cooler weather.

Eureka Summary.—The weather was dry and clear, with frosty mornings. Plowing continues and some seeding is in progress, but the ground is getting dry and rain is much needed. Large shipments of apples and peas continue.

Los Angeles Summary.—The weather during the week was cool, with light rain at the close, but no damage resulted. Bean thrashing is nearly ended; some Limas yet in the field; the crop is good. Walnut harvest is in progress. Oranges are reported fine in some sections, but a light crop.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Oct. 25, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	1.76	4 36	3.73	60	40
Red Bluff	.00	.18	8 46	1.94	88	46
Sacramento	.00	.02	5 54	1.31	76	38
San Francisco	.00	T	7 46	1.48	74	50
San Jose	.00	.00	.....	.....	80	36
Fresno	.00	T	4.99	1.92	80	42
Independence	.00	.24	.45	.52	74	36
San Luis Obispo	T	.03	4.60	1.75	76	38
Los Angeles	.08	.08	1.14	83	74	48
San Diego	.24	.90	.17	.45	68	50
Yuma	02	.56	.81	.91	88	50

THE POULTRY YARD.

Turkey Growing in California.

To the Editor:—It is to be hoped that more Californians will engage in the turkey business this year than ever before. There need be no fear of overproduction, for thousands of turkeys are shipped here from the East each fall, and in this beautiful State, where all conditions are ideal, why should we not profit by this industry? Large turkeys are in demand at Thanksgiving time, and when floods and heavy spring rains prevail throughout the Central States the early turkeys seldom live to see California, and the growers are then obliged to be content with shipping their second—or later—batch of turkeys, which are necessarily small—not at all what the housewife would wish for the main dish of the Thanksgiving spread.

Can we not, then, persuade the good man who is the fortunate possessor of a clover or alfalfa field that there is more money in turkeys at 15 cents to 20 cents a pound, on foot, than in hogs at 6 cents—that they require little more attention, and that it takes less to fatten them? However, there are discouragements, and some failures, in the beginning. One must be prepared for these, but by giving the business our best thought and effort (the best is none too good) success will follow.

Selection of Breeding Stock.—From six to twelve hens and one tom will make a good beginning. Care should be taken not to select extremely large, small or fat turkeys. It is a matter of regret that some breeders will advertise and sell for breeding purposes toms weighing over thirty pounds and hens over twenty pounds. I believe their doing so has created the demand for them, and dissatisfaction usually follows. As an illustration: The largest hen I have has laid but one batch of eggs this year, and has remained with her brood all summer. She trampled on four of her poults, killing them. A neighbor came to me last year to secure a tom "not to weigh less than thirty pounds." I could not supply him; but wrote to a number of breeders and finally secured what he wanted. Out of his first batch of seventy eggs only eleven poults were hatched, and he was obliged to rent another tom for the rest of the season. There need be no fear but that there will be very large turkeys—and many of them—among the offspring of medium-sized parent stock. All good points should be represented in hen and tom combined. Young hens make good mothers and produce strong poults. Older hens lay more eggs during the year.

The bronze hen should have a large leg bone, legs of a reddish tint, full breast, the head plentifully dotted with red, brilliant plumage laced with white on breast, wings and tail. When standing "at attention" there should be almost a perfect slope from the head to the tip of the tail. The mongrel bronze is a dull brown, blue-headed, hollow-chested, and stands much like a buzzard.

In selecting a tom do not choose the largest in the flock, but rather one that is active, quick to gobble at a strange noise, of bright plumage, much pride, and a good eater. He should have a full bronze breast, large leg bone and large frame, but should not be fat. Be careful that he is not related to the hens.

If you do not wish a breeder to make your selections, a few weeks before Thanksgiving go to someone having a large flock to be marketed and select for yourself. It is best, however, to tell a breeder exactly what you want and let him send them to you, as you are then more likely to get stock of pure blood.

Fattening for Market.—In the first place the fowls should have comfortable roosts, placed low. By comfortable, I do not mean inch wide or round roosts, but roosts at least 2 inches wide. The feet of fowls were not made to cling, like those of birds. If they have been roosting indoors no change should be made at this time, but it is best to have them roost out of doors at all times.

One method of fattening is to confine them in pens, a space of about 40 feet each way for 100 turkeys. If they are not accustomed to being penned, sacks, canvas or boards may be placed all about the pen, from the ground up for about 4 feet. They will not then fret to get out. Several drinking vessels of ample size may be placed in brackets against the sides of the pen, about 2 feet from the ground, and filled with fresh water twice daily. A very little lime in the drinking water keeps their digestive organs in good condition. Feed ample rations three times a day, removing all food that will sour or ferment, within an hour after feeding, giving fresh food each time. Whole corn, cornmeal and bran mash, pumpkin and beans cooked together, rolled barley, and sweet milk to drink, are all good fatteners, and a variety keeps the fowls in good appetite. The first few feeds should be light. Of course a pile of grit and some charcoal should be placed in the pen. Fattening by this method may be accomplished in eighteen days.

Another method is to allow the fowls to range while fattening. They may be called up three times a day and fed a generous ration of any of the above foods. They will soon quiet down and range but little. Indeed, they will be under foot at all hours of the day. They will fatten as well by this method as by penning them, with less danger of liver trouble, but the fattening process should begin at an earlier date.

Poultry Diseases.—A whole page might be written about poultry diseases, their preventive and cure. It might be well to mention that a little lime in the drinking water will usually prevent such trouble as diarrhœa, dysentery, etc. There are no evil effects from the use of lime water for any poultry. I notice in a recent number of an Eastern poultry journal that the use of lime for poultry is also recommended by Dr. Louis Dechmann of Needham, Mass. Dr. Dechmann is one of the best physiological chemists in this country and has made an exhaustive study of poultry diseases. Of course dry lime should be used sparingly about poultry, as it causes an irritation of the throat and lungs, leading to more serious trouble, but it would seem hardly necessary to mention this to the thinking person.

Roup is quite prevalent at this time. Bluestone in the drinking water is an excellent preventive. Ask your druggist to pulverize it for you. Put it in a large bottle and fill the bottle with warm water. Pour a little of this in the drinking water when there is a sudden change in the atmosphere, or at the first appearance of the disease. In advanced stages, confine the fowl and give a pill or two made from bread and two or three drops of eucalyptus oil; also a teaspoonful of epsom salts in a quart of drinking water as their only drink for a day.

A thorough campaign against vermin now will do as much toward exterminating them as a half summer's work. Mrs. N. Frank Morse.

Fullerton, Cal.

HORTICULTURE.

National Council of Horticulture.

To the Editor:—The first regular meeting of the National Council of Horticulture was held at the Hollenden Hotel, Cleveland, O., Wednesday, October 4th. Meeting with the representatives of the preliminary organization were the delegates from the American Association of Nurserymen, the Society of American Florists and the American Seed-trade Association.

The occasion of the meeting was opportune, it being the week of the annual meeting of the American Civic Association, and the public sessions of this body and the consultation afforded with the officers made clear to the delegates of these national societies the possibility and great opportunity for exploiting horticulture through the public press, aside from the Horticultural Council work, which seemed to promise great and immediate results in all lines of the work.

The possibilities of the work of the Council were discussed in considerable detail; its standing and power in case its influence might be needed in a national way on questions of customs, postage or like work with the transportation companies; its power internationally considered on questions of nomenclature and other similar lines.

The delegates from the national bodies above mentioned, while having no authority to bind definitely their organizations, did, however, express themselves satisfied that great benefit might accrue to their societies through the plans proposed if rightly worked out, and all pledged themselves to recommend to their respective societies that a union, on the general plan outlined by Professor Bailey for the formation of the Council in July last, be carried out as early as practical.

But the question of promoting horticulture in a broad way on the nursery, florist and seed lines appealed so strongly to those present that it was decided (pending the definite action of these three societies themselves at their next annual meetings, which will not occur for many months) to make a good preliminary trial of the proposed press news by means of private subscriptions to be taken up from leading members of the above trades—firms largely interested in horticulture in their respective lines. To this end a letter was ordered to be prepared, which should be sent out under the heading of the National Council and signed by its officers, the letters to the leading florists to be signed and sent out by Mr. Philip Breitmeyer, representing the Society of American Florists; Mr. J. H. Dayton, of the Storrs & Harrison Co. for the American Nurserymen's Association, and by Mr. C. E. Kendel for the American Seed-trade Association.

It was believed that by means of such letters requesting a nominal contribution from prominent firms, this experiment, which has worked such wonders for the benefit of the American Civic Association, could be tried in a similar way for horticulture, and the results, when laid before these associations at their next annual meeting, would afford them good and reliable data on which they could intelligently decide regarding their support of the proposed National Council.

The meeting was greatly aided by the advice of Mr. J. Horace MacFarland, president of the American Civic Association, and Mr. D. J. Thomas of Springfield, O., of the same association, and who is to be credited with the preparation of much of the news matter which has been sent out by that association. Mr. J. C. Vaughan acted as chairman of the meeting, and Mr. H. C. Irish, secretary. Among those present during the sessions were: J. C. Vaughan, H. C. Irish, C. E. Kendel, J. F. Sullivan, J. A. Griffith, Philip Breitmeyer, J. H. Dayton, J. Horace MacFarland, Wm. Gammage, D. J. Thomas and Adam Graham.

Letters and telegrams were read from: Professors John Craig, L. H. Bailey, L. R. Taft, W. W. Tracy, S. B. Green, E. J. Wickson, and Messrs. T. V. Munson, Wm. Scott, T. C. Wilson (secretary American Apple Growers' Congress) and E. Albertson (president American Association of Nurserymen).

H. C. Irish.

Missouri Botanic Garden, St. Louis.

Tree Tanglefoot on the Bark.

To the Editor:—Regarding the inquiry from "Grower," in your issue of Oct. 14, 1905, I can say that I applied tree tanglefoot directly to the bark of about 1000 prune, peach, apple, cherry and pear trees last November. Trees were from one to twelve years old, and a very careful inspection of the trees recently showed positively no injurious results. Considerable of the compound was used in this locality last fall, but so far as I know, I was the only one who applied it directly to the bark. I am so sure of its harmlessness that I shall use it in the same manner on the balance of my orchard again this fall. The compound will remain sticky for three to six months during all conditions of weather, and no living insect can cross a properly applied band of tree tanglefoot.—Geo. A. Stone, Santa Rosa.

This meets our invitation to those who have used the preparation to give facts. Farther discussion of the matter belongs to our advertising columns.

The Sugar Prune.

To the Editor:—Some of the leading packers recommend that the Sugar prune be pitted before drying. It is generally conceded in the market that this prune will not compare with the Imperial or the Clairac, or with the larger grades of French prune in quality. That being the case, its only recommendation would seem to be its great productiveness, unless it could be put to some other commercial use, as here suggested. The question is a very important one, as many thousands of apricot, peach and other trees have been grafted over to this variety, besides the many more thousands of young trees just coming into bearing. Unless it be made a special product, as a pitted prune, for instance, it will tend to embarrass the prune industry still more by reason of its inferior quality as a prune. The whole future success of the prune industry in California hangs upon that one thing, quality. We can grow the right article and we can cure and pack it right; but we don't do either exclusively, and it is the exception—the poor pack—that hurts the sale of California prunes.

The Sugar prune tree requires very different treatment from the French or any of its types. The laterals and spurs must be annually well shortened in, and the current season's growth should be cut back every year; otherwise the fruit will be too small and practically worthless. Leonard Coates.

Morgan Hill.

A Challenge on Peach Trees.

I. H. Thomas of the Redbanks orchard, Visalia, tells about a 19-months-old peach tree of the Admiral Dewey variety growing in that orchard that probably holds the record for rapid growth.

Mr. Thomas, as is well known, has had much experience in growing peach trees and he says that the tree referred to is the largest for its age that he has ever seen. The tree was planted a year ago last March, being 19 months old now. It is 11¼ inches in circumference and branches 2 feet from the ground, each of the four branches being 7 inches in circumference. The height of the tree is 12 feet and the spread of its branches is 10 feet. Mr. Thomas states that the tree is planted alongside of a cemented ditch in which there is a crack which allows the water to escape with the result that the tree has been better irrigated than the other trees in the orchard, which fact he thinks accounts for its rapid growth. There are many trees of the same age in the orchard that are 7 inches in diameter and the foliage on them is still a dark green, showing that they are still growing.

The Admiral Dewey peach is a new variety introduced here in the past two years. It is a freestone and bears early. Mr. Thomas states that the trees of this variety in the Redbanks orchard will bear next May.

FORESTRY.

Selling Timber From Forest Reserves.

The new rules for the national forest reserves, announced by the Secretary of Agriculture on July 1, were made to give freer use of the reserves to the residents of the States in which they are situated. Experience has already shown that they are welcomed.

The West understands what this means better than does the East. From the first the East has believed in the reserves and declared that there could not be too many of them; but in the West the first effect of their proclamation was widespread alarm. It was feared that the reserves would check the development of the region, would burden neighboring communities with taxes, and would prevent the taking for local needs of the timber which lay close at hand. Both in the East and in the West the wrong idea prevailed that a reserved forest was not for use.

A forest reserve is meant to yield up its wealth, as a farm does, or a stream which turns the wheels of many mills. In the long run it should both guard and increase the resources of the country in which it lies.

The mere creation of forest reserves, without provision for their administration, was therefore both ineffectual and annoying to local interests dependent upon their resources. Consequently the Secretary of the Interior, in 1896, requested the National Academy of Sciences to recommend a national forest policy. This resulted in the passage of the act of June 4, 1897, under which, with several subsequent amendments, forest reserves are now administered.

On the theory that the management of land, not of forests, was chiefly involved, this law gave the Secretary of the Interior authority over the reserves, and provided that their surveying, mapping and general classification should be done by the United States Geological Survey, and the execution of administrative work by the General Land Office.

The result was not satisfactory. The technical and complex problems arising from the necessary use of forest and range soon demanded the introduction of scientific methods and a technically trained force, which could not be provided under the existing system. The advice and services of the Bureau of Forestry were found necessary, but, under the law, could be but imperfectly utilized. The necessity of consolidating the various branches of Government forest work became apparent and was urged upon Congress by the President and all the executive officers concerned. Finally, the act of February 1, 1905, transferred to the Secretary of Agriculture entire jurisdiction over the forest reserves except in matters of surveying and passage of title.

Scientific forestry means wise use—not the locking up of forest wealth, but putting it to profit under well known laws which control the right utilization of the forest. It is just because a second crop is desirable that the first crop calls for the forester's ax, and the forester's skill is again needed in the reservation of seed trees and, above all, in protection from fire.

So when the reserves were transferred to the care of the forest service, in the Department of Agriculture, work was at once begun to bring the forests into larger use, to develop their resources both for the needs of settlers and for the good of the forest itself. The office was moved nearer to the applicant; that is, more authority was given to the forest officers on the reserves, so that settlers entitled to the free use of timber, as well as those wishing to purchase timber in small quantities, might be served on the spot, without delay. Whenever timber is wanted on a larger scale, experts are assigned to report on the advisability of a sale, and where large transactions are in due course completed, the timber is removed under contracts which provide for a second crop by fixing a diameter limit, by careful logging methods, and by burning the slash to prevent fires. Twenty-two forest assistants, assigned as technical assistants to forest supervisors, are at present engaged in the making of working plans. Forest inspectors inspect and report upon all the work done on the reserves.

Besides these technically trained foresters there are also employed forest supervisors, rangers, and guards. To these men is given general administration and care of the reserves. They must know their regions, be familiar with local conditions, and combine good sense, independence, and the physical, mental, and moral qualities which make good woodsmen.

The Secretary of Agriculture has, under the law, discretion to allow or refuse free use of forest reserve timber and stone by "bona fide settlers, miners, residents and prospectors." This free use is intended merely to provide for the immediate needs of the individual himself, not to permit him to cut timber for sale to others. Free use is expressly refused to sawmill proprietors, owners of large establishments or commercial enterprises, and companies and corporations. The free-use privilege is also refused to any trespasser.

Under the present scheme of administration all timber on forest reserves which can be cut safely and for which there is actual need is for sale. Applications to purchase are invited. Green timber may be sold except where its removal makes a second crop doubtful, reduces the timber supply below the point of safety, or injures the streams. All dead timber is for sale.

There are three classes of timber sales. Setting aside California, where every sale of any class of timber must be advertised for sixty days, the classes are briefly these: The first includes dead timber worth not more than $20, on application to a forest ranger or a deputy forest ranger; the second, dead and living timber, worth not more than $100, for which the forest supervisor's approval must be secured; and the third, timber worth more than $100, which must be advertised, and can, as a rule, be approved only by a forester. All timber must be paid for, in full or in installments, before it is cut.

The local officers of the reserves receive all applications for permission to cut, and grant permission for small amounts, but they receive none of the money paid for timber or for any other use of the reserves. No one but the special fiscal agent of the forest service, in Washington, D. C., is authorized to receive any payments whatsoever. The regulations promulgated by the Secretary of Agriculture specify that:

"All money, whether payments, deposits, or settlements, must be sent direct to the special fiscal agent and not transmitted through a forest officer. Money must always be sent by postal money order, express money order, or national-bank draft on New York. Other forms of drafts, cash, checks or certified checks will not be accepted."

Concerning Forest Fires.

Forest fires are almost always unnecessary. They usually result from failure to realize that carelessness will be followed by injury and distress to others. The resident or traveler in forest regions who takes every precaution not to let fire escape, and who is active in extinguishing fires which he discovers, contributes directly to the development and wealth of the country and to the personal profit and safety of himself and neighbors. He who does not, assumes a great responsibility by endangering not only his own welfare, but that of countless others.

Care with small fires is the best preventive of large ones. The following simple rules may easily be observed by all:

1. Never drop burning matches or tobacco where there is anything to catch fire.
2. Camp fires should be as small as will serve.
3. Fire should not be built in leaves, rotton wood, or other places where it is likely to spread.
4. Fire should not be built against large or hollow logs, where it is difficult to be sure that it is completely out.
5. In windy weather and in dangerous places, camp fires should be confined in holes, or by clearing all vegetable matter from the ground around them.
6. A fire should never be left, even for a short time, before it is completely extinguished.
7. Except as specifically permitted by law for logging redwood or back firing, fire or explosives should not be used to clear land during the dry season without permission from an authorized fire warden.
8. No engines or boilers using fuel other than oil should be operated near forest, brush or grass lands, unless provided with spark arresters and firebox protectors.

The last three of the above rules are law in some States and their infraction directly punishable. Failure to observe the others would be considered willful negligence, should the fire escape and spread.

Any person discovering a fire too large to be put out at once should immediately seek help in the vicinity and, if necessary, notify the nearest fire warden. If no fire warden is available, the local justice of the peace, constable, or road overseer should be called upon. All of these officers are authorized to call upon able-bodied citizens for assistance. Failure upon the part of any person who allows a fire to get beyond his control to take every practicable step to secure assistance is considered willful negligence.

The best tools for fighting fire are the shovel, mattock and ax.

If possible, a fire should be stopped or checked by plowing, trenching, or the use of earth; but if this is impracticable, back firing may be resorted to. The use of back fires is attended by danger of useless burning and loss of control, therefore they should never be set by inexperienced persons except in great emergencies. If a fire warden can be reached in time, such measures should be left to his judgment; if not, and the fire is large, an experienced leader should be chosen to direct the work and his directions followed, so that there may be no loss through unorganized effort.

Back fires should always be set from a road, stream, cleared space, or natural fire line. Since fire rushes up hill, is checked by air currents at the crest, and usually works down hill slowly, it should be attacked from the top of a ridge if possible. If it is burning down hill, endeavor to meet it before it reaches the bottom. If it is working up hill rapidly, it seldom pays to try to stop it before it approaches the top. The night or early morning hours are the best time to work, when any choice exists, for nearly all forest fires die down more or less at night and spring up during the heat of the day. Never trust a fire which is smoldering or "under control." Continue work until it is out, if possible. If not, watch it closely for fear wind or drying weather will cause it to break out again. Protect valuable timber rather than brush or waste. Young trees suffer more from fire than old ones.

A surface fire in open woods may not seriously injure old growth, but it destroys reproduction by killing the seedlings. Dry sand or earth thrown on a fire is usually as effective as water and easier to get. With a large fire in the vicinity, do not allow yourself and your neighbors to stay at home watching your fences and buildings when organized effort will put the fire out and save not only your property but that of others. Here, more than anywhere else, "In unity there is strength." A little thinking often saves work and makes it successful. Haste and excitement rarely lead to success.

THE IRRIGATOR.

Amounts of Water for Different Crops.

Mr. J. B. Neff of Anaheim draws from his experience and observations some very interesting conclusions for the California Cultivator as follows:

The duty of water is usually defined as being the amount of water necessary to produce a crop, and varies according to the kind of crop and the soil, as well as the climatic conditions.

The unit of measure for reservoirs is the cubic foot, but this is too small for convenient use, and the acre foot—or quantity which will cover an acre one foot deep, is more generally used for large bodies of water. The term "acre foot" is to be preferred, as it bears a direct relation to areas to be covered with water. The time unit is usually one second, and flowing water is measured by "second feet" or the number of cubic feet passing a given point in one second of time. Measurement is frequently expressed in miner's inches, but a miner's inch is a variable quantity, though 50 miner's inches for 24 hours will equal two "acre feet;" 100 miner's inches will cover one acre 2 inches deep in one hour.

Experiments have been made to determine the amount of water necessary to produce crops of different kinds. Among the most important of these are the experiments of Prof. King, of Wisconsin, who has found that it requires from 300 to 500 pounds of water to produce a pound of dry material. That is, to produce a ton of hay it is necessary to have from 300 to 500 tons of water, which must be supplied by rain or irrigation. Enough water to cover an acre 1 inch deep will weigh about 113 tons, so that if one ton of hay is to be grown on an acre there must be from 3 to 5 inches of water applied at the proper time. The amount used is often largely in excess of this, as rains do not always come at the time nor in the quantity that will do the most good. The amount of water to be used varies with the kind of crop that is being grown; thus the water required to produce one cutting of alfalfa hay on one acre will be sufficient to produce a crop of corn on five acres. When it is considered that from four to six crops of alfalfa are taken from the same land every year it will be seen that a large supply of water must be at hand to grow alfalfa successfully. The quality of the soil being sandy loam and the climate being that of the southern coast counties, with 15 inches of rainfall, it may be said that corn will require, in rain and irrigating water, 20 inches to produce a crop; a walnut orchard with trees 12 to 18 years old will need 25 inches, an orange orchard in full bearing should have 30 inches; and an alfalfa field will not do well on less than 60 inches for the season. The amount necessary on cultivated orchards will be greater or less in accordance with the amount of cultivation they receive; the better cultivation the less water will be needed.

Soils that are sandy will require more water, but where there is danger of leaching, the water should be applied in smaller quantities and oftener, while the heavier soils that are more retentive will need less water and it can be applied at longer intervals.

Very dry climates require more water and in some of the Arizona valleys where crops with shallow roots are grown, it is necessary to run water on the ground every eight to twelve days.

It is best to begin the season with the ground thoroughly wet, and if the rainfall should be insufficient the irrigation should be done before the weather becomes hot, so as to avoid excessive evaporation. The depth of water required to soak the soil varies, but it has been found that 1 inch of water will saturate dry soil about 3 inches deep, though moisture will in a few days reach several inches farther and give the ground the appearance of being wet when it is very much below the point of saturation and would retain considerable additional moisture.

When the ground is first irrigated large quantities

of water are sometimes needed to saturate and settle the subsoil. This settling of the subsoil is sometimes so great that it is necessary to go over the tract and regrade it. The writer remembers one particular tract which, when irrigated for the first time, was so uneven that there were places where it was not possible to drive a buggy across.

The early irrigators used water wastefully in most cases, but as the country becomes more thickly settled and water becomes more valuable, better methods are brought into use and the duty of the water becomes much higher.

THE FIELD.

The Cauliflower.

Some one has described the cauliflower as "a cabbage which had been to college." It is certainly a high bred member of the cabbage family and is more difficult to content with its surroundings and culture. An interesting article in an exchange discusses the commercial production of the vegetable and its seed; and although the writer does not give California credit enough with cauliflower growing, the sketch is otherwise very interesting.

Historical.—Just where the cauliflower came from nobody seems to know. The ancient Greeks and Romans cultivated it, in the island of Cyprus, and on the shores of the Mediterranean it was produced long before the Christian era, and probably called by some high sounding, polysyllabic name. But we cannot get back to its origin. The plant is a close cousin of our common cabbage, and on account of its ancient lineage probably ashamed of the fact, looking upon its less aristocratic relative of the garden condescendingly—and with good cause surely, for the cabbage is merely a vegetable, while the cauliflower is a flower.

In England.—The cauliflower seems to have bloomed unseen during the dark ages, for though heads were falling right and left, we find no mention of it. Then, in the seventeenth century, its cultivation began in England. The fact is recorded that "many heads of cauliflower" were exported to Holland previous to the French revolution. History shows the Dutch were fond of foreign grown heads.

From its beginning in the British Isles the growth of the cauliflower spread rapidly to the continent, and to-day we find its cultivation the pursuit of numberless small truck gardeners throughout Europe. The delicacy of the flavor of the flower—or vegetable, if you are a materialist—creates a tremendous demand for it in the larger cities. In England, and even on some of the outlying islands, many a truck gardener earns a good living from the production of cauliflower for the large London markets. Thousands and thousands of crates are shipped to London annually, each head wrapped in a separate piece of tissue paper, as becomes its delicacy as a bloom.

England got the start of the other countries in the production of the cauliflower, and the seed of the English variety has been until recently far and away the most popular all over Europe and in this country, too, for the necessary annual planting. But history again denies us any information as to the early progress of cauliflower in the United States. The cabbage, its uncouth, plebeian cousin, came into early prominence on the stage; the cauliflower has, however, until of late years, remained modestly in the background. Its cultivation in this country at first amounted to little; a few farmers here and there produced for the markets, but there was no general production.

The Commercial Product.—Even now there are cities, big cities, in the middle west and south, where the cauliflower is practically unknown. Though in the neighborhood of many large cities, such as Chicago, Boston and San Francisco, there are extensive truck farms on which cauliflower is grown for home consumption, there are but two distinct "cauliflower districts" in the United States where the vegetable is extensively grown and shipped to distant markets. These, curiously enough, are more than 2500 miles apart, one along the rich soiled borders of Puget sound, near the Pacific, and the other in the low lying farm country in the northeasterly portion of Long Island, within view of the blue waters of the Atlantic.

Flourishes on Puget Sound.—In the Puget sound district the cauliflower has flourished since the railroads have opened up the territory and developed its advantages as a truck garden district. Carloads of cauliflower are now shipped daily to points along the Pacific coast and towns to the eastward. Still more remarkable, though, is the cauliflower growing district on northeastern Long Island—a strip of country 4 miles wide and about 30 miles long, extending from the little dip in the land called Baiting Hollow to where the hustling little town of Greenport lies between Long Island sound and the waters of its own deep harbor.

On Long Island.—This is probably the busiest and most prosperous truck farming area in the country. An evidence of its prosperity is the fact that it has two savings banks with deposits of over $5,000,000 each and three other State or national banks with accounts of from $200,000 to $500,000. The farmers are not at all like the unprosperous, struggling agriculturists of the old types. They are up-to-date persons who make a business of farming and find it a good business. Some of them ride about the smooth Long Island roads in their own automobiles. They have a private telephone system with 325 subscribers and a capitalization of $200,000. One can drive through the district from end to end without finding a single farm that has been allowed to run down and go to seed.

Last year the cauliflower crop in this section amounted to about 180,000 barrels, and this year, according to the best estimates, it may come close to 190,000 barrels, or, in round figures, 5,700,000 heads. A barrel holds from twenty-five to forty heads, according to whether the cauliflower is cut "long" or "short," the length, of course, referring to the leaves. The object of allowing the leaves to remain long is that it preserves the flower. The farmer receives from $1 to $1.25 a barrel for the "long cut" and 50 cents more for the "short cut," though at certain times in the season the "short cut" brings as much as $3 a barrel.

Consumption. — The Long Island cauliflower is shipped as far west as Minneapolis and as far south as New Orleans, and for the past few years the market has been steadily growing. The metropolis, with its millions of hungry mouths always crying to the country for more food to devour, is only about 70 miles away from this section by the Long Island Railroad and affords an easy market for all garden crops. New York City demands about 5000 barrels a day, in season, or about 150,000 heads. The hotels alone are great consumers, one hotel requiring 120 heads a day.

It was about thirty years ago that one of the farmers in the district began to cultivate cauliflower. He found a ready market for it in the city, though at that time it was little known as an edible. The other farmers observed that unusual prosperity was smiling on their neighbor, and soon they began to plant cauliflower, until at the present time there are about 3000 acres of blue-leaved fields every year. This acreage would be greatly increased were it not for the fact that cauliflower absorbs all the resources of the soil, and can not, as a rule, be grown with success in the same field in successive years.

Association.—A few years ago most of the farmers formed themselves into a cauliflower association. By doing so they found that they could ship their product in carload lots and make a corresponding saving in freight charges. Now they load the cars themselves and their agents in New York see to the unloading, and all the railroad has to do is haul them. The association also purchases farm supplies for its members in bulk, thereby making a great saving. One illustration of the advantage of the association is in the matter of seed. Cauliflower seed is not produced in this country, save at Puget Sound, and the Long Island farmers have paid as much as $8 an ounce for it. The association imports the seed from Ehrfurt, Germany, and has succeeded in reducing the price in a few years from $32 to $20 a pound. An ounce will produce about 1500 plants and the association purchases about 150 pounds a year.

Set Out by Machines.—The plants are set out by little hand machines between July 15 and August 1. Soon after the "head" appears, the long, blue leaves are tied up about it, to keep it white and prevent it from being sunburned, and thus the cauliflower stands, like a child with the mumps, until it is cut for shipment. The farmers begin to ship soon after August sets in and continue until Thanksgiving.

Investigation of the returns from cauliflower growing explains how the farmers became opulent enough to own automobiles. August Lewin of Baiting Hollow, one of the cauliflower pioneers, last year had twelve acres of cauliflower, from which he realized a net profit of $300 an acre. E. E. Prince, another farmer, made $425 clear from an acre and a quarter set out in cauliflower—a sum considerably above the price of the land. These are large returns. And, of course, the farmers have other paying crops. The potato acreage of the section is four times the cauliflower acreage, and it is the greatest potato district in the country.

Ferret Keeping.

To the Editor:—I intended giving full instructions in this article for breeding ferrets, but, having received numerous enquiries regarding their keeping and management, I thought it best to give some details as to the manner of keeping them.

One lady asks if they have to be chained up. Another wants to know if I can guarantee they won't eat up the entire poultry ranch, etc. To begin with, I will say that ferrets are kept in much the same way as you would keep rabbits or Belgian hares. It, of course, depends upon how many you wish to keep as to the method of housing them. If you wish to keep only a few, or a pair, a box about 3x4 feet will do for them. Make a lath or wire cover for this box and keep it in dry quarters. Keep 2 or 3 inches of clay or dry earth in the box, and give them clean straw for bedding. One pair will clear any ordinary sized place of rats, and will keep them away from your chickens or poultry houses, barns or grain warehouses. But if you wish to keep a number for breeding purposes, you will require a building which should be divided into pens. The barn or shed should be well ventilated. Make a solid floor of dry clay or earth and partition your pens with planed boards, 44 inches high, mailed up endwise to prevent the ferrets from climbing out. You can keep them on board floors if you wish, but most people know that if rabbits are kept in this way the boards become saturated with moisture and soon smell bad. It is much easier to keep them clean and sweet on a clay or earth floor. The clay or earth absorbs the moisture which, when foul or sour, can be removed and fresh earth put in its place. If board floors are used you should have 3 or 4 inches of earth upon them and give them clean straw for bedding. They should, of course, be kept in their pens or hutches at all times excepting when you wish to work them. The method of working them on rats or squirrels and of hunting rabbits with them will be given in a future article. My next article will be on breeding ferrets.

958 Pine street, San Francisco. W. Styan.

It is sometimes said that a banker to whom a customer has paid in moneys for his current account is a trustee of such moneys, but this is a mistake. The true relation between a banker and his customer is that of debtor and creditor only, with an obligation on the part of the banker to discharge the debt in a particular manner. So clearly is this the case that if, after paying money into the hands of a cashier to the credit of his account, which is not overdrawn, the customer should suddenly suspect the solvency of the bank, he cannot withdraw it except by check. In the same way, the moment a bank clerk in cashing a check has placed notes or money in the control of the person presenting the check there is actual delivery and possession, and he cannot take them back. Should a customer overdraw his account the bank is not bound to offer the sum really due him, but can rightly refuse to honor the check. When a check is indorsed the indorsee can bring an action against the drawer, just as the indorsee of a bill can sue the acceptor. A check is not an assignment of any portion of a debt due from a banker to his customer, but simply a request with which the banker has promised to comply. Should the latter fail to meet his engagement to pay, all things being in order, the customer can bring an action against him and, although no actual loss has been sustained, will be entitled to nominal damages, as the obligation of a banker to honor his customers' checks rests upon a clear and distinct promise or agreement to that effect, which arises from the course of business and the nature of the transaction. There can be an indorsement in blank or a special indorsement of a check. The post-dating of a check drawn to bearer, or order, in no wise affects its validity, and a person taking it bona fide and for value has a perfectly good title. Every banker who honestly pays a check drawn upon himself is entitled to charge the sum he so pays to the account of his customer, although the signature of the payee or indorser has been forged. A banker is bound to know the signature of his customer, and therefore, if he pays a check bearing the latter's forged signature, he cannot charge the customers' account with the sum so paid. And if the amount payable on a check has been fraudulently altered, the banker who pays it can only recover from his customer the sum for which it was originally drawn. But when there is evidence that the gross negligence of the drawer clearly afforded opportunity for the alteration of the check, the customer may have to bear the loss himself if there has been no want of care on the part of the banker in cashing the check.

The California oil holes are not "drilled down into a lake of oil." The oil is in the sand; the hole is drilled down to and through this stratum of oil sand. This stratum may be 1 foot or 100 feet thick. The oil under internal pressure seeps through inch holes in the casing surrounding the perpendicular hole driven through the sand and is pumped to the surface; if there be gas enough the oil will be forced to the top of the well without pumping. About 25% of the sand is oil in a good district. An acre of good area with an oil sand 100 feet thick ought to yield about 150,000 barrels. One well will not ordinarily drain more than an acre of oil land. The local custom is to sink wells 100 feet inside one's boundary.

The "market for burros" in any particular locality is a matter upon which no exact information can be given. On general principles, it may be assumed that in a district where much prospecting is in progress there would be a demand for these useful animals, particularly on the desert, where they can subsist on less than almost any other beast of burden. Southern Nevada should afford at present a good field for the burro stockman.

Approximately, handling earth with pick and shovel would cost about as follows: Excavating and loading in a wagon, 54 cents per cubic yard for hardpan; 37 cents per cubic yard for tough clay; 20 cents per cubic yard for ordinary clay, gravel or loam, and 16 cents per cubic yard for very light sandy soil; this is reckoned on the basis of 20 cents per hour for wages.

California crude oil makes a good road with almost all kinds of soils, because it contains an asphalt base. On the other hand, Pennsylvania and other oils containing a paraffine base have proven unsatisfactory in road sprinkling.

The cost of wagon transportation over good roads is usually figured at 25 cents per ton per mile, though in some instances the cost is less than this amount, and in others much more.

Agricultural Review.

Butte.

LARGE AND EARLY CROP OF ORANGES.—Oroville special to Sacramento Bee, Oct. 20: Dr. H. J. Hepburn, president of the newly organized Butte County Citrus Association, gives out the statement that the local orange crop this season is the most promising one in several years, and there is every indication that the fruit will be in a condition to market earlier than usual. It is confidently expected that picking and packing will begin by Nov. 1. Elaborate preparations have been made for handling the crop, and packing can begin at any time the crop is in readiness.

Fresno.

CUT OF 1 CENT ON ALL RAISINS.—Fresno dispatch to Chronicle, Oct. 24: The directors of the Central California Raisin Growers' Co. were in session discussing a proposition put to them by the packers. The packers and some of the officials of the company demanded that the price of raisins be lowered in order to get rid of some of the goods that have accumulated. It was finally decided to reduce the price 1 cent on all raisins.

Lake.

LATE BEAN CROP.—Sacramento Union, Oct. 23: Those people whose homes are in the new reclamation district below Freeport feel that they have been specially favored by Providence this season. Last summer after they had succeeded in pumping all of the water out of the district, it had become quite late in the season for planting. For this reason fears were entertained as to whether they would be able to get their crops in early enough to give them time to ripen this fall or not. The people were fully awake to the situation, however, and by rushing their work nearly all the land in the district was planted. The crop that was planted consisted principally of beans of several different varieties. These beans, almost without exception, grew finely and made splendid crops. This crop of beans is now practically all harvested, and still no early rains.

Los Angeles.

LARGE GRAIN CROP.—Pomona Progress, Oct. 19: Wheat and barley threshing is about completed in the San Jacinto grain district. The crop was large, hundreds of thousands of sacks of grain being threshed in the last few weeks. In the Yucaipe valley there has been one of the best seasons known in several years, considerably over 100,000 sacks, while in the Moreno, Perris and Allessandro valleys the output has greatly exceeded those figures. The total estimate runs into almost half a million sacks. Some of the barley has run 120 pounds to the sack. Estimated returns to ranchers are more than $1,000,000.

Mendocino.

WOOL BRINGS GOOD PRICE.—Dispatch-Democrat, Oct. 20: This has been a busy week with the wool men. Fully eighty growers were in town during the week trying to get the top notch for the fall clip. Quite a few buyers were present and an active scene was presented. The bulk of the wool sold for 18 cents, some choice lots bringing as high as 18½ cents. Some of the exceedingly heavy wool only brought 16½ cents. There were stored in Lucas Bros. warehouse 181,036 pounds of wool, which will give some idea of the output of the county. This is not all the wool raised in the county. Hopland and southern Anderson goes to Cloverdale, while a great deal of northern Mendocino goes out to the coast. Some of the wool stored here was from Lake county. The total fall clip in the county is estimated at 250,000 pounds, which means $45,000 at 18 cents per pound.

TREE CONTINUES TO GROW AFTER BEING CUT DOWN.—Chronicte, Oct. 24: A redwood tree that refuses to die even after it had been cut down is a phenomenon that has been discovered by Frank Brown of Philo on his timber claim. In selecting a tree for cutting into shakes a few months ago he felled a monarch of the forest that was over 200 feet tall and 8 feet at the base. On returning to the tree recently to put his shingle crew to work, he was surprised to see several fresh limbs. Investigation proved that the limbs were really small trees that were growing out of the monster trunk, and besides those that had already attained considerable growth there were a number of others that were just peeping through the bark. Another peculiarity about the tree is that shingles cut from the tree have no sap in them and are as light as the thoroughly seasoned product. This is the first case on record where redwood completely severed from a stump has commenced a new growth, and the problem is a puzzler to old woodsmen. The tree yielded about 30,000 shakes.

Monterey.

POTATOES SHOW WORMS.—Watsonville Pajaronian: The late potato growers in this valley would welcome a good rain now, as it would save their potatoes from the ravages of worms, which are getting very numerous, especially in the heavy black lands. There is a very good crop of late spuds in this valley, so far as quantity is concerned, but the worms are giving growers no little worry.

Placer.

LINCOLN SHIPS ORANGES. — Sacramento Union, Oct. 24: The second shipment of ripe Navel oranges from the Valle Vista orchards near Lincoln was made yesterday, the first lot having been shipped on the 16th inst., and being in reality the first shipment of ripe oranges from Placer county this season. The fruit was fully developed and colored, and gives western Placer the honor of marketing the first ripe oranges of the year. The Valle Vista groves are among the most beautiful and productive in northern California, and their yield this year will be unusually large and their fruit of superior quality throughout. I. E. Thayer, a San Francisco capitalist, is the owner of them, and he takes great pride and interest in the care of the orchards and in the beautifying of his place and its surroundings. Carl E. Tyler, a fruit grower of long and varied experience, is the foreman of the groves, and besides their management in every detail, he has full charge of the marketing of the crop, and he is naturally highly elated over the fact of the Valle Vista orchards producing in shipping quantities the first ripe Navel oranges of the season in Placer county, and probably northern California.

Sacramento.

BEAN CROP HARVESTED.—Sacramento Union, Oct. 22: At Vorden, on account of the exceptionally fine weather, nearly everybody has finished threshing their beans. A. Angelo and his crew of fifty men, who have been working for the past few weeks with their large bean thresher, have completed their last contract. There are only a few small lots, which will be threshed by hand. The landing at Vorden is piled with beans awaiting shipment.

SHIPPED SEASON'S ASPARAGUS. — The California Fruit Canning Association cannery at Vorden has shipped out the entire pack of asparagus for the season, and they are now making the necessary repairs and putting a fresh coat of paint on all the buildings, in anticipation of a busy season next year.

San Bernardino.

ESTIMATE OF ORANGE CROP. — San Bernardino Sun, Oct. 19: The Southern Pacific and Santa Fe railroads have completed their estimates on the orange crop in southern California, and from the railroad figures thus far at hand the crop the coming season, commencing Nov. 1, will be 30,000 cars in the seven southern counties of California, or practically the same as last year's crop. Shipments of the season of 1904-5, just now drawing to a close, will amount to nearly 30,000 cars. The report of competent judges, who have been making up the estimates for the railroads, states that the old orchards will not produce quite as heavy this year as last; but the new orchards coming into bearing and the increased size of the trees will, in their estimation, bring the total up to about the same figure as last year. The Southern Pacific has made an estimate of the crop for San Bernardino and Riverside counties, placing the figures at 16,900 cars, which is practically the same as the season just now drawing to a close.

San Joaquin.

WOODBRIDGE WINERY.—Lodi Sentinel, Oc. 19: The rush season at the new winery of the Woodbridge Vineyard Association at Woodbridge is over, but grapes will continue to come in for the next two weeks. So far the winery has handled over 3000 tons of grapes, and this made nearly half a million gallons of wine. The storing capacity of the plant has been overtaxed, and last week a 30,000-gallon tank was put up. This, however, did not relieve the situation fully, and now a 50,000-gallon tank is being built. Only dry wines are being manufactured at Woodbridge this season. They are of the claret and Burgher varieties. The wine is allowed to ferment until all the sugar contained in it is changed to alcohol. With sweet wine varieties the fermenting process continues until 4% or 5% sugar remains in it, then to stop fermentation the wine is fortified with brandy. M. DeBonnett is in charge of the Woodbridge plant.

PROFIT IN SWEET POTATOES.—Lodi Sentinel, Oct. 19: J. P. Watkins, who recently came to Lodi from Georgia, has demonstrated that sweet potato growing in northern San Joaquin can be made successful, for this year, from one acre, he realized $180. The bulk of the crop was sold to the Beckman, Welch & Thompson Co. He states that the growing of sweet potatoes requires but little cultivation, but that they must be irrigated. They are set out from slips. The potatoes are uniform in size, smooth-skinned and of a very good quality.

Santa Barbara.

SANTA BARBARA CHESTNUTS.—Santa Barbara News: A new industry has been started on the George Edwards ranch, in the Goleta valley—that of raising chestnuts for the local market. Hitherto the large quantities of chestnuts used here have come from Eastern orchards, or from the Ellwood Cooper rancho, where a few trees are bearing. At the Edwards rancho, however, Foreman John Throop has a large number of trees and recently brought to market their first yield. About 100 pounds of nuts were sold to the stores a few days ago by Mr. Throop and more will be brought in later. Chestnuts are bringing in 15 cents a pound.

Sonoma.

WINERY SAID TO BE POLLUTING RUSSIAN RIVER.—Santa Rosa Republican, Oct. 20: The French-American Wine Co. of Healdsburg is charged with polluting the waters of Russian river with refuse from their winery, which is detrimental to fish life. A complaint was sworn to Tuesday by Deputy Game Warden A. F. Lea, and to this the company's representative will have to answer before Justice A. B. Provines.

GLEN ELLEN VINTAGE.—Press-Democrat, Oct. 21: The amount of wine made at Glen Ellen this season is as follows: Joshua Chauvet, 100,000 gallons; Frank Lemoine, 50,000 gallons; Schieck Bros., 20,000 gallons; Bihler Bros., 10,000 gallons; Leo Justi, 500 gallons.

WINE MAKING AT CLOVERDALE.—Press-Democrat, Oct. 24: Superintendent John B. Cooley of the large Asti Colony's winery at Cloverdale states that grape crushing is over there. About 100,000 gallons of wine were made this season.

Tehama.

GOOD PRICES FOR TURKEYS.—Corning special to Sacramento Bee, Oct. 18: Turkey buyers are already in the field endeavoring to contract for the birds delivered in town at 23 cents a pound. This is something new to the growers, as heretofore the cash offers were either very low or the shipper was compelled to ship on consignment and trust to the honesty of the commission man for a square deal. This place usually ships more turkeys than any other section of the Pacific coast. The grasshopper invasion this year, however, caused a great number of birds to die from eating excessively of the insects, and the yield will fall short.

PLANT HOPS.—Tehama special to Sacramento Bee, Oct. 18: Because of the success which has followed the planting of a tract of 120 acres of hops at Bohemia, several farmers who own good hop land will, during the wet season, plant a portion of their lands to the plant.

Ventura.

BEAN THRESHING NEARLY COMPLETED.—Oxnard Courier, Oct. 20: Bean threshing continues uninterruptedly throughout the valley and it is expected that but few fields will remain unthreshed by the end of the coming week. All the machines that began working in the upper end of the valley some three weeks ago have been gradually working coastward.



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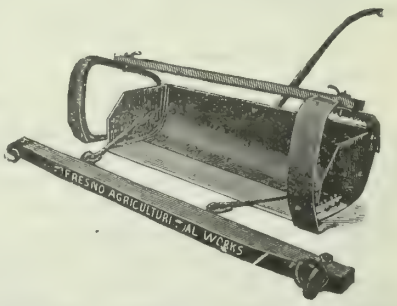
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Afton Waters.

Flow gently, sweet Afton, among thy green braes,
Flow gently, I'll sing thee a song in thy praise;
My Mary's asleep by thy murmuring stream,
Flow gently, sweet Afton, disturb not her dream!

Thou stock-dove whose echo resounds through the glen,
Ye wild whistling blackbirds in yon thorny den,
Thou green-crested lapwing, thy screaming forbear,
I charge you disturb not my slumbering fair!

How lofty, sweet Afton, thy neighboring hills,
Far marked with the courses of clear winding rills;
There daily I wander as noon rises high,
My flocks and my Mary's sweet cot in my eye.

How pleasant thy banks and green valleys below;
Where wild in the woodlands the primroses blow;
There oft as mild Evening weeps over the lea,
The sweet-scented birk shades my Mary and me.

Thy crystal stream, Afton, how lovely it glides,
And winds by the cot where my Mary resides;
How wanton thy waters her snowy feet lave,
As, gathering sweet flowerets, she stems thy clear wave!

Flow gently, sweet Afton, among thy green braes,
Flow gently, sweet river, the theme of my lays;
My Mary's asleep by thy murmuring stream,
Flow gently, sweet Afton, disturb not her dream! —Robert Burns.

Morgan's Investigation.

The train was about to start, and the young man who had just arisen from the seat beside a young woman in the day coach was turning away when a tall young man came up the aisle.

"Why, it's Morgan!" cried the first young man with a quick hand clasp. "How's Jim? Here," he quickly added, "take this seat and entertain my cousin the best you know how. Miss Ellington, Mr. Morgan. Goodby." And he hustled out just as the train began to move.

"Rather unceremonious," laughed Morgan, as he paused beside the seat and looked inquiringly at the girl.

"It's Arthur's way," she smilingly said. "Won't you sit down?"

And Morgan, as he bowed and took the seat, noted that this was a remarkably attractive girl.

"I haven't seen Arthur before for a year or two," he said. "We were in college together and great chums, but as usual drifted apart. What is he doing now?"

"Just now he is threatening to settle down," said the girl. "An indulgent mother has made life very pleasant for him since he came out of college. He has been abroad, you know, and out to California, and down to Florida, and he has his shooting in the Adirondacks, and his automobile trips, and—well, his time has been quite taken up."

James Morgan shook his head.

"I don't like that," he said. "Arthur has good stuff in him. At least, I always thought so. Besides, I don't like the idea of his taking these favors from a woman."

"Not even from his mother?"

"No. The principle is the same. I can understand that a rich father might want to broaden his son's views by travel and by association with widely differing classes of humanity, but with a rich mother it would simply be a desire to pamper and please. Besides, I don't believe that true men accept favors from women."

The girl beside him smilingly opened her eyes.

"That's rather old-fashioned, isn't it?" she asked. "This is the twentieth century, you know. The world, or at least our part of it, seems to think that woman is quite on an equality with man in most respects, and that in financial and business matters the question of sex does not enter at all."

"I know," he said. "And I admit that I am old-fashioned about it. But it grates sadly on my ideas of chivalry to know that a man is under obligations to a woman for his daily bread, or even for his salary. That sounds a little preachy, doesn't it?" And he laughed as he caught the girl's amused look.

"And you think it would be quite too humiliating for a man to accept employment from a woman?"

"That's the way I look at it," laughed Morgan.

"Perhaps you have had some unpleasant experience that has prejudiced you?" the girl suggested.

"No," said Morgan. "The fact is, I know very little about women, I mean modern women. I was a country boy and never saw a city until I went to college. Ours wasn't a co-educational university, and, anyway, I was quite too busy to think of the girls. Since I left college I've been knocking about in out-of-the-way places where women never go. Went to South America to help build a railroad, and a revolution drove us out. Was assistant superintendent of a Montana mine and a consolidation froze us out. Was foreman of the Acme Stamping Company when the treasurer wrecked it. You see, I'm quite a rolling stone, with the usual accumulation of moss. But I fancy my turn will come yet."

"And may I inquire what your next venture is to be?" said the girl. "I'm asking merely to discover what the chances are for your meeting the woman of to-day." She laughed with quite a remarkable display of dimples. "I fancy you'll find her quite an interesting study when you can spare the time."

Morgan turned and looked at her.

"I begin to think so," he said. Then he hastily looked away. "Oh, yes, my next venture? I'm going to Monticello."

"That's not very promising ground."

"It may be from my point of view," said Morgan.

"Then you think of going into business there?"

"It depends on a certain contingency. I am going to inspect a manufacturing property there at the request of several capitalists, who contemplate buying it. If my report is favorable they will take it. If the report isn't favorable I am out of a job again." He laughed. "You see that integrity in business is sometimes put to severe strain."

"But how does it happen that this factory is in the market?" the girl inquired.

"Bad management is the root of the trouble," replied Morgan. "It's a big concern with all the improvements, but there's too much old blood in control. Too many old retainers of the house are still puttering around when they should be pensioned off. From all I can hear it wants an infusion of youthful ginger into its affairs. But how can this interest you?"

"Why, it does," smiled the girl. "I'm acquainted in Monticello and think I know the factory you mean. I am on my way to visit an aunt, who lives at Millington, the next station beyond Monticello. We will not be far apart, and may meet again. I am a little anxious to know how you are impressed."

"Impressed?" repeated Morgan.

"By the factory—and the girls."

Morgan echoed her merry laugh.

"I fancy the first will keep me quite too busy to think of the second."

"And how long do you propose to stay in Monticello?"

"I suppose my work will keep me busy for at least two weeks."

"Then I am quite sure we will meet again. Ah, there's the whistle for Monticello."

She put out her slim hand as Morgan arose, and he murmured something about the pleasure of meeting her, and did it with a clumsiness that must have amused her, and a moment later stood on the platform watching the receding train.

She was a charming girl, there was no doubt of that. He was almost sorry he had met her. It would distract his mind from his business. And how she had drawn him out. Why, he had talked of nothing but himself. He must forget her.

James Morgan settled down to his task with his usual zeal and industry. He visited the factory daily and informed himself concerning every detail. He found things as he expected. Bad management was shown at every turn. It was extravagant management, too, and there was constant friction between the local officers and the headquarters in the distant city. Here was a fine plant rusting out, and rapidly losing its great earning power, and all because of the lack of a progressive head. James Morgan ground his teeth over this abuse of a splendid opportunity and went on preparing his report.

He had been in Monticello a little over a week, and was just leaving the factory one afternoon when a carriage approached. There were two ladies in it, and one of them was bowing. It was Miss Ellington. He returned the salute, and the driver, at a word from the elder lady, drew up to the curb.

"Glad to see you, Mr. Morgan," said the girl as she put out her hand. "Auntie, Mr. Morgan. My aunt, Mrs. Maynard. Auntie has an invitation for you, Mr. Morgan."

"I want to take you home with us and have you stay to dinner," said the elder lady. "We have been waiting for a fine day so that you could enjoy the drive. And we'll promise to send you back safely on the last trolley car."

She was a charming lady with such a winning air that quite before he realized what he was doing Morgan had accepted the invitation. He murmured something about the state of his toilet, and the necessity for going to his hotel, but the old lady pronounced him quite au fait, adding that he need not worry, he was to be the only guest.

And so James Morgan took the seat facing the ladies and began what proved to be a most delightful drive.

"And how fares the investigation?" inquired the girl.

"Along which line?" laughed Morgan.

"You led me to believe that you had time to pursue but one line," said the girl.

"True," said Morgan. "It is the serious line that I have been following up. And it turns out just as I expected. There has been mismanagement and carelessness. It appears that the head of the concern died some time ago and the company's affairs are in new and evidently incompetent hands. Nobody at the factory seems to know much about this, but I fancy it speaks for itself. If an up-to-date hustler had charge of that plant he'd put it on a paying basis inside of three months."

The girl looked at him a little curiously.

"Yourself, for instance?"

Morgan laughed.

"I had myself in view when I spoke," he said. "If I had that plant in charge I'd want full swing. And if I got it I'd guarantee to return the Russell-Bemis Co. 7% on their investment the first year."

He laughed a little as he said this. "I can afford to be egotistical," he added. "It takes a pull to get a place like that."

And there the subject dropped. There were other subjects, however, to take up, and both Miss Ellington and her aunt were delightful talkers, and Morgan told them some of his experiences in the wilds of the two continents, and sometimes about his college life, and the time passed very pleasantly. There was a charming dinner and a pleasant chat in the library, and when Morgan was coming home on the last trolley car he told himself that it had been the most delightful evening he had ever known.

Two days later he received a telegram. It was brief, but to the point:

Deal off. Company will not consider proposition. Send in bill. CULVER.

When Morgan went to pay his hotel bill he found a letter awaiting him. The letter bore the imprint of the Russell-Bemis Co. He hastily tore it open. It was an offer of the superintendency of the Monticello plant, salary and other details to be arranged later. If the place was accepted, he was asked to wire the city office and take charge at once. The letter, couched in strictly business terms, was signed "Phineas Ranney, trustee."

Three days later Morgan was hard at work. The trustee, a shrewd old lawyer, had brought down the contract, the salary was arranged, and Morgan was devoting every energy to put the plant on a paying basis. It was hard work, very hard work, but his toil was lessened by his visits to the home of Miss Ellington's aunt. They had become quite regular visits now, and the more he saw of Edith Ellington the more charming she appeared. She had such a sympathetic way with her, and seemed so interested in his work.

"But why should you exhaust all your energies for people whom you do not know, and who undoubtedly look upon you as a mere machine?" she asked him one day.

He laughed in his boyish way.

"I don't think of them at all," he said. "I am working on honor, you know. My professional reputation is at stake. I've made promises and I mean to carry them out. Besides, I love the work."

And at that the girl gave him such a delightful smile that he remembered it for many days.

He had been in charge of the Russell-Bemis plant for perhaps ten months, when on a certain Sunday afternoon he said, in response to Edith's usual inquiries about the factory, that it would be well for the management to send a good man abroad to enlarge the company's market.

"We can double our output," he said, "and at a very little advance in expenses, and I know the European market is just hungering for our goods." He laughed, "I'd like to go myself for a three months' trip. I could get away as well as not. Everything is running smoothly, and young Fallon is quite competent to carry out my orders."

"And the trip would give you a rest," said Edith Ellington.

"I hadn't thought of that," laughed Morgan. "But I'm quite willing to guarantee again that I will make it a decidedly profitable rest for the company."

On the following Thursday the superintendent received a telegram asking him to report next morning at the company's city office. He found Lawyer Phineas Ranney at his desk and the old man greeted him in his dry and yet not unpleasant way.

"Sit down, Mr. Morgan," he said, "I've just been looking over your last statement. Very good, sir, very good. You've done admirably, sir, admirably." He paused and smiled. "That's a good deal of praise coming from me, sir."

"Thank you," said Morgan, "I tried to live up to my agreement."

"We appreciate it," said the old lawyer, "And we've been thinking it over and have come to the conclusion that it would be a good idea, now that things are running smoothly, to send you over to Europe, say for three months, with the idea of opening up a foreign market for our goods. What do you think of the idea?"

Morgan stared hard at the man.

"It's an excellent idea," he said.

"Very well, then," said the old man. "You can arrange things so as to start about the middle of next month."

"Very well, sir," said Morgan.

The old man looked up at him.

"By the way," he said, "the Russell-Bemis Company would like to meet you in the private office. That's the door—step right in."

Morgan, a little startled at the abrupt announcement, stepped into the apartment indicated and closed the door behind him.

A lady was sitting at the desk. She looked around as he entered.

"Why, Edith—Miss Ellington," Morgan stammered. "This is an unex-

pected pleasure. I was told I would find the Russell–Bemis Company here."

The girl looked up with a roguish smile.

"I am the Russell–Bemis Company," she said.

"You?"

He sank into a chair. He was quite dazed.

"Wh-why didn't you tell me?" he stammered.

"Do you remember that you said, and with considerable unnecessary emphasis, that you would not accept a salary from a woman?"

Morgan slowly nodded.

"Yes," he said, "but I never thought of a woman as an incorporated company.

Edith Ellington laughed merrily.

"Well," she said, "you will understand that I took your remark so seriously that I bound you with a contract before I told you the truth."

Morgan suddenly rose.

"Miss Ellington," he said, "this unexpected revelation may make a great difference in my hopes and my aspirations. I cannot wait for time to tell. I am going to say to you what I had intended to say when courage and a proper sense of my own deserving came to me." He moved a step nearer. "Miss Ellington—Edith, will you be my wife?"

There was a soft flush on the fair face that was upturned to him, but the clear eyes showed no traces of surprise.

"But your duties — your trip abroad?" she softly said.

He came still closer.

"We will make it our wedding journey," he said.

A sunny smile played across the upturned face.

"The Russell–Bemis Company takes Superintendent Morgan's suggestions under advisement," she gravely said. "And—I think I may go so far as to say that it—that she—cordially accepts it." And she put out both hands.

"And now," she said, a moment later, "will the superintendent kindly take the company out to luncheon?"—W. R. Rose in Cleveland Plain Dealer.

Domestic Hints.

Apple Filling for Layer Cake.—Grate two large apples and the rind of one lemon. Mix and add the juice of the lemon, one cup of powdered sugar and one beaten egg. Cook for ten minutes and then let it cool before beating well and putting in between the cake layers.

Veal Patties.—Have about two pounds of lean veal and two ounces of bacon and chop these till they are very fine. Mix with the minced meat, salt and pepper and two well-beaten eggs. Mould into small ovals and lay in a buttered baking pan. Sprinkle breadcrumbs over them and set in the oven. Baste with a little melted butter and white stock occasionally until cooked.

Scalloped Clams.—Chop some small Little Necks very fine and season with cayenne pepper and salt. Mix in another dish some powdered cracker, moistened first with warm milk, then with the clam liquor, a beaten egg and some melted butter. Wash as many clam shells as the mixture will fill, wipe and butter them, fill heaping full, smoothing off with a silver knife. Range the filled shells in a baking pan and brown. Silver scallop shells may be used instead of the clam shells.

Spiced Drop Cakes.—Cream half a cup of sugar with the same amount of butter, add a cup of molasses, and mix well. Dissolve a small teaspoonful of soda in a little boiling water and mix in a cup of sour milk. Add this to the butter and sugar, together with one teaspoonful each of cinnamon, cloves and ginger, and four small cups of flour. Beat well and drop on buttered baking sheets or pans in large spoonfuls, letting them be high in the center. Bake until done in a moderate oven. Test by piercing with a straw.

Brussels Sprouts.—Pick off any leaves that may be discolored and wash well a quart of Brussels sprouts, put into a sancepan with two quarts of boiling water and a saltspoonful of soda. Boil rapidly until tender—about half an hour—just before they are done add a tablespoonful of salt. Drain them in a colander, and if it is not time to serve them, stand the colander over steam to keep them hot. Do not let them remain in the water. When ready to serve put the sprouts in a vegetable dish and pour over them a pint of rich cream sauce.

Hints to Housekeepers.

Onion water applied with a soft brush will keep flies off gilt frames.

A small piece of borax held in the mouth until it dissolves will stop the tickling sensation in the throat.

One great trouble with apple jelly is its frequent insipidity. To obviate this, try flavoring the hot jelly mixture with rose geranium leaves, or with the juice of fresh pineapple.

It is not generally known that wringing out a cloth in hot water and well wiping the furniture before putting on a furniture cream will result in a high polish and will not finger mark.

Remember that a birdcage should never be allowed to hang in a room where the gas is lighted unless the room itself is well ventilated, as the air near the ceiling is generally impure by night.

To take the "eyes" out of a pineapple, if the proper utensil is not at hand, it will be found that slicing the fruit first greatly facilitates the operation. It is easy afterwards to cut off the skin if the pineapple is to be served in slices, and, obviously, still less difficult, if to cut the fruit into dice is intended.

New-laid eggs can be preserved for months by smearing the shells of them with pure glycerine on the same day that the eggs are laid. It is best to place them in a position with the smaller end up. Pure glycerine is much better than butter or grease, as it never turns rancid and thus avoids the chance of spoiling the flavor of the eggs.

Ice-cream with hot chocolate sauce is considered a desert par excellence by many. For the sauce melt one ounce of unsweetened chocolate in half a cup of hot water, add one cup of sugar, and when it boils pour it over half a cup of cream, plain or whipped. Serve at once, pouring the sauce around the ice-cream, not over it.

No one in these days thinks of papering or whitewashing a kitchen. The walls should be oil-painted in a flat finish—that is, without varnish, and if properly done they may be washed freely without injury to the surface. There are also several patent wall coverings resembling light oilcloth that are put on like paper.

Before washing blankets a certain housewife suggests that a thread of white darning cotton should be basted around all spots. The laundress can then see where the spots are, as it is often difficult to find them when the blanket is under water. It is said that new stockings should always be washed before they are worn. They will last longer if this is done.

Ammonia, among its other claims to recognition, has the point in its favor that it will remove mud stains from dresses. After brushing the dry mud away, sponge the remaining stain with a weak mixture of ammonia and water. On black materials this may be done without fear of the consequences, but a solution of bicarbonate of soda and water is safer on colors.

In summer all steel goods, such as fenders, fire irons, etc; not needed should be rubbed over with a thin film of either vaseline or mutton suet and then be carefully rolled up in newspaper; spare knives should be treated also in the same way, as this preserves them from all risk of rusting and, when wanted for use, a good wash in hot ammoniated water will at once free them from the grease and restore their brilliancy.

After grinding and sifting breadcrumbs for use in breaded veal add other dishes, put them into the oven, leaving the door open, and let them become thoroughly dry and slightly browned. This will prevent any danger of mold after crumbs are packed away in the regular box in which they are kept. Scraps of stale bread should be kept and grated for all such purposes. When one is in a hurry she will not then have to stop to grate a piece of bread for her cutlets or steak.

An expert cook says that one very palatable way to serve noodles is with boiled fish, instead of potatoes. Drop the noodles into boiling salted water, but reserve a few for frying. After allowing them to boil for ten minutes, stirring occasionally with a fork, pour into a colander, and while they are draining fry those that have been reserved to a golden brown. Heap the boiled noodles in a vegetable dish, and drop the fried ones lightly over the surface. Serve the fish with a cream sauce.

For blackberry vinegar put fresh blackberries in a stone jar and cover them with cider vinegar, allowing one quart of the vinegar to two quarts of the berries. Cover and let stand for forty-eight hours. Then strain the liquid, keeping the berries whole, and pour over one quart of fresh fruit. Again let it stand for two days, then repeat the process and stand for another forty-eight hours. At the end of that time strain through muslin, and to every pint of the liquid add one pound of sugar. Boil gently for five minutes, skim carefully and let stand at the back of the range for twenty minutes. Bottle and seal while hot. When a cooling drink is desired add the vinegar to iced water in the proportion to suit the taste.



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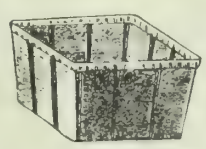
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The Markets.

San Francisco Produce Report.

San Francisco, Oct. 25, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 87¼@ 86¼	87⅝@ 87¼
Thursday	87⅛@ 86¼	87⅛@ 86⅞
Friday	86⅜@ 85⅝	87⅛@ 86⅞
Saturday	87⅛@ 86½	87⅝@ 87
Monday	87¼@ 86¾	88 @ 87⅛
Tuesday	87⅝@ 87	88½@ 87⅞

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	45 @44¾	44½@44¼
Thursday	45 @44½	44½@44⅜
Friday	44⅝@44¼	44¼@44
Saturday	45 @44½	44⅜@44⅛
Monday	45⅛@44⅞	44⅛@44⅛
Tuesday	45¼@45	45¼@44¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 39¼@1 38¾	$1 41¾@1 41
Thursday	1 38⅞@1 38½	$1 41½@1 41⅛
Friday	1 39⅛@1 38⅞	$1 42½@1 42⅛
Saturday	1 39⅛@1 38⅞	$1 43¼@1 42¾
Monday	1 39¼@1 39	$1 43¼@1 43⅛
Tuesday	1 39⅞@1 39¾	$1 43⅞@1 43¾

Wheat.

The wheat market is becoming sensational, nearly all the features coming to light being bullish and large traders in the market on that side. Cargoes for Walla Walla wheat have advanced to 32s 9d and, accordingly, northern f. o. b. values are high, Walla Walla wheat being worth 75c to 76c per bushel f. o. b. There is a railroad strike on in Russia and this, in addition to the certainty of the closing of navigation shortly on account of ice, is firming the market. In the United States a serious drought threatens Kansas and Oklahoma, so that sensational developments are confidently expected by the trade. Trading in December option was fairly brisk and the price was advanced to $1.39⅞ per cental. From the North reports of unfavorable weather for threshing and of large losses resulting there continue to be received. A report from Colfax, Wash., says that the recent snow, coming after so much rain, effectually kills all hope of saving a vast amount of unthreshed grain, and the total loss in Whitman and adjoining counties is placed as high as 1,000,000 bushels. Much of this grain is standing in the shock and cannot be saved, even if good weather should follow, which is not likely. The grain is sprouted and is badly molded, swollen and bleached. It will be fit only for feed for live stock, and much of it will not be even good for feed.

California Milling	$1 50	@1 55
Cal. No. 1 shipping	1 37½	@1 42
Northern Club	1 38¾	@1 41¼
Northern Bluestem	1 40	@1 45

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.40¾@1.39⅞.

Flour.

The local market is now in very fair shape, owing to a good, lively bakers' demand. There is very little California wheat used by the local millers, as most of that which is suitable for milling purposes is used by mills which are nearer the growing sections. Arrivals of Northern wheat are showing up fairly in quality and the flour turned out by the mills which are grinding exclusively on Northern wheat is of a very good grade. Prices have not varied since the cut of 20c per barrel made by local millers. No advance is probable in the near future, unless there should be a shortage of cars or other hindrance of transportation facilities. The export demand from the Northern ports is now beginning to show the first signs of anything like activity for Oriental shipment since the declaration of a Chinese boycott.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The shortage of supplies of good bright feed barley continues to be the leading feature of the market and the problem which confronts the trade is: Where is all the barley? or, is there none? A prominent buyer says: "The barley market continues to advance, with receipts as light as ever. Where No. 1 feed was selling last week at $1.10 to $1.12½, it is easily worth $1.15 to $1.16½ to-day. The northern price is improving in sympathy with ours. It would take $1.22½ to land any here from that source, and the market is nervous enough right now, so that if a demand were to come in from Japan we would have a runaway market. It is little short of that now." To-day's market for December option closed at $1.16⅞.

Feed, No. 1 good to choice spot	$1 15	@1 16½
Feed, fair to good	1 10	@1 12½
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 15	@1 20

Oats.

Choice red and black oats are now very scarce and a strictly choice lot of either variety would readily bring an advance on quotations. The offerings of black oats are mostly of a rather off quality, running very light in both color and weight. Some oats are coming to California from Puget sound, and a few scattering lots from the Willamette valley to San Francisco. Portland, Or., quotes No. 1 white at $22.50@$23.00 per ton, and grays at $22.

White oats	$1 42½	@1 45
Black oats	1 30	@1 80
Red, choice new	1 30	@1 60
Red, fair	1 10	@1 27½

Corn

White corn is, at the moment, very scarce, and appearing quotations on this variety are well maintained. Other varieties are moving slowly at unchanged quotations. Chicago advices state that there continues to be a quiet, but excellent, demand for new corn, which has had a tendency to add strength to the speculative market.

Large White, good to choice	$1 42½	@1 47½
Large Yellow	1 37½	@1 40
Small Yellow	1 55	@1 65

Rye.

Offerings have been rather light during the current week, and, though no extensive trading has developed, prices are somewhat firmer, owing to the fact that so little choice rye is in sight. Off grades, such as comprise the Utah crop, would not bring quotations.

Good to choice	$1 50	@1 55

Buckwheat.

There is practically no market for buckwheat for the reason that there is nothing offering. A good lot suitable for seed purposes would bring in the neighborhood of $2.75 per cental.

Good to choice	—	@—

Beans

Beans of the new crop are now arriving freely and are showing up very well as to quality. The heaviest arrivals have been of the white variety, both large and small. A fairly brisk demand is, however, maintaining prices at their present level. The market on Bayos is strong enough, owing to the fact that a large part of the crop was contracted for early in the season. Limas are also somewhat stiffer in price, present quotations being $3.50 per cental, choice basis. A considerable shipping demand is going forward for October which is having the effect of steadying the market on other varieties somewhat.

Small White, good to choice	$2 75	@3 15
Large White	2 25	@2 45
Pinks	2 00	@2 15
Pinks, damaged	1 40	@1 75
Bayos, good to choice	—	@3 50
Red Kidneys	3 00	@3 50
Reds	3 00	@3 25
Limas, good to choice	—	@3 50
Black-eye Beans	4 25	@4 35

Dried Peas.

Large arrivals are coming in from Humboldt county and are meeting with a good demand. Most of the Salinas crop was shipped south to be used as fertilizer. California green peas are somewhat stiffer in price, choice lots easily bringing the appearing quotation of $2.40. Niles are ruling steady. Stock on hand in the local market are entirely sufficient to supply the present demand and are showing up well in quality.

Green Peas, California	$—	@2 40
Niles	1 85	@2 00

Hops.

During the current week the ideas of dealers and growers have come closer together and some buying has been done. Growers are reducing their ideas and are meeting the buyers' offers, which have occasioned a break in the deadlock which has existed for some time. The choicest grades of hops are now obtainable at 10½c to 11c and inferior grades are proportionately lower. About 1500 bales of Sonomas were bought within the past five days at 11c to 11½c, the latter figure being not now offered. Official returns from Europe state that the 1905 crop is 692,000 cwt. Oregon is expected to yield close to 120,000 bales, which is about 10,000 more than was anticipated a few weeks ago. Lower prices are predicted by all buyers and purchases that have been made to date are not on a speculative basis, but are to cover sales previously made for October shipment.

Good to choice 1904 crop, nominal	9	@ 11

Wool.

The market here reflects the tone of the Eastern market, being very quiet for all fall wools. All that was of choice grade of the Northern clip has already been disposed of, but nearly all defective wools are still unsold. Last week some choice Mendocino wools were sold at Cloverdale at 16@17c per pound. Dealers here are inclined to believe that the opening prices at which defective fall wools are being held are too high, and consequently very little trading is being done.

FALL.		
Humboldt and Mendocino	17	@18
Northern, free	15	@17
Northern, defective	12	@14
Middle County, free	13	@15
Middle County, defective	10	@13
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11
SPRING.		
Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

The car shortage continues and as a result the arrivals of hay by rail have been very light. The total shipments for the past week amount to only 2150 tons, about half of which came by schooner. As a result quotations have been marked up on several varieties and in the others there is a tendency toward the top quotations. The cheaper grades of hay have been generally advanced slightly, although dealers here claim that the larger quantities are already on storage here and that there is plenty of off grade hay in various parts of the country.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ℔ bale	30	@ 50

Millstuffs.

The market in general continues firm as to tone, with stocks at the moment running rather light. Bran is a shade off, though no change can be made in quotations. Rather heavy offerings from the North are expected to have a depressing effect on the price. Rolled barley is scarce and appearing quotations are being firmly maintained. Both cornmeal and cracked corn have a weaker feeling.

Alfalfa Meal, ℔ ton	$18 00	@ 20 00
Bran, ℔ ton	23 50	@ 24 00
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	24 50	@ 25 50
Cornmeal	31 50	@ 32 00
Cracked Corn	32 00	@ —
Oilcake Meal	—	@ —
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

The seed market is featureless. Little of any variety is arriving, with the exception of some new crop alfalfa seed, which is held at appearing quotations, but for which there is at present a small demand in this market. The market on all varieties is ruling steady and quiet.

Alfalfa	$13 00	@14 00
Flax	3 25	@ 3 50
Mustard, Yellow	3 25	@ 3 50
Mustard, Trieste	4 25	@ 4 50
		Per lb.
Canary		6½@—
Rape		2½@ 3
Hemp		3½@ 4
Timothy		5 @ 5½

Honey.

A rather limited amount of trading has been done during the current week for the reason that apiarists are hesitating to let their honey go at the present figures that buyers seem disposed to offer. The yield in southern California has been more than the average, but the beemen are expecting to get a good price for it, as reports from other sections indicate a considerable shortage.

Extracted, Water White	5	@—
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	8	@ 9
Amber Comb	6	@ 7

Beeswax.

The demand is at present rather light and supplies coming in are entirely sufficient for all requirements. Appearing quotations are well maintained.

Good to choice, light ℔	25	@27
Dark	23½	@24½

Live Stock and Meats.

The general tone of the market is somewhat improved. Beef is a shade firmer. Mutton is steady at quotations and lambs are in demand. Small veal is arriving freely and is slightly weaker in price. Hogs are ruling firm at appearing quotations.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ℔	4¾	@ 5½
Beef, 2nd quality	4	@ 4½
Beef, 3rd quality	3	@ 4
Mutton—ewes, 8@8½c; wethers	8½	@ 9½
Hogs, hard grain, 150 to 250 lbs	5½	@—
Hogs, large, hard, over 250 pounds	5¼	@—
Hogs, small, fat, under 150 lbs	5¾	@—
Veal, large, ℔ lb	5	@ 6
Veal, small, ℔ lb	5½	@ 7½
Lamb, spring, ℔ lb	9	@10

Hides, Skins and Tallow.

Hides are still firm at the present high figures and the prices now being quoted East for hides for December delivery indicate a practical advance. Current prices are being asked for December hides, though the take off from that month is notably poorer in quality than that of the present month. Cheap pelts are not in active demand and are accumulating in San Francisco to some extent. Tallow is firm and in good demand with heavy buying for the Liverpool market.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Saltde Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 11 lbs	20 @21	19 @—
Pelts, long wool, ℔ skin	1 50@2 00	
Pelts, medium, ℔ skin	90@1 25	
Pelts, short wool, ℔ skin	60@ 90	
Pelts, shearling, ℔ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

Stocks of all kinds are now almost entirely exhausted, but as the demand is now practically over nobody is being inconvenienced. Dealers here state that the supply was entirely sufficient, but that there is no appreciable surplus. Appearing quotations are being well maintained.

Bean Bags	$	6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2		7½@7¾
Fruit Sacks, jute, as to quality		6½@7½
Grain Bags, Calcutta, 22x36, spot		7½@7¾
Wool Sacks, 4-lb		33 @ 34
Wool Sacks, 3½ lb		30 @ 31

Poultry.

There is a good demand for strictly prime stock at satisfactory prices, while poor stock and small stock continue to drag. Large stock, both young and old, is wanted in the local market. Turkeys have arrived more freely than had been anticipated and the market shows an unexpected weakness. It is believed, however, that this is only a temporary condition and that prices will stiffen up again.

Turkeys, choice Young, ℔ lb	$ 20	@ 22
Turkeys, live gobblers, ℔ lb	18	@ 20
Turkeys, live hens ℔ lb	18	@ 20
Hens, California, ℔ dozen	4 00	@ 4 50
Hens, large	6 00	@ 7 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 00	@ 6 00
Fryers	4 00	@ 4 50
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ℔ dozen	4 00	@ 5 00
Ducks, young, ℔ dozen	4 00	@ 6 00
Geese, ℔ pair	1 75	@ 2 00
Goslings, ℔ pair	2 00	@ 2 25
Pigeons, old, ℔ dozen	1 25	@ —
Pigeons, young	1 75	@ 2 00

Butter.

Prices continue to soar and have now reached 31c for extras. All other grades also show an advance. The market is in excellent shape and a further advance is predicted. Creamery extras and firsts are wanted in the local market at these figures. Other grades are moving readily at appearing quotations.

Creamery, extras, ℔ lb	30	@31
Creamery, firsts	25	@27½
Creamery, seconds	23	@25
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	24	@25
Mixed Store	18	@20

Cheese.

The market on California cheese is a shade firmer this week. Fancy stock is moving readily at appearing quotations. Off grades are being somewhat neglected and Eastern slightly weaker in price.

California, fancy flat, new	11½	@13½
California, good to choice	11	@11½
California, fair to good	9½	@10
California, "Young Americas"	11½	@13½
Eastern, new	15	@17

Eggs.

Selected and ranch stock is in brisk demand. Store eggs move readily if of satisfactory quality. Prices show a still further advance on all kinds of select stock and on Eastern firsts, the latter having been brought into consumption by the rapid advance in the price of select stock.

California, select, large, white and fresh	46	@48
California, select, irregular color & size	35	@40
California, good to choice store	18	@24
Eastern firsts	23	@26
Eastern seconds	19½	@20

Potatoes.

The market is still weak, but a shade firmer than at last quotations. No California Early Rose are now showing up in the local market. Salinas Burbanks are scarce and firmer in price. River Burbanks are very plentiful and are bringing extremely low values. The falling off of

the shipping demand for Southwestern points has caused a large accumulation of stocks and a sharp decline in the value of the cheaper grades. Oregon potatoes are now due to arrive here and local dealers are of the opinion that their delay is occasioned by the heavy rains which have occurred in that section lately. It is now believed that when the Oregon shipments begin to show up prices on Salinas Burbanks will weaken.

Cal. Early Rose, ₱ cental	—	@	—
River Burbanks, ₱ cental	60	@	70
Salinas Burbanks	85	@	1 25
Chile Garnet, ₱ cental	55	@	65

Vegetables.

The vegetable market is now in excellent shape and many of the appearing quotations will doubtless be advanced during the coming week, as receipts of many varieties are falling off quite materially, and some are now out of the market. Green corn is extremely scarce and higher in price. Summer squash is out of the market entirely, though a few straggling lots continue to appear and are bringing about $1.50 per large box. The onion market is now in better shape than it has been at any time during the past four weeks, and prices, though unchanged, are very firmly held at the present figures.

Beans, Lima, ₱ lb	—	@	5
Beans, String, ₱ lb	4	@	6
Cabbage, choice garden, ₱ 100 lbs	50	@	—
Corn, Green, ₱ crate	—	@	2 00
Egg Plant, ₱ box	50	@	65
Garlic, ₱ lb	—	@	6
Onions, New Yellow Danvers, ₱ ctl	85	@	90
Onions, Australian Brown, ₱ ctl	—	@	95
Peas, Green, ₱ lb	5	@	7
Peppers, Bell, ₱ box	40	@	50
Peppers, Green, ₱ box	25	@	50
Summer Squash, per large box	—	@	—
Tomatoes, ₱ box or crate	40	@	75

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Arrivals of many varieties have been very limited during the current week and stocks now on hand are greatly depleted. Apples are slightly weaker as to general tone, though prices are quotably unchanged. The market locally is expected to improve shortly, as a considerable Eastern demand will doubtless develop owing to the extremely short crop in Eastern apple raising sections. Seedless grapes are now entirely out of the market and other varieties, such as Tokays, Muscats and the black varieties, are now quoted. Figs are finding an excellent demand and have stiffened somewhat in price, 2-layer choice basis now ruling firm at $1.

Apples, choice to select, ₱ 50-lb bx	1 00	@	1 15
Apples, good to choice, ₱ 50-lb. box	65	@	80
Apples, fair to good, ₱ 40-lb box	40	@	—
Cantaloupes, ₱ box	—	@	—
Figs, ₱ one layer	—	@	65
Figs, ₱ two layer	85	@	1 00
Grapes, Tokay, large box	—	@	1 00
Grapes, Muscat, large box	—	@	1 25
Grapes, Black, large box	—	@	1 00
Huckleberries, ₱ lb	7	@	9
Peaches, ₱ small box	—	@	—
Pears, Bartlett, choice to select, 40-lb box	—	@	—
Plums, Late Coes Red, ₱ crate	60	@	85
Raspberries, ₱ chest	8 00	@	9 00
Strawberries, Longworth, ₱ chest	8 00	@	9 00
Strawberries, large var., ₱ chest	4 00	@	5 00
Strawberries, Santa Clara, ₱ chest	—	@	9 00
Watermelons, ₱ doz	1 50	@	2 50
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The market on all varieties of dried fruit is now in good shape and prices are being well maintained. The shortage of the Eastern apple crop continues to be felt in a large inquiry for California dried apples and has also gone a long way toward strengthening the market on other varieties. During the past week there has been more inquiry for prunes and more business transacted in that fruit than for some time past.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6½	@	7
Apples, extra choice to fancy, 50-lb boxes	7	@	7½
Apricots, Royal, good to choice, ₱ lb	6½	@	7
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box, 1-lb cartons	5½	@	6 2½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb	—	@	6
Peaches, unpeeled, good to choice	7	@	7½
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ₱ lb	7	@	7½
Pears, choice to fancy	8	@	10
Plums, Black, pitted	5	@	6
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	8
Prunes, in bags, 4 sizes, —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c: 90-100s, 2@2¼c: small, 1¾@2c.			

COMMON SUN-DRIED.

Apples, sliced	2½	@	2¾
Apples, quartered	3	@	3¼
Figs, White, in bulk	2	@	2½
Figs, Black	2	@	2½

Raisins.

The raisin market is in a good, healthy condition, with stocks of old goods practically cleaned up. The weather for the past two weeks has been favorable to raisin making and drying, and the progress made with the new crop has been very satisfactory. The Central California Raisin Growers' Association made a tentative reduction in the prices of several grades and sizes October 23rd. The prices are, for Thompson's Seedless in 50-lb boxes, 5½c; Seedless Sultanas in 50-lb boxes, 4c; fancy, 16 ounces, seeded, 7¼c; choice, 16 ounces, seeded, 6c; choice, 12 ounces, seeded, 5¾c.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2-crown, 20-lb box	1 40	@	—
London Layers, 3-crown, 20-lb box	1 50	@	—
Fancy Clusters, 4-crown, 20-lb box	2 00	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	3 00	@	—
2-Crown Standard loose Muscatel	5¼	@	—c
3-Crown Standard	6	@	—c
4-Crown Standard	6½	@	—c
Seedless Thompsons, 50-lb boxes	5½	@	—c
Seedless Sultanas	4	@	—c
Fancy, 16-oz. Seeded	7¼	@	—c
Choice, 16-oz. Seeded	7		c
Fancy, 12-oz. Seeded	6		c
Choice, 12-oz. Seeded	5¾		c

Citrus Fruits.

New crop Navel oranges are now coming into the market, the first carload arriving Monday. It is still too early in the season to predict the quality from the samples received here, but all reports from the south state that the weather has been favorable for the crop and that it is expected to be above the average, both as to yield and to quality. Such as have been received here are very green and are bringing from $3 to $4 per box, according to size. Lemons are at the moment very scarce, but it is expected that heavier arrivals will begin in about a week. Prices on strictly choice are $3.50 per box, an advance of 25c over former quotations. Grape fruit is scarce and firmer in price, and limes are plentiful and weaker.

Oranges, Navels, intermediate crop	3 00	@	4 00
Oranges, Valencias, ₱ box	2 50	@	4 50
Lemons, California, fancy, ₱ box	2 50	@	3 50
Lemons, California, good to choice	2 00	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ₱ box	2 50	@	4 00
Limes, ₱ box	4 00	@	—

Nuts.

Locally there is no change in the nut situation. Almonds continue weak owing to a large crop. Arrivals have been free and are for the most part of excellent quality. The first carload of walnuts of the season from southern California was shipped on Oct. 13 from Goleta, being consigned to a commission house in St. Paul, Minn. The shipment was of the best grade, being known as No. 1 soft shell. The crop this year will fall off considerably, as compared with last year or past years. It is expected that the shipments will not amount to more than thirty cars. Last year forty cars were shipped East and the year before sixty carloads were sold to Eastern concerns. Only a small percentage of the southern California crop is taken on the coast, most shipments being made to the Middle Western States.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ₱ lb	11	@	12
Almonds, Ne Plus Ultra, ₱ lb	11	@	12
Almonds, Nonpareil, ₱ lb	11	@	13
Almonds, Languedoc, ₱ lb	7½	@	—
Almonds, Golden State, ₱ lb	7	@	—
Hard Shell, ₱ lb	5	@	—

Wine.

The California dry wine crop will be much short of the average yield this year, some authorities placing the estimate of the shortage as low as 50% of the usual output. The vintage is now nearing completion in most districts and in some it is already completed. The quality of this year's crop is not up to its usual standard, owing largely to the unfavorable weather during the blossoming season, which caused the grapes in some localities to run very low in sugar. The sweet wine vintage will be somewhat short, but not nearly so short as the dry wine. Prices are not expected to advance much, as the market will be well supplied from the surplus of the past three years.

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for the "rainy day" will keep the "rainy day" away if you buy Smiths' Cash Store Stock with it. Big dividends and part ownership in the greatest enterprise of the West! **Increased capital means increased business** and so we want **you** for a **partner.**

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—50,000— **Turkeys Wanted** From now on, until after the holidays, we shall require large quantities of dressed and live turkeys and live chickens to supply our trade with. Write us immediately how many turkeys you have on hand. Ship us your poultry. Highest market prices. Immediate cash returns guaranteed Choice large young turkeys selling to-day as high as 25c per lb. Mark and consign all shipments of produce to the **POULTRYMEN'S UNION,** 215-217 Clay St., S.F. Incorporated, $25,000 Cash Capital.

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THE SHARPLES SEPARATOR CO.
WEST CHESTER, PA.
TORONTO, CAN. CHICAGO, ILL.

THE DAIRY.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the PACIFIC RURAL PRESS by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

Varus, C. W. Evans, M. D., J. W. Ellenwood, Atlanta.

SALES BY FRANK H. BURKE OF SAN FRANCISCO.

This year's thoroughbred calves sold to James Sutherland, Fresno:

Bull by Mable Haskins III Emperor, out of Lil De Kol II. and another out of Frolic of La Siesta, by Gerben of La Siestat, the balance being heifers out of Dairy Queen, Hazel Dell, Josephine Mechthilde, Clover of La Siesta, Donna Ella, Hight Ulah VI, Little Rebel and Bonnie Doon of La Siesta. To go to Central America the two year old bull Mechthilde Cook, by Royal Knight of La Siesta, and out of Eulalie of La Siesta, and a young cow, Vesper Bells of La Siesta, out of Beautiful Bells.

Better Barns for Dairymen.

Every year shows greater interest on the part of the general public in the production of clean milk. It is the focal point of most dairy legislation and is the most essential item in dairy manufactures. City boards of health, dairy and food inspectors, and State dairy and food commissioners are active in the work of improvement of the sanitary conditions surrounding the production of milk. Reports from these various officers show that one of the greatest obstacles in the way of securing improvements are the barns in which the herds are kept. Too often these barns are found to be damp, dark, and poorly ventilated; the floors are a source of everlasting odors; the lack of sunlight promotes decomposition, and every particle of dust is loaded with germs which readily find their way into the milk. The foul odors present are absorbed by the milk before it can be removed from the premises. The cows are more susceptible of disease, and the place is entirely unfit for housing animals. There seems to be some excuse for this condition of things, as many, if not most, of these barns were built before the necessity of light and ventilation, good drainage and sanitary arrangements for the interior were as well known as they are to-day. Most dairymen realize this fact and would make improvements, which are not necessarily expensive if they knew how to go about it.

The Dairy Division receives many inquiries regarding the construction of new dairy barns, as there seems to be a lack of available information on the matter that is reliable and practical. It is proposed to make working plans and to give specifications for material and manner of construction, and to make the work especially applicable to the dairyman who cannot afford an expensive structure and the services of an architect, and to place these in the hands of those who may desire them as soon as it can be done properly.

Many excellent barns have been built in different parts of the country; it is desirable to make a study of these, and in order to do so without unnecessary expenditure of money for travel, the Dairy Division desires that those who have built barns having especially good features in general arrangement of floors or in details of stalls, handy devices, etc., would write to the Dairy Division of this Bureau of their success, giving details as much as possible. Some of the best barns will be visited with a view to securing more complete details than can be given in a letter.

It is also desired that those who contemplate building new dairy barns or intend to rebuild their old barns with a view to making them modern and sanitary, will write to the Dairy Division and explain the details of size, cost, drainage and slope of land and exposure, purpose of barn, etc. It is not expected that the Division can furnish every applicant with a full set of drawings and specifications, but all such correspondence will be given careful attention and suggestions offered.

From this study of the needs of builders and from the successful work already done, it is expected to work out eventually a system of plans and specifications covering the general differences of climate, location, material and cost that can be readily adapted to the needs of the greater number of dairymen. Correspondence and suggestions bearing on this subject will be welcomed at the office of the Dairy Division of the United States Department of Agriculture, Washington, D. C.

THE APIARY.

Explanation of Standard for Honey.

On December 20, 1904, the Secretary of Agriculture, acting under authority of Congress and upon the recommendation of the Committee of Food Standards of the Association of Official Agricultural Chemists, proclaimed the following standard for honey:

Honey is the nectar and saccharine exudations of the plant, gathered, modified, and stored in the comb by the honey bee (Aphis mellifica). It is lævo-rotatory, contains not more than twenty-five (25) per cent of water, not more than twenty-five hundredths (0.25) per cent of ash, and not more than eight (8) per cent of sucrose.

This standard was adopted after careful publication of an earlier suggested standard as a basis of criticism, and after careful consultation with leading authorities in apiculture.

Since the standard was issued many letters have been received from bee keepers representing many States of the Union, expressing a desire that the standard should be changed so as to avoid the exclusion from standard honey of all honeys that contain honey dew. In support of this plea, it is urged that the bee keeper is unable to prevent the introduction of some honey dew, whether taken directly from the plant or from the aphis, and that small quantities of this material are not injurious to the honey.

These requests being brought to the attention of the Committee on Food Standards at its meeting in Chicago, beginning May 29 last, the Committee adopted the following minute:

The standard does not in any way exclude small quantities of honey dew from honey. We realize that bees often gather small quantities of honey dew that can not be detected in the finished products by chemical means, and does not damage its quality. It is only when relatively large amounts are gathered that the quality of the honey is impaired, and it fails to meet the requirements of the standard. It is generally agreed that such a large amount of honey dew is injurious to the quality of the product, which can not then be properly regarded as honey.

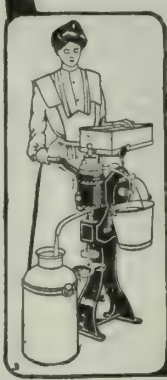
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5 Cows and a U. S. made $45.00 month
7 Cows but no U. S. made $11.00 month
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STAUNTON, ILL., SEPT. 25, 1905.

I hereby certify that on April 20th, 1903, I bought of your agent one of your No. 7 U. S. Cream Separators, and after using it for more than two years, I am more than satisfied. In 1902 I sold the milk of my seven cows to the creamery and realized from said cows an average of $11.00 per month. From the herd in the spring of 1903 I sold two of the seven cows and milked the other five, and my income from the five cows was $45.00 per month, a difference of $34.00 in favor of the U. S. Separator. If necessary I will make affidavit as to this statement.

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Send by check, money order or coin by Wells-Fargo Express Co. with order. H. S. WHITE MACHINERY CO., Office 130 Beale St. Reference: Any bank, banker or publication.

THE VETERINARIAN.

Forage Poisoning.

Dr. C. F. Dawson, Veterinarian of the Florida Station, describes a trouble which is also encountered by stockmen in this State:

Forage poisoning, otherwise known under the names cerelro-spinal meningitis, grass staggers or bind staggers, is a disease which occurs not only in Florida every summer, but also over a large portion of the central and eastern parts of the United States. In Florida it seems to occur oftenest along the east coast. As the name indicates, it is caused by poisonous plants, or, more strictly speaking, by diseased forage, such as fermenting grains and hay, or by grasses which have matted together near the ground and become moldy. Sour or moldy silage has also produced the disease, as has also stagnant pond water in which vegetation is decomposing. Moldy or worm-eaten corn has also come in for its share of blame as a cause. It affects horses and mules of all ages alike.

The symptoms are as variable as the cause, and, according to their nature, we recognize three types of the disease. In the first type, the most rapidly fatal, there occurs a weak, staggering gait, partial or complete paralysis of the throat, blindness, twitching of the muscles, and no fever, as a rule. The animal goes down, becomes delirious and goes through the movements of walking, trotting or running while on its side. This stage is soon succeeded by deep coma and the animal quietly expires in a few hours from the onset of the disease. The second type is first manifested by slowness in chewing, partial inability to swallow and weakness in the tail. There is no pain or fever. The breathing and pulp are about normal and a slight constipation exists. In two or three days the animal recovers, or all the foregoing symptoms are increased in severity. The throat paralysis is complete, the gait uncertain, coma or sleepiness appears, the pulse is weak and slow, the breathing is labored. Delirium now develops, the animal goes down, the spine becomes rigid and there is cramping of the neck and jaws. Death occurs in about a week or ten days in these cases.

In the third, or mild type, the control of the limbs and tail is only slightly affected and the ability to swallow is not lost. There is no fever, pain or unconscious movements and the animal shows improvement in four or five days, ultimately recovering.

In some cases of the disease spinal paralysis is the most prominent symptom, while in others it may be difficulty in swallowing that attracts most attention. In all cases, if sleepiness or coma remains absent for a week, the animal will likely recover; but some form of paralysis may show for a while.

According to the symptoms do we find departures from the normal condition in the brain and spinal cord. In mild cases there are no notable changes in the nervous system. In others we note considerable liquid in the brain and spinal cord cavities and distention of the blood vessels. In the severest cases the brain and spinal cord will appear softened and even abscesses may be found.

The object of this article is only to call attention to the causes of this disease, so that owners will be more careful to provide their animals with pure food and drinking water.

THE recent cattle sale of Rush & Pierce, Suisun, Cal., was a success, considering that the stock was not in immediate salable condition. The fifty-five head offered averaged $89.10, and the eleven bulls in the lot averaged $127.30. This is their first sale, and the results obtained warrant the prediction that their future sales will be marked by high prices and larger attendance. When the Shorthorn breeders and buyers throughout the State fully note what Rush & Pierce are doing, they will doubtless testify their appreciation of a good thing. Fred. H. Chase, of 1732 Market street, San Francisco, conducted the sale, assisted by J. M. Flaherty, a Shorthorn man, from Portland, Oregon. The biggest buyer was A. J. Molera, of San Francisco, who intends branching out into the Shorthorn business on a large scale. He bought nineteen head, and had them shipped to his ranch in Monterey. Judge Carroll Cook, of San Francisco, was also a large buyer, and shipped his cattle to his Lone Pine Ranch, at Glen Ellen, Cal.

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Prize winning Berkshires.
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Treatment of Colds.

This is a subject of perennial interest and one about which much has been written, but with results disproportionally small, considering the consumption of ink. The truth is that a cold is due to an almost infinite variety of causes; some local, some general; some readily avoidable, some practically inevitable; and no one method will prove effective in all cases.

Very few are the fortunate individuals who never have colds, and most of those living in our northern climate must be resigned to having one or two in the course of the winter; but one who takes cold readily and often is not in a healthy condition, and should seek medical advice. The cause in such a case may be local, consisting in some malformation in the interior of the nose which keeps the mucous membrane in an irritable state. This fault in anatomical construction can usually be remedied by an operation, which is seldom severe. But before resorting to this the general system should be questioned in order to determine whether or not the fault lies with that. Often this is the case, even when a nasal deformity also exists.

One of the chief predisposing causes of a cold is a disordered digestion, especially intestinal digestion, as a result of overeating or the use of alcohol. It has been said that an underfed man cannot catch cold, while an overfed man can scarcely avoid it. Whether this is strictly true or not, there is certainly some close relation between the digestive organs and the nose; and inaction of the bowels is a frequent forerunner of a cold.

The adage that one must "stuff a cold and starve a fever" is pernicious—a cold is a fever, and one of the surest means of cutting it short is to take a laxative, abstain almost entirely from food for twenty-four hours, and drink two or three quarts of cool water.

Another "popular remedy," which is really an aggravator, is a "hot toddy" at bedtime. A hot drink—hot lemonade, for example—is good, and the subsequent sweat is good, if the sleeper does not throw off the bed clothes the minute he drops off; but the alcoholic addition is not merely superfluous but injurious. Alcohol in any form predisposes to a cold and retards the cure of one already present.

Cool bathing, deep breathing, daily exercise in the open air, fresh air in the bedroom at night, abstemious living, and not letting waste materials accumulate in the body—these are the best means of removing one's tendency to catch cold.—Youth's Companion.

The Body While we Sleep.

If the organs of the body cannot be said to sleep, neither can the voluntary muscles. Witness the phenomena of sleep-walking; the postilions in the stage-coach days, who slept in their saddles, and cavalrymen, who do it today; infantry, who have been known to sleep on forced marches; sentinels, who walk their beats, carrying their guns in a fixed position, while they sleep. For all we know, policemen may do it, too. People who talk in their sleep are familiar to all of us. Experiments made by Speir, Armstrong and Child on 200 college students of both sexes showed that 47% of the men and 37% of the weman talked in their sleep. A number of things might be proved by these statistics. Of these sleep-talkers, one-half of the women and one-third of the men are able to answer questions while asleep. More women than men could answer questions on any subject, not alone that of which they had been talking. It has also been found that most sleep-talkers are under 25 years of age.

Evidently, then, with the muscles and organs of the body all working, it is the brain only that sleeps, and by no means all of the brain. The senses of sight, hearing, touch, smell and taste may be very much awake while the subject sleeps. A sleeping person hears and answers questions, re-arranges his bedclothing, covers his eyes to keep out the light, draws away his hand when the experimenter tickles it. A child is broken of the habit of sucking his thumb while asleep by putting aloes on it. He is conscious of the bitter taste and dreams of wormwood. The nerves, then, and the brain centers corresponding to them, are awake. A busy lawyer, exhausted by overwork, one night went out to supper with some friends, ate, talked and walked with them, and the next day remembered absolutely nothing of the occurrence. He had not been drinking; the man was simply asleep during the whole evening. His conscious memory—that is, consciousness itself—slept.—Ainslee's Magazine.

Laugh and Grow Fat.

This is an old proverb, but some of the best laughers are not fat, and some of those who are fat rarely laugh. To laugh easily one must have a mirthful disposition, must be able to see absurdities everywhere. Then to enjoy laughter we need to be among those who laugh, for it is very catching. When we see another laughing, we feel like doing the same, even before we know what it is all about. To the perfectly healthy laughter comes often. Too commonly, though, as childhood is left behind the habit fails, and a half-smile is the best that visits the thought lined mouth of the modern man or woman. People become more and more burdened with the accumulations of knowledge and with the weighing responsibilities of life, but they should still spare time to laugh. Let them never forget, moreover, that "a smile sits ever serene upon the face of wisdom."—Phrenological Journal.

Full of Adventure.

A mother sent her small boy into the country and after a week of anxiety received this letter: "I got here all right, but forgot to write before. A fellar and I went out in a boat, and the boat tipped over and a man got me out. I was so full of water that I didn't know anything for a long time. The other boy has to be buried after they find him. His mother came and cried all the time. A horse kicked me over, and I've got to have some money for fixin' my head. We are going to set a barn on fire to-night, and should laugh if we don't have some fun. I shall bring home a ferret if I can get him in my trunk."

When grease spots are discovered on the rugs the best plan is to send them at once to a carpet cleaner and have them properly scoured, for almost all home remedies leave a big black ring around the spot on which they have been rubbed, and they don't always take out the grease. If soap is used in an effort to cleanse the spot the suds must be made with only the best toilet qualities and a little tepid water. Coarse leundry soaps are likely to fade the best of colors and should never be used.

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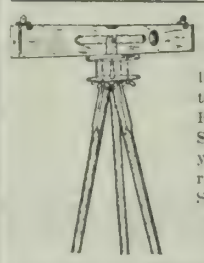
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Scarcity of Jam in Great Britain.

The London Mail says that, as the result of a generally short fruit crop, this season's jams will be sold at an increase of 1 or 1½ cent a pound. The three great jam fruits—strawberries, raspberries and black currants—have all been partial failures from the boiler's point of view. Owing to the extreme heat and the lack of rain during the strawberry season, the latter crop, which is the one used by jam makers, was very meager, and the manufacturers had to pay enhanced rates for their supplies. This jam will be advanced 1½ cent a pound. Similar atmospherical conditions also reduced the bulk of the raspberry crop.

Olives in the Sacramento Valley.

Sacramento Union, Oct. 24: The Sacramento Valley Development Association is to be congratulated upon its determination to put the olive industry upon a more satisfactory foundation. Hopes were once entertained that the olive would prove to be one of the most remunerative of California crops, but this has proved very far from being the case. The situation is rather anomalous. The California olive is everything that the olive ought to be, while the demand for olive oil has been increasing steadily throughout the world, and yet it must be confessed that the California olive trade has been disappointing. For this there are many reasons. It is peculiarly easy to adulterate olive oil, and the genuine can not, of course, compete in price with the adulterated. The public in some parts of the country has become so accustomed to inferior oil that it prefers it, and it does not see why it should pay a higher price for what seems to it to be an inferior product. It may also be that some California makers have not been entirely blameless in the matter of adulteration, although the worst offenders are the European exporters. To promote the California trade is therefore largely a matter of educating the public taste, and if the Development Association can do anything in this direction the labor will be well spent. Then, too, there is room for improvement in the methods of growth and extraction. The olive industry is not an easy one and it requires a good deal of expert knowledge. The growers sometimes need to be educated as much as the consumers, and if the growers can be brought together and encouraged to give their experiences, it would be easy to find out the weak places, and also to devise some way to encourage the trade. The Sacramento valley has all the conditions needed for olive culture, and there is absolutely no reason why it should not be made remunerative. The Development Association, by its contemplated action, is taking the first step to a very desirable end.

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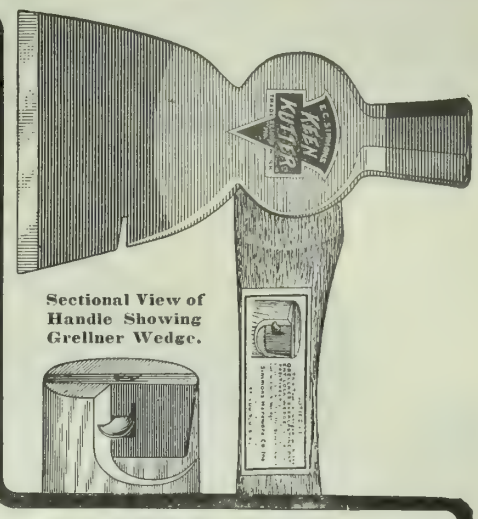
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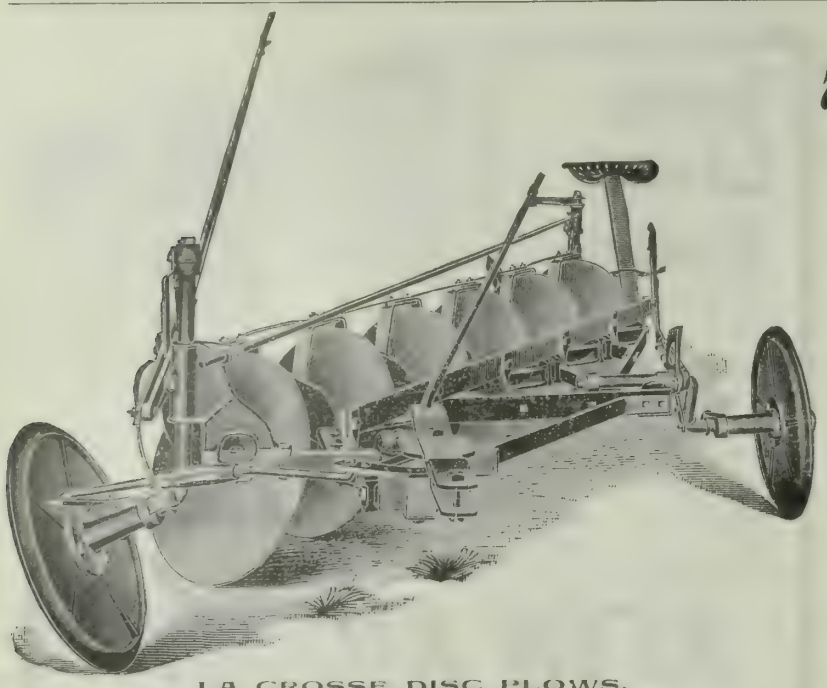
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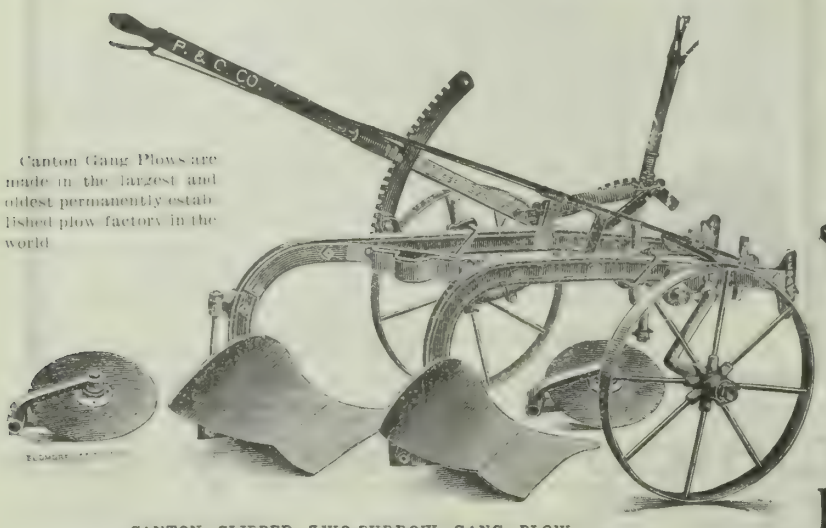
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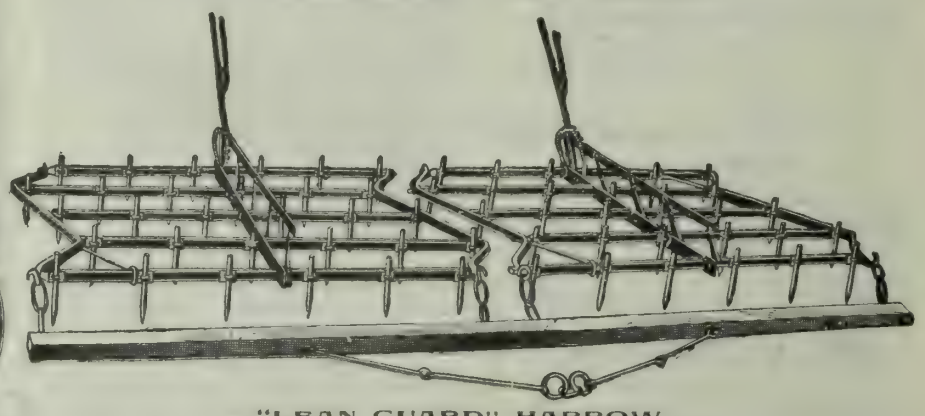


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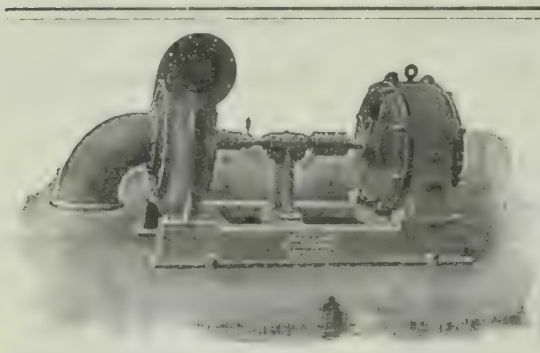


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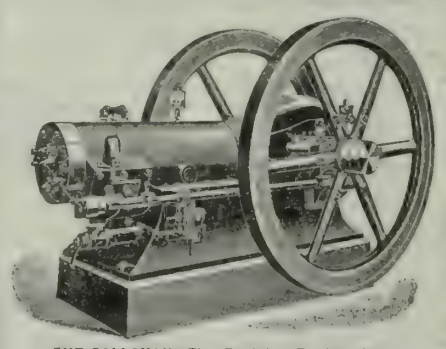
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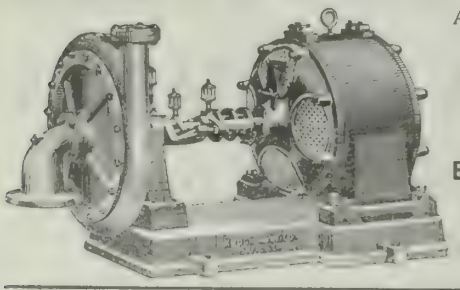
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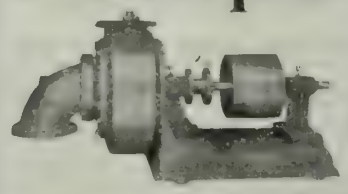
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California Lemon Growing.

From time to time in the immediate future, as opportunity offers, we intend to give glimpses of a very unique and distinctive branch of California horticulture, viz.—lemon growing. This special product, in the present advancement of its culture and preparation for market, well illustrates the originality and invention which the California fruit grower has displayed in his successes. Lemon growing in California is old because it arose at the old missions in the second century back of us, but successful lemon growing as a great industry is new—not yet two decades of age. For, the old seedling lemons were bad and though enterprising growers soon learned that fact and set about getting better ones, it took years to secure them and to learn how to grow and handle them so that they could displace the Sicilian fruit in the markets of the United States. Nor was time the only thing sacrificed—hundreds of thousands of dollars were lost before the California grower could put upon the market a good lemon, fit to stay good for a sufficient length of time. Unprofitable plantings; expensive curing houses, which did not cure well; countless experiments which yielded only loss and disappointment—all these are the wrecks upon the rock of American lemon growing.

Naturally the Californian sought first to know how lemons were grown and handled abroad. At cost of great effort and outlay he learned practically nothing that he could do and a great deal that it was not necessary to do. Then he assumed a more rational mood—a disposition to discern what principles are involved in the problem, and to apply them in his own way according to conditions locally prevailing. Along this line grand success has been attained by a few masterful men conducting large lemon enterprises or smaller undertakings of their own, while the mass of lemon planters, for one reason or another, have never reaped the reward they expected. Some of these conditions will be discussed as we find space. On the whole, it may be said that lemon growing is a much harder and more exacting enterprise than orange growing, and for this reason many have new-topped their trees to oranges and thus escaped difficulties which they could overcome. Many of these difficulties will naturally suggest themselves as we show how success has been attained in one of our greatest lemon enterprises.

Such is unquestionably the Limoneira Company of Santa Paula, Ventura county, under the capable management of Mr. C. C. Teague. Upon this page we give a view of lemon picking in one of the orchards of this company. Although there are many things about growing lemons before there are lemons to pick, we break in at this point at this time because it is very significant. Study the action of the pickers as shown in the picture, and you will see that picking is a fine art. Mr. Teague has freely contributed the results of his experience at fruit growers' meetings, and we shall draw from him an interpretation of what picking means in lemon growing. Lemons must be very carefully picked, great care being taken in handling so as not to bruse the fruit. Two and five-sixteenth rings are used for winter pickings and 2½ for spring and summer, never more than six weeks being allowed to elapse between pickings, and the fruit is usually picked once a month. By careful attention to this, desirable sizes and good-keeping stock are obtained. Neglect of this is the weak point of over 90% of the lemon growers of California. Mr. Teague has made close examination of practice among lemon growers, and concludes that the carelessness with which picking is done is almost criminal. In grove after grove which he visited at least 50% of the values had been lost by allowing the fruit to hang on the tree too long. Not only on account of large sizes would it have to be discounted 50 cents per box; but the keeping quality of the lemon which is allowed to mature on the tree is never good. Good results can not be obtained, even by the best methods of keeping lemons, unless the fruit is picked at the proper time and properly handled. Mr. Teague says a lemon should be handled as carefully as an egg.



Lemon Picking in the Orchards of the Limoneira Company, near Santa Paula, Ventura County.

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The Week.

Agricultural affairs are quiet. Rather than wait for rain some are dry plowing and seeding, and in that way getting some return for time and horse feed, but a widespread, soaking rain is longed for just the same. Everything is ready for it.

A world event which touches California rather close is the quiet revolution in Russia by which the Czar proposes a constitution and a popular assembly. We have many good California citizens who forsook their native country under more or less pressure and circled the world in their restless wandering until they came as near as they dared to the other side of Russia by settling here. The events for which they have long waited seem to be at hand when the great nation of the north shall become at least just to its own citizens. The elevation of manhood in Russia will be of direct advantage to the whole world and especially to west America.

Wheat has continued its upward course accompanied by sensational features and some signs at the close that perhaps some reaction may be expected, though the bulls are still very strong and confident. Barley is also in sharp request, though futures have drooped at the end of the week. Supplies for spot transactions are invisible as yet. The lack of rain, of course, helps the bulls. Oats sympathize with barley, and higher rates are expected. Corn is in larger supply and quiet. Rye is unchanged. Beans are now in large supply, but the situation generally is favorable. Bran and middlings are firm. Hay arrives freely but does not seem to be in excess as absence of rain helps values. Beef and mutton are steady and veal rather slow. Butter is in good shape at recent advances, all kinds being strengthened. Cheese is also firm and in good demand. Eggs are rather restricted by the high rates. Poultry is held to be a little easier, but choice, large stock goes well. Potatoes have improved and onions score an advance. New oranges are selling even better than last week, but lemons have declined a little. Apples are taking a wide range. Dried fruits are advancing, and raisin rates have been restored. Nuts are unchanged. Honey is dull. Hops are reported selling freely at lower rates. Wool growers and dealers are apart at present.

There is an interesting article upon another page about the outlook for horses in China. There seems to be even a closer proposition in Japan, because agents are now looking up stock in this State. Naturally the war has run Japanese horse stock low, and importations are needed. The report is that buyers are now looking through California for them.

Hop growers' organizations are advancing under the spur of this year's experience, which has not been very satisfactory. It seems that control propositions do not succeed very well, and this gives keener interest to the proposition to escape the current evils in the trade and let the hops go. It is some like the present railroad situation, in which parties are divided as to whether the Government should fix rates or merely arrange that no shipper should have any advantage over any other in the way of rebates. It is theoretically sound that rates should be regulated, but will it work out well practically? It is also sound, perhaps, that growers should fix rates, but can they do it? Organization is, however, a good thing and the only way to get what there is to be had with the advantage of information; it may accomplish more after awhile. The new hop Association at Sacramento makes this declaration:

We do not buy hops to sell again on speculation, nor do we sell hops on commission. We confine our business strictly to sale of the hops grown by our members.

Every bale of hops under control of this Association will be thoroughly inspected and graded at the yards where grown, by the best of experts, and you may rely on all our shipments being true to sample.

Our Association is formed for the purpose of keeping its members in touch with the market and of bringing the growers and dealers in closer communication with each other. We are not a trust. Every member reserves the right to act in his individual capacity in the most independent manner.

The Association is said to include two-thirds of the hop acreage of the Sacramento district. The Willamette growers of Oregon are also reorganizing on a new basis, largely for better knowledge, and a charge is to be made of from 3 to 5 cents a bale on hops produced to create a fund to meet organization expenses. A competent man is to be selected to collect hop information for the Association members only, except when proper authority deems it wise to make any particular facts public. The motto of the newer organization seems to be "all get wise and then each do the best he can for himself."

President Wheeler of the University of California has appointed Mr. J. B. Neff of Anaheim as conductor of Farmers' Institutes in southern California. Mr. Neff is a well known fruit grower of Orange county, and has been for years a leader in the local association of walnut growers and manager of the Southern California Deciduous Fruit Exchange. He has also been prominent as a speaker at Farmers' Institutes in southern California, and is thoroughly in sympathy with University extension in agricultural lines, and will proceed energetically in organizing meetings to be held during the coming winter and spring. Mr. Neff's residence at Anaheim will be of advantage in his work, as it is a central location in a county of notable agricultural specialties, as well as greatly diversified agriculture. All localities in the counties south of the Tehachapi mountains desiring Farmers' Institutes are invited to correspond directly with Mr. Neff.

The interesting announcement is made by the State Commissioner of Horticulture that the thirty-first annual Fruit Growers' Convention will meet at Santa Rosa on Tuesday, December 5th, at 10 A. M., and hold daily sessions until Friday, December 8th. We hope the Sonoma county people will rise to the importance of this meeting and secure a large attendance. The location is very desirable, and if proper local effort is put forth there can be a grand meeting. The people will naturally be inclined to go to the home of Luther Burbank, and that will be a fine starter; but his neighbors should get busy and rally a throng. We have attended a fruit growers' convention in Santa Rosa when the attendance from a distance outnumbered the local attendance—and visitors were really lonesome—but that was twenty years ago. It should be better now.

A solemn warning against handling rattlesnakes is conveyed by the death of a San Francisco man in Napa county. He had the head end, about 6 inches in length, from which the rest of the body had been shot away ten minutes before. This separated head of the snake buried its venomous fangs in the finger of its victim when he was in the act of examining the head of the supposedly dead reptile.

QUERIES AND REPLIES.

Corn in California.

To the Editor:—I noticed an article last spring concerning the experiment being made in the Sacramento valley this year with Indian corn from seed furnished by the bureau of plant industry of the United States Department of Agriculture. The item has elicited some inquiry, and, while I presume it is too early to secure final statistics relating to the experiment, I would like to learn the acreage, as nearly as possible, of corn culture in this State, where it has been most successfully cultivated, and whether it has ever been a commercial product—that is, whether enough has ever been raised to make it an export article. I would also like to learn what success attended the experiment with the light trap for catching the moths that work destruction to the sweet corn.—Enquirer, Lassen county.

The experiments with Indian corn in the Sacramento valley were largely disappointing, although some varieties were promising enough to encourage further trial, which will be made next year. There is no definite report to be made at present. The California acreage in corn for the year 1904 was 54,415 and the product 1,500,000 bushels. This, of course, shows California to be exceedingly small in corn growing, because the product in several of the great corn growing States ranges from 100,000,000 to 350,000,000 bushels. Some of our corn goes to fill orders for export to Mexico, and yet the amount of corn brought into California from other States for local use is vastly greater than any exports of California corn ever made. The counties which grow most corn are Sonoma, Merced, Santa Cruz, Napa, Los Angeles, Kings, Orange, Fresno and Sacramento. Nearly all the other counties grow some corn, but none of them as much as 50,000 bushels. The light trap for catching moths working in corn was found on experiment to be of no value whatever; in fact, more worms were caught away from the light than in the immediate presence of it.

Olives, Peaches and Grasshoppers.

To the Editor:—I began to grow olives under the supposition that they were worth 75 cents a gallon, but I find that I can only get 13.5 cents for them, while pickled they sell for from 60 cents to $1.50. There seems to be a big margin here for somebody.

I have a peach on my place which I find no description of in your book or in nursery catalogues. A Missourian here states that in his State it is known as the Indian. It is never green or yellow, but purple from the beginning, and is covered by a down which makes it look dusty. Inside the skin it is blood-red, and the flavor is sub-acid sweet, something like that of the Elberta, but not mealy like the Muir. It grows to 8 inches in circumference.

A newspaper paragraph a short time ago referred to the fact that a grasshopper disease was being experimented with at Berkeley. I hope this is not a canard, as was a similar paragraph on the grasshopper a while ago.—Rancher, Tehama county.

There is, undoubtedly, a wide margin for the olive pickler who can succeed in producing a good article which will keep well; but no one can succeed merely by getting a recipe. The recipes give the outlines of the process and the materials to be used, but success depends upon judgment gained from experience in the use of the materials to meet varying conditions which arise in the fruit. It is not an easy undertaking, but fortunately those who are proceeding with sufficient devotion and energy are attaining very good results.

The peach which you describe is undoubtedly the Indian cling, an old red-juiced peach of good flavor and sometimes worth growing for a local sale, but of no wide commercial value. The color is an embargo against the production of a satisfactory dried or canned fruit, and is really only suited to eat out of hand, and most people prefer a white or yellow peach even for that purpose.

They are not experimenting with a grasshopper disease at Berkeley, although they have done a good deal of work in demonstrating that grasshoppers can be destroyed by fire and other means. It is impossible to tell whence these wild-cat newspaper reports originate.

Horse Beans, Rye and Corn.

To the Editor:—The horse bean was highly commented upon as a green manure, but its value as a forage or fodder plant has not been definitely given. Have later experiments given satisfactory results for its feeding value? I am looking for a plant to use in a silo. Would you recommend the bean in

question? I have been recommended to plant early rye and follow with Indian corn and make ensilage of both. Would this make a desirable and feasible plan, without irrigation? Is there any pasture grass suitable to the hills in this vicinity that is better than wild oats? Soy beans are reported as not adapted to this climate. I note they were planted in October. Have they been tried as a spring crop?—FARMER, Morgan Hill.

The horse bean has still proved valuable as a green manure plant and further experiments are being made with it, but we have no data as yet to determine its forage value, nor the practice of putting it in a silo. Most plants which are so highly nitrogenous in character do not work well in the silo, carbonaceous plants like corn proving much superior. The advice given you to plant early rye for winter feeding and afterwards corn for silage is good advice, providing you can get a good growth of corn in your locality without irrigation, and undoubtedly you can on proper soils with as early sowing as is possible without danger from frost and constant cultivation to preserve moisture. We know of no grass that will maintain its life on your uplands during the dry season; consequently wild oats or other annual plants are probably the best you can do without irrigation. Soy beans will do as a spring crop on moist land, but they are apt to be quickly checked in their growth by the advancing heat of summer.

Alfalfa and Bermuda.

TO THE EDITOR:—On behalf of some farmers, customers of mine, I address you with the view of possibly getting information on the following subject, to-wit: In a number of instances Bermuda grass has been gradually killing the alfalfa. Is there any way to kill it? In replowing and reseeding the land in alfalfa, is there a way to kill the Bermuda so that it would not choke and kill the young alfalfa? One farmer advanced the idea of waiting a year before reseeding the alfalfa, and in the meantime seeding the land with cowpeas, his idea being that the peas would start to grow a month sooner than the Bermuda, and thereby gaining such a growth as to kill the Bermuda when the latter would begin to grow.—MERCHANT, Kern county.

We regret we cannot give you very satisfactory information along the line indicated in your letter. Some Fresno farmers are making a virtue of a necessity and claiming that there is some advantage in having Bermuda grass grown with alfalfa—in fact, are sowing alfalfa seed on land already set with Bermuda, which they cannot clear out. If it is true that cowpeas will start much earlier than Bermuda, they probably would for a time reduce the growth of the grass. The Bermuda grass will appear in good shape just as soon as the peas begin to fail in the heat of the summer. We do not believe that there is any plant that will hold its own with Bermuda grass as well as alfalfa, and the best thing we can think of is to do as the Fresno people are doing—try to get alfalfa in and then let both plants fight it out their own way.

The Poultry Tick.

TO THE EDITOR:—What is the origin of the poultry tick described in last week's PACIFIC RURAL PRESS, and how can it be avoided? Is it the ordinary "wood tick" found in the wooded sections of this State?—SUBSCRIBER, Livermore.

The origin of the tick is just as obscure as the origin of the chicken. If you are not satisfied with the first chapter of Genesis you can do your own speculation. The tick can be avoided by not introducing it—that is, by adopting suitable quarantine regulations on all material of whatever kind you bring upon the ranch. You may also have to look after the birds which fly over it. It is not a wood tick, so called, but is a specific poultry parasite. There are sheep ticks, hog ticks, cattle ticks, etc., each according to its kind.

Canary Seed.

TO THE EDITOR:—We notice in one of the agricultural papers a report of analysis of the canary grass (Phalarus canariensis) by which it seems to be a desirable grass for growing in some localities. Please let us know if you have ever tested it there and with what results. Do you think it would be profitable crop for hay or for growing for seed?—READER, Des Moines, Iowa.

The Californian who knows most about canary grass for seed and forage purposes is Major Braslan of San Jose. He has grown a large area, produced a large amount of seed, and finds the straw very desirable for fodder purposes, and he is best qualified to give trustworthy information.

Suggestion to Concrete Writers.

TO THE EDITOR:—May I venture a suggestion? We ought to have outlived somewhat the provisional, or makeshift stage, in California by this time. One can but be struck by the miserable wooden water trough in a majority of California homesteads; very commonly in the midst of a mirehole caused by its leaky condition. A good circular trough 2 feet 6 inches high and 12 feet in diameter is not so very costly a thing to build in concrete, as the farmer can generally get gravel somewhere in his neighborhood for the cost of hauling it. A paper written in a thoroughly practical tone on how to set up the forms and build such a trough would, I think, be worth while. I think you would find one of the local cement manufacturers ready enough to furnish such a paper. Follow this up with a practical paper on a concrete culvert to replace the usual board iniquity. This is the age of concrete, and to handle it is quite within the compass of the average farmer when he is once shown how.—JOHN W. FERRIS, San Francisco.

The suggestion is an excellent one. If cement manufacturers would take it up and furnish sample plans and specifications there would be a general disposition to largely use concrete in many farm structures. Meantime, perhaps some farmer will tell us what he has done in this line and how.

The Winter Vetch.

TO THE EDITOR:—Will you kindly give all the information you can in regard to the cultivation, growth and uses of the common winter vetch.—VINEYARDIST, San Joaquin county.

We are recommending the common winter vetch for green manuring purposes, particularly in orchards, securing as good a growth as possible early in the rainy season by early planting, and plowing under in the spring early enough so that there shall be no doubt about the decomposition of the vegetation while moisture enough remains in the soil. This winter vetch proves hardy and a good winter grower in all places (except in extreme low lands, where freezing is hard) and, if you are looking for a plant for the purpose mentioned, it would be desirable for you to make a trial of it. It is usual to sow broadcast about 100 pounds to the acre, or half as much drilled in early would probably give quite as satisfactory result. You can get the seed from the seedsmen in San Francisco. The safe way to proceed, of course, is to try a small area the first year to determine how satisfactory a winter growth you can obtain.

Fighting Oxalis in a Lawn.

TO THE EDITOR:—I have a friend in San Jose whose lawn is overrun with oxalis. It has taken complete possession, driving the blue grass entirely out. Is there any way to extirpate the weed so that it will not grow again? It seems to be very deeply rooted and digging it up does no good.—ENQUIRER, San Francisco.

We know of no way to get the oxalis out of the blue grass lawn, except by actually extracting each plant of it as it appears. This, of course, is only practicable when the plants are scattered, or only cover a part of the lawn. We have been working ourself at this and are making good progress, but it is, of course, exceedingly expensive, because each plant has to be actually pulled out by the roots—not pinched off at the top. In the case of a lawn which is badly covered we can suggest nothing except trenching; that is, to actually dig the whole surface two spades depth, beginning at one end and proceeding so that the top soil is actually thrown two spades depth below, and then reseed the surface. There is no application known to us which will have any effect upon the plant.

Alfalfa Seed Crop.

TO THE EDITOR:—If you could report as to probable crop of alfalfa seed raised both here and in Utah, it would be interesting both to those who have raised seed to sell and those who are expecting to buy.—H. E. DYE, Visalia.

It is impossible at the moment to get such information accurate and broad enough to serve as a safe guide. Probably on clear demonstration of desirability, the crop statistician of the United States Department of Agriculture would take it up.

Coffee Beans.

TO THE EDITOR:—I wish to ask for information in regard to a bean used for coffee, what time to plant and also what kind of soil is best? I have island peat land where I expect to grow other beans. The name of the bean I did not quite catch, but it sounds like Gararanca bean.—SUBSCRIBER, Oakdale.

The plant is one of the bean family, called by the Spanish garbanzo. Its common English name is "chickpea," and botanically it is Cicer arietinum. It is sometimes called the Egyptian pea. It has quite a reputation as a coffee substitute, and most seedsmen can supply it. Time of planting and culture is just like other beans, but not like the true peas, for it is tender like a bean.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending October 30, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

The weather during the past week has been clear and dry, with warm days and cool nights. These conditions were favorable for fruit drying and bean harvesting. Fruit drying is about completed in all sections. The crop of Tokay grapes from the American river district has been picked and shipped; it was large and of excellent quality. The grape harvest is practically completed. Oranges are very promising and nearing maturity. Olive picking has begun in some places and the crop is very good. Large shipments of hay continue. Dry plowing and seeding are progressing rapidly. Feed is getting scarce and in some districts stock are getting thin. Rain is badly needed.

Coast and Bay Sections.

Generally clear weather prevailed the first part of the week, and foggy nights, with clear, warm days, the latter part. Light frosts occurred in some sections, but caused no damage. Dry plowing and seeding are progressing in some sections, but all farm work is very backward owing to lack of rain. A large apple crop of excellent quality is being harvested and shipped from Humboldt county. Pruning is progressing. Bean thrashing is progressing rapidly; the crop is large and of good quality. Rain is badly needed to start green feed and soften the ground for plowing. Dry feed is very scarce in most sections and stock are doing only fairly well.

San Joaquin Valley.

Clear weather, with pleasant days and cool nights, prevailed during the past week. Light frosts occurred in some sections, but caused no damage. Wineries continue to run to their full capacity. Raisins are being packed and stored ready for shipment to Eastern markets; about an average tonnage has been shipped to date. Olives are progressing and promise a large crop. Oranges are making good growth and maturing rapidly; the first carload for this season was shipped from Exeter on the 28th. The crop of Washington Navels is thought to be of even better quality than last year, and will be about an average crop. Dry plowing and seeding continue. Dry feed is fair and stock are healthy and in good condition. Rain is badly needed for green feed and farming operations.

Southern California.

The weather during the past week was generally clear, warm and dry, and was very favorable for the completion of the harvest of the raisin crop. Hay baling is about completed. The showers of the previous week put the country roads in excellent condition for hauling. Walnut picking is progressing; the yield will be generally much less than was expected. A large crop of beans has been harvested. Oranges are generally in good condition, but Navels are splitting a little. The water supply is good and orchards are being freely irrigated.

EUREKA SUMMARY.—Dense fog along the coast the greater portion of the week; warm and dry in the interior, where rain is much needed. Feed short and cattle falling off rapidly. All crops harvested except late potatoes.

LOS ANGELES SUMMARY.—Walnut harvest still in progress; crop is fine, but late. Citrus orchards are in fine condition; oranges are splitting some. Peas are being largely sown for cover. Raisins in the southern districts are safely housed. Vegetables are doing well.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, Nov 1, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	1.76	5.20	4 26	58	44
Red Bluff	00	.18	9 08	2.17	82	48
Sacramento	.00	.02	5.56	1.56	80	44
San Francisco	.00	T	7 54	1.78	74	48
San Jose	.00	.00			78	40
Fresno	.00	T	4.99	1.06	80	44
Independence	.00	.24	.45	58	74	38
San Luis Obispo	.00	.03	4.60	2 14	86	42
Los Angeles	.00	.08	1 14	98	84	46
San Diego	.00	.90	.17	.53	70	52
Yuma	00	.56	.81	.97	90	50

THE FIELD.

How A California Woman Succeeds in Farming.

Mrs. M. E. Sherman of Fresno, whom readers of the Pacific Rural Press know well, has prepared for the California Promotion Committee an outline of her experience for the encouragement of other women who can command similar energy, devotion and insight:

The pleasures of life are full of simple happiness in the country, for there is leisure to enjoy nature, books and friends. The family are gathered closer together by the long evening without distractions to draw them from the fireside. Yes! How much affection the ranch affords. After the family come the faithful animals, the horses that neigh at the sound of your footsteps, the cows who turn their soft eyes to see who is patting their sleek sides, and all the lesser ones that show affection for you. Sometimes after an absence from home it seems as though even the trees and flowers breathed forth a welcome.

In the year 1884 the failing health of my father brought the entire family to California for a permanent residence. Leaving Philadelphia, with its busy social life, and the opportunities of a city, the change to California was a happy one.

My father and mother, believing it best for girls to be independent, gave me some money to use as I thought best. After looking around for an investment that promised well, through the advice of a family friend, I purchased a section of land five miles from Fresno, intending to sell it again when values increased. There was a new but rather queerly built house on the place. The land was raw and unimproved, with the exception of 10 acres of wine grapes, 4 acres of old vineyard of mixed varieties and 30 acres set to almond trees.

The warm dry air of the valley helped my father's lungs, so after a little time it was decided that the family should live in Fresno county for at least part of the year. But after a year of wheat planting the spirit of neighborhood prevailed, and a 40-acre Muscat vineyard for raisin-making was planted. This was steadily added to until there were two hundred acres of Muscats. Meanwhile Bartlett pear, olive and peach orchards followed, and then a table-grape vineyard. The raisin-grape vineyard afforded sufficient revenue to carry the expenses of the young orchards until they themselves became profit-yielding.

The Dairy.—When the family moved to Fresno it was found impossible to purchase butter fit for table use and it was often unfit for cooking. Sending East for books, I took up butter-making and soon found that I had as well to study cows, stables and the cleanliness of the dairy. The alfalfa taste which in some places is noticeable had to be kept out of the milk, as it was impossible to remove it with any means I could command. This taint was conquered, but had led into the study of bacteriology as far as making cultures, to find where the control was needed, and of the cultivation of the bacteria essential to high flavor. The knowledge that we had good butter on our table quickly spread among friends and they begged for a roll or two a week

I was thus carrying on butter-making on a small scale with the usual farm outfit, when the need came for more money to carry out my larger plans, and the surest source of income on the ranch proved to be the dairy. More cows were secured, a small separator and a Babcock test followed. As cows were scarce, two carloads of Arizona nondescripts were purchased, and milking-time for the next month or two was a Buffalo Bill show. The dairy proving a success, fifty head of registered Holstein yearlings were brought from the East, and a steam plant with large separator and power churn was added. This was the first alfalfa creamery, and won the first gold medal ever given to alfalfa butter. The 200 cows paid in seven years an average of $51.65 per cow.

With the registered cows came the fascinating study of breeding to increase excellence, to build constitution and to eliminate weakness and defects. The success of this study has been shown in the results I attained, for in the third generation came Juliana De Kol, the world's prize milk and butter producing cow, which the California Promotion Committee sent to the Buttermakers' Convention held in Chicago during the World's Fair. Fidessa, a winner at Sacramento for several years, and over twenty other cows with records of over 20 pounds of butter per week were bred here on my ranch.

The Vineyard.—Another success has been attained with table grapes. By careful selection the Emperor has been developed into a heavy bearing vine, with large, highly colored fruit in magnificent bunches. When these grapes were first shipped from the ranch the packing was done in Fresno, where the large bunches were cut up to fit small baskets, eight of which were put into a crate. Their value for table use was almost completely destroyed, so I opened a packing house at the ranch, and by laying down the sides of the small baskets managed to pack the bunches uncut. The next season larger baskets were ordered, and all the crate stock was ordered for single crates. Ribbons left from the previous season's raisin pack were used for decoration, and they sold at once for a dollar more a crate than the rest of the pack. Each year we pack with the same care, and now, after having heard that the large package was often more than a family cared to buy of a high-priced fruit, I tried one year sawing some crates in half, thus making a smaller package. This also sold well, so that we try to place in each car 75 half crates. The returns from the Emperor vineyard have always been good, ranging from $10.000 to $15,000 a year after freight, refrigeration and packing material have been paid for. Like the care of the cows, this has been a most interesting work, for in all life the same laws prevail, and if the grower does not constantly build up the strength and carefully select his vines and trees there will be only a minimum of success. Pedigree is as important in a plant as in an animal. In the vineyard fertilizing and pruning, spraying and clean cultivation put the vines in the best conditions for bearing. Quantity of fruit must give way to quality, for quantity makes pig feed, while quality makes money.

Orchard Experience.—My olive orchard also has a pedigree, being only two generations from the trees of an old mission. We had a friend who grew the trees from cuttings from the bearing wood of his own orchard. At four years of age these trees bore a half crop, and have not failed since. The olives are so large and fine that the first two sizes have been sold under a five years contract for $75 to $80 a ton f. o. b. Fresno. The smaller olives are pickled for local trade, and oil is made that sells readily in the East in case lots among private customers.

These are successes, yet without a few failures they would be less sweet—the beautiful Bartlett pear orchard, just when at its best, and when the brand had built up a reputation for good packing and prices were increasing, the blight came. Through each winter, in hopes of saving at least a portion, the blight was carefully removed under antiseptic conditions, yet each year the trees had more cut off than the summer growth renewed, until only pitiful stumps remained, and these were finally cut up for firewood. The second failure was the peach orchard. It bears well, but "haste made waste" and the trees were foolishly bought instead of being grown and budded to order. They were labelled as Early Crawfords, Muirs and Orange Clings. How many varieties of peaches are cultivated I do not know. I feel sure, however, that I have every one of them in the 40 acres.

The Joy of It.—Now, I have tried to tell you about a woman's experience in ranching. I find ranch life full of joy. To all it is not given to create pictures on canvas or to enrich literature. These are special gifts. But who cannot plant a tree and make a picture against the sky? My memory calls up the picture of the Fresno plains of twenty years ago, covered with yellow stubble, the sun burning down and spirals of dust whirling up like dancing dervishes, the only motion in the tense stillness. To-day my vines and trees spread a living green over these plains, the birds sing, and the cool sweet wind comes over the alfalfa fields when the cows are standing knee deep in the purple-tinted greenery.

Yes! it is a life worth living, for when the time comes to fold my hands in a quiet old age, how much sweeter will be the rest, for the struggle toward improvement has been with kindly nature and not with restless humanity.

HORTICULTURE.

Small Fruit Growing.

To the Editor:—This article is intended for beginners in starting small fruit, where irrigation is possible. After inserting a small advertisement in your columns setting forth the merits of a perpetual bearing strawberry I am raising, I received a great many inquiries, not only about this particular variety, but concerning fruits in general—so many and varied are the inquiries that, indeed, I have found it quite impossible to spare the time to answer even a very small portion of them.

I have been engaged the past twenty years in this business in Lake county and have been universally successful in raising all varieties I have attempted thus far, although there are, no doubt, those varieties I have not attempted that would not do well in this apparently favored section.

The first essential, of course, is the proper soil, and for berries we require good soil; soil that will raise good corn will raise good berries. Berries require plenty of water; I irrigate all my berries. Set strawberry plants 3½ feet one way, 18 inches the other way; raspberries and blackberries 3 feet one way, 5 feet the other way. I use a single wire to hold them to the row. As you recently said in answer to a question, the wire does not get hot from the sun's rays and blight the plants. Some varieties of blackberries and raspberries will sunburn, however. These troubles will be avoided by buying your plants at home, those plants that are acclimated, and then you may water at any time, except during the middle of the day when the ground is hot. Plants are improved by grafting; sandy soil needs more water than clay or adobe land.

Get the best plants in the first place. You will have to pay more for them, of course, but in the course of your career you will find it much the cheapest; I do not think much of the so-called Japan Wine berry for home or market; the Logan is a good berry for pies and jellies; the white blackberry is a good, sweet berry for home use, but is a poor shipper; the perpetual bearing strawberry will bear the twelve months of the year, if not killed by the frost. It is the finest berry I raise for home or shipping. Everbearing berries bear from the new shoots the same season they come up. In the fall they should be cut back below where the berries were. The same canes will bear the next season. Hybrid berries have fewer seeds, more pulp and richer flavor than the older varieties. Hybrids are the result of crossing different varieties. The finest of flavors are often found in seedlings, some of the best apples, grapes, peaches and strawberries being from the seed. It generally takes a number of years to get the cross to perfection, hence the greater cost of such varieties. I cannot tell you all the names of the berries—some varieties having several names. I think there are some 200 varieties of strawberries and fifty of black and dew berries. Do not bother your head about the so-called tree varieties—I have tested them. Fall planting is the best. You gain one year by planting at this season. J. C. Everson.

Middletown.

Revival of Old Olive Trees.

Acting Consul Lontus of Patras, Greece, in writing about the prospects for a crop of olive oil in the island of Corfu, says:

The average olive oil crop of the island of Corfu for the last fifteen years has been one-tenth of what it used to be. The average age of the olive tree is from 300 to 400 years. They are very little cultivated, and the small production in recent years can not be set down to the age of trees, as ten or fifteen years ought not to make any appreciable difference in a life of 300 to 700 years. One thing that militates against the healthfulness of the trees is the prevalence of damp southerly winds, which proves very ruinous, especially to young trees, causing worms and injury from flies. These winds occur in the months of September and October.

The prospects for the coming crop are most encouraging—much better than for many years—and if the southerly winds do not play their usual havoc the production of olive oil will far exceed that of any year since 1890.

TRACK AND FARM.

Breaks all Quarter-Mile Records.

The Hoosier State, says the Orange Judd Farmer, gives to the world Princess Manlove, a two-year-old filly, whose unofficial record for 1 mile is 2:10¾; half a mile, 1 minute; one-fourth mile, 27½ seconds, this last being a 1:50 gait. This remarkable colt was bred and is owned by John T. Manlove of Milton, Wayne county, Ind. She is sired by Hal Dillard, 2:04¾, and her dam is Gussie B, with no record because of the fact that one of her legs was broken when quite young and she was never put on the track. Gussie B. was sired by Gusto, with a three-year-old record of 2:19½. Gusto was sired by Gambetta Wilkes, a stallion which, with one exception, sired more standard pacing performers than any other living horse. Princess Manlove's second dam is by Harry B., and he by Blue Bull 75. Consequently the filly is a Hal and Wilkes filly, with Blue Bull for an out cross.

Princess Manlove was two years old in June, 1905, and is a solid chestnut. She is now 15 hands 1½ inch, and will be 15 hands 3 inches when mature. She weighed on the morning of October 15, 1905, just 880 pounds. In action her work is pronounced perfect by competent horsemen. She never makes a break nor a misstep. She is just the right size. In appearance she is a beauty. Her dark chestnut color, her wonderful tail of gold, her neat, clean cut head, her beautiful eyes, her animated appearance, the sureness with which she moves, all go to make up an ideal harness horse.

Only a few weeks ago she was unknown. Mr. Manlove began to work her out and she showed speed. This work he continued in a quiet way until Friday, October 6, on the mile track at Cambridge City, Ind., and she made her wonderful quarter in 27½ seconds, a 1:50 gait. This record is unofficial, but at least twenty competent horsemen and judges timed her, and all agree to this figure. This track has been a good one in its time, and is still a very fair track, but has not been used freely of late years, and the owner, Mr. J. S. Lackey, stated that it was at least three seconds slower than the track at Lexington, Columbus or Indianapolis. The day the trial was made the wind was very strong, but otherwise the weather was fair. Mr. C. A. Shamel of Orange Judd Farmer says he has seen this remarkable colt make the quarter in 29½ seconds on the afternoon of

October 14, when a strong wind prevailed and the track was rather soft. This trial came after a week of comparatively cool weather, and while the little filly was in splendid condition, she would have made better time had the trial been made following a number of days of warm weather. Not only this, but the track was soft enough so that the runner which accompanied the filly "cupped out" at least 1½ inch at every step.

Directly, now owned by W. L. Wood of Liberty, Ind., has the world's record for two-year-olds, 2:07½. This was made while owned by Mr. Salisbury of California. Once while on trial he made a quarter in 29¼ seconds. It must be remembered that Directly had the best chance in the world and the best possible track, with millions of dollars behind him, and had the experience of one campaign. J. S. Lackey, whom every fast horseman knows is a man of splendid reputation and good judgment, states that after seeing her going her mile in 2:10¾, he thinks she could do it easily in 2:08. In training it would be difficult to say just what the little mare could do.

Chance for American Horses in China.

In response to inquiries of persons in the United States interested in breeding horses for shipment to foreign countries, and in establishing a line of steamships to carry fresh meat by cold storage to the Orient, Special Agent Burrill was instructed to make inquiries in regard to these matters. It seems there are comparatively few draft animals other than those raised in China, and that nearly all imported animals are brought from Australia. Mr. Burrill describes existing conditions, and is inclined to the belief that there is a fair field in China for the introduction of American horses and mules. His letter on this subject follows:

That there are no American horses in northern China is probably due to the fact that no determined effort has ever been made to introduce them, and the market, though limited, offers inducements of which the American exporter might profitably take advantage. Practically all the horses now in use in this part of China are imported from Australia, for no special reason apparently other than that the Australians are keen traders, and with frequent consignments, in the absence of all competition, keep the market well supplied. While foreigners and the wealthier class of the Chinese are not dissatisfied with the horses now imported, it does not follow that they are so prejudiced in their favor that they would not welcome an opportunity to compare them with the American grown animal, and horse dealers here unhesitatingly express the belief that horses bred in the United States would not only stand the climate well, but would be only temporarily affected by the necessary change of feed.

Kind of Horses Preferred.—Australian horses are usually shipped on consignments averaging 25 head each, and are handled on arrival by the Shanghai Horse Bazaar Co. (Ltd). When in good condition the prices obtained at the first public sale range from $175 to $250 each, exceptionally fine animals, of course, commanding higher prices. The preference here is for riding horses 14 to 15 hands high and for driving horses 15 to 15.2 hands high. Fine, upstanding, showy horses are most in demand, and if hardy and properly acclimated bring exceptionally good prices and have a ready sale. Cross-country riding is very popular during the winter months, but is abandoned when the planting of crops begins in March. Driving, however, is indulged in the year round, the macadamized roads throughout the foreign settlement and extending far into the country about Shanghai, and which are kept in excellent condition, affording opportunities for recreation and enjoyment which are in sharp contrast to the narrow, unevenly paved roadways of the native city.

Horses From Australia. — Australian horses shipped from Sydney arrive in Shanghai in about three weeks' time, and although a part of the trip is made through the Tropics, they appear to stand the journey reasonably well. Temporary stalls, each of which accommodates one horse, are erected on board ship. Wooden bars are so arranged as to prevent the animal from leaving his quarters, and cleats or crosspieces are fastened to the deck of the ship that a foothold may be retained in the event of rough weather. The freight rate from Sydney to Shanghai is approximately $50 a head, which includes a return trip fare for the man in charge of the consignment. On their arrival here the horses are immediately taken to the sales stables and gradually accustomed to the Chinese feed of bran, barley, and rice straw. In a few weeks, the time depending on the condition of the horses, they are sold at public auction and the proceeds, after deducting expenses, are transmitted to the Australian owner.

In order that imported horses may become thoroughly acclimatized before the hard work of the winter begins, dealers prefer that they should arrive here in the summer months, and, as the seasons here correspond with those in the United States, it is suggested that the months of June and July would be the best time for shipment. A few Canadian horses have been imported both for riding and driving purposes and have invariably shown greater adaptability to climatic conditions than have the Australian horses. These horses, however, were not sent on consignment, but purchased direct for private use.

Opening for American Horses.—There were 1900 horses licensed in Shanghai in 1904, and probably 1000 more would cover the whole number licensed in the Chinese Empire. These figures include the Chinese ponies, which greatly outnumber the Australian horses, and these two classes are the only animals used for riding and driving in Shanghai. The ponies are all raised in the Province of Mongolia and are hardy, wiry little animals, standing from 12 to 13.2 hands high. They pull a heavy victoria or brougham with as much ease apparently as the horse, and will keep going until they drop from exhaustion. They, however, would in no way compete in or interfere with the market for American horses if it were decided to make an effort to introduce them.

There are a few mules here that were imported from the United States which are used for heavy trucking, of which there is comparatively little in northern China. Cooly labor is utilized for this purpose. As he is the cheapest and most docile carrier of burdens, strong, and able to live on little, taking up little space, and requiring no comforts or attention beyond supervising his work, he is made use of for transporting goods which, outside of the Orient, would call for the services of strong truck animals. For these reasons practically no demand exists for horses or mules ordinarily used for hauling heavy loads.

Hints for Shippers.—If an American shipper should desire to enter the field in competition with the Australian horses it would be necessary to arrange with a Shanghai dealer to receive and handle a consignment in the way that is now customary in this market. By communicating with the general manager of the Shanghai Horse Bazaar Co. (Ltd.), such information as would be necessary for guidance in properly transporting the horses could be obtained and the commissions, incidental expenses, and terms of settlement explained. While the market is not a large one, it is of sufficient size, in the judgment of those whose opinion may be relied on, to justify a trial with conditions favorable to the establishment of a paying industry.

THE POULTRY YARD.

A Comprehensive Statement About Trap Nests.

A writer for the American Poultry Journal prepares the fullest account we have yet seen of the advantages of using trap nests, and consideration of it will doubtless be interesting to our readers, as we are now at the beginning of another laying season. The trap nest was certainly a happy thought, and each year its value is being more generally appreciated. It is the safest and quickest method for us to adopt to secure better laying and better eggs. There are entirely too many drones annually quartered on every farm, which not only fail to pay their board, but are crowding the workers out of the flock.

To Detect Freaks.—If the trap nest were used for no other purpose, it would be worth the attention it requires to thus separate the idlers from the industrious. The most beautiful and best marked light Brahma hen on our farm laid only eleven eggs during the year when a yearling. What she laid as a pullet we do not know, as we did not use trap nests at that time. It certainly would not be profitable to keep such a hen, and yet she was good enough to put in a show room. The first year we used trap nests we discovered that about a fourth of our flocks were not worth breeding from. The next year we secured 20% more eggs with 25% less hens—we bred only from the cream. In other words, we got more eggs for less expenditure for feed and labor. Surely the trap nest paid us for the attention we had to give.

When the demand grew for brown eggs of the white Wyandotte breed, we discovered that about one-fourth laid white eggs and one-half gave us tinted eggs. One hen in particular laid a rich dark brown egg.

The Best Layers.—We set all the brown eggs and then started in to pick out the brown-egg layers. The trap nest caught them for us. To our surprise, all these brown-egg layers were among our poorest layers, while the best layers gave us a pure white egg. Here we were confronted with a problem: "Which would be the wisest—breed from these hens merely for color of shell, and ignore their egg record, or breed for quantity of eggs, regardless of color of shell?" We determined to work for the brown color first, as the call was greater for them, and then annually pick out the best layers in that lot and work for higher records. The latter experiment is now in force and by next year we expect to give results.

The trap nests have also taught us which hens lay the best shaped eggs, which the largest sized eggs and which the best fertilized eggs. It is a remarkable fact that there are hens in a flock that never give us good fertility, and again there are others that are very strong in that particular. Is it not worth the time to gain this knowledge?

Egg Eaters.—Another great service that the trap nest performs is to arrest the egg eater. If you have reason to suspect that a certain hen (which is found quite frequently upon the nest and apparently never lays) is guilty of eating her eggs, give her an egg while she is on the nest. If it is not there when you look again, you have pretty good evidence that you have caught the right party. Decapitation should be the sentence.

You cannot always tell your good layers by the number of times you find them on the nest. It is remarkable how often a hen will go on the nest and not lay. The trap nest will point out all such. The trap nest, too, will tell you which are your best winter layers, which pullets begin laying early in the season, the number of eggs they lay in succession, the number of times they become broody during the year, and many more facts which can be obtained in no other way.

The trap nest exploded a theory that for years was credited by the poultry fraternity. It was the cause of the pigeon-sized eggs. The theory was that it was the end of the litter, and that the hen which laid this egg would not be likely to lay any more for some time. No one disputed the theory until we had three hens lay these small eggs, and in every case they not only kept on laying, but the natural size of the egg was again resumed. One of these hens was very fat, but the other two were not; but we believe that the trouble is due to some fatty accumulation around the egg organs.

Objection has been made to the trap nest on account of the time required to attend the same. We find that little time need be spent with hens if a regular system is adopted. Every hour the attendant makes the rounds. He stops only at the closed nests. He opens the little door and if the hen is still sitting on the nest the door is closed until the next round. If the hen has laid she will be standing up, waiting to be taken out. Five minutes each hour will be all the time necessary to attend to fifty nests, or about one hour's time during the day. No hour during the day could be put to more practical use.

The claim has been made that hens are apt to break the eggs in their work to get out. The truth is, we have had only four eggs broken in the entire year, and they were rather thin-shelled. We had fully that many broken annually before we used the trap nests.

Trap nests make tame hens. At first they object to being caught, but after awhile they take the matter more pleasantly and there is no trouble. We have our hens so tame that when we open the door they stand ready to be taken up so we can ascertain the number on their leg bands.

Experience.—F. O. Wellcome, Yarmouth, Me., gives the value of trap nests in this paragraph:

"The man who can foretell the sex of the chick by the shape of the egg; who believes that eggs will hatch more pullets under hens than in incubators; who is rejoiced when he finds a double-yolked egg; who always recognizes the pigeon-sized egg as the last of some hen's 'litter'; who believes that a single service fertilizes but one egg; who knows which of his hens are the best layers and how many they lay; that man does not have to use trap nests—he knows enough already. On the other hand, however, whoever wishes to become personally acquainted with each and every member of his flock, able at all times to provide for their individuality as well as their collective needs as indicated by the eggs, which often reveal a condition that cannot be ascertained by an examination of the hens themselves; whoever desires to act as timekeeper and accountant for each of the feathered laborers in his service, and be able to reward the diligent and discipline or discharge the shirks; he who, believing that 'like begets like,' would wed industry with prolificacy in the breeding season, must use the trap nest."

There are a number of makes of nests upon the market. The practical nest is large, well ventilated, open in the front to take out the hen. In other words, it must be a nest comfortable to the hen and convenient to the attendant. When you make your selection govern yourself by those facts.

Some poultry farms use trap nests to pick out their early layers. On these farms incubators are used, and in each flock are pullets of the same size. As soon as the pullets are placed in these pens the trap nests are set and a nest egg placed in each. By the time the pullet wants to lay her first egg she has become acquainted with these nests, and she goes in them to lay.

On these farms, all pullets that begin to lay not later than January are "branded" (that is, band put on one of their legs) and reserved for breeding. The rest go to market.

How the Hens Like It.—The question has been asked: "Do hens suffer from being imprisoned in these nests?" Not if the nest is well ventilated. At first the hen tries to get out, after laying her egg, but when she finds that she is unable to do so, she seems to be content and awaits her release with good grace. We have tried these traps with hens of all kinds of dispositions, and have yet to find a single instance where there was any suffering from the confinement.

"Have you ever found any hens dead on the nest?" Yes, we have. So have we on the ordinary nests. When hens are very fat they quite frequently die from apoplexy while endeavoring to lay.

"Does not this imprisoning hens and the frequent

handling have a tendency toward injuring the egg record?" No. Hens become more tame when thus frequently handled, and, if anything, we believe, the fact that they become tame would rather have a tendency to better laying than poorer.

"Would it not save time if an attachment could be made to these traps so a hen could release itself after through laying?" There is no doubt but that such an arrangement would save time, but of what benefit could it be? How could you know which hen laid the egg?

We have seen a similar scheme advocated where the hens were allowed out into a room. At night the attendant looked up the number of each hen and credited them with the number of eggs laid. In other words, if hens Nos. 15, 18, 20 and 22 were found in this room, and four eggs found in the nest, each hen was credited with an egg laid. But if only three eggs were found in the nest and four hens in the pen, then came the question, "Which hens laid?" Such a report must, necessarily, be guess work. One of the advocates of this method said that, by comparison of eggs laid before, it can be quickly determined. It is true that quite frequently we have hens that have a regular "trade mark" upon their eggs, so that they look really as if molded to a certain pattern. But, on the other hand, we have had hens lay eggs no two of which were exactly alike. One hen in particular would lay all varieties—long eggs, round eggs, small eggs and large eggs. So the only reliable method is the one which captures the hen and holds her until released. Accounts, unless they are accurate, are not worth having at all.

In conclusion, allow me to say that the trap nest has come to stay, and the better we become acquainted with its workings the better we like it, and the more will we be determined to hold on to its method of teaching.

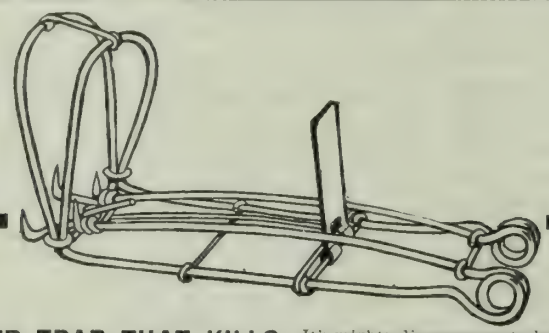
Fattening Fowls.

To the Editor:—Some of us wish to try fattening poultry by the crate method, but all the rations we know of are of Eastern origin and are composed chiefly of buckwheat meal, which we do not have. The grains we have raised are worth as follows: Wheat, $1.60; oats, $1.40; corn, $1.50; barley, $1 10. We can buy bran at $1.60 and horse beans at $1.25, and expect to do what grinding is necessary ourselves. What can be substituted for the buckwheat? Is there not enough poultry sold by the pound in the San Francisco market to warrant the Pacific Rural Press in quoting poultry that way as by the dozen? —H. O., St. Helena.

To the Editor:—In response to the above inquiry I would say that wheat, shorts or middlings of good quality can be successfully substituted for ground buckwheat for fattening poultry. A practical ration that has yielded excellent results at the Ontario Station consists of a mixture of two parts of each of barleymeal, cornmeal, shorts and middlings and finely ground oats, and one part of animal meal. This mixture is moistened with about one and one-half times its weight of skim milk. Water can be substituted for skim milk, but the returns are better when the latter is used. Too much cornmeal should not be fed, as it tends to produce yellow flesh, which is not desirable. Ground horse beans are exceedingly rich in protein, averaging over 25%, and consequently should form a valuable addition to the ration for poultry. The Maine Station has also proved conclusively that buckwheat is not a necessary ingredient of the ration for fattening poultry. M. E. Jaffa.

University of California, Berkeley.

It is not easy to get poultry values except in the usual way, by count, excepting such as are now priced by the pound.



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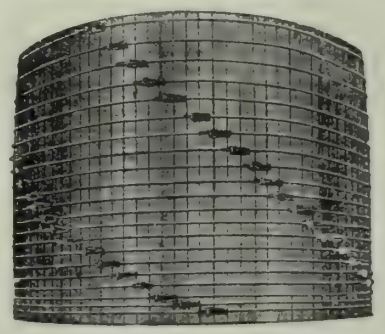
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Agricultural Review.

Butte.

BUTTE ORANGES FOR AUSTRALIA.—Oroville special to Sacramento Bee, Oct. 25: The experiment is to be tried at Palermo this season of shipping oranges to Australia. The fruit will be shipped from the big Hearst estate ranch, and picking began to-day. The voyage will require seventeen days from San Francisco, and, although the fruit appears rather green, it is believed the trip through the tropics will color it up in good shape for the market. Six hundred boxes will be shipped on the next outgoing steamer.

El Dorado.

GOOD GRAPE SEASON. — Placerville special to Sacramento Bee, Oct. 28: The grape season in this part of the county is about ended. It has been one of the most successful in many years. Over 600 tons of wine grapes have been shipped out, and as these brought on an average of $13.50 per ton, the season has been a prosperous one. The fruit crop generally has been good throughout the county. The only complaint now is the lack of rain.

Napa.

GOOD SEASON FOR WINE MEN.—Napa Register, Oct. 27: This week witnesses the closing up of the wine-making season in Napa. Migliavacca & Co. commenced crushing early and received their last grapes Monday. They bought of vineyardists in Napa, Sonoma and Yolo; paid good prices and made the usual quantity of wine. Carpy & Co. expect to receive the last shipment of grapes directed to their cellars next Saturday. They report a favorable season and a fine quality of wine. The last of the first crop of grapes will be in about Saturday at L. Christin's wine cellar on Pearl street. After that there will be no grapes until the second crop comes in. "The quality of the grapes this year has been the best since I have been in Napa," said Mr. Christin today, "and I am perfectly satisfied with this season's output."

Placer.

EARLY ORANGES $5 PER BOX.—Rocklin dispatch to Sacramento Union, Oct. 29: Two cars of oranges were shipped to San Francisco to-day for Australia, where Placer county oranges are in demand. Sixteen boxes shipped from J. Parker Whitney's ranch on Oct. 11th, although not as well colored as they are now, were sold for $5 per box. Since Oct. 14th oranges have been steadily going into the San Francisco market from the lower foothills of this section. By careful computation, J. Parker Whitney states that it costs in the neighborhood of 80 cents a box to put a package of Navel oranges on the cars.

FRUIT OUTPUT.—Placer Herald, Oct. 28: The fruit output of Placer county this year is, as estimated from fruit house reports, 2868 cars. This does not include the orange crop, which, it is expected, will easily reach 75 carloads. The second shipment of ripe navel oranges was made Monday from the Valle Vista orchards, near Lincoln, owned by I. E. Thayer of San Francisco. The first shipment was made October 16th.

Riverside.

COST OF GROWING LEMONS.—J. E. Mosely, of Corona, in answer to a query by the Pomona Review, says that his ten acres of lemon orchard during the year that began Oct. 1, 1904, and ended Oct. 1, 1905, have produced lemons that have yielded $2776. Previous to June 1, subsequent to Oct. 1, 1904, he sold lemons from the same grove that netted $503. That makes $3279 from the grove during twelve months. He finds that he can grow lemons in an average year, for 46⅓c a box, and can pay all orchard expenses with that sum per box. He got $2.83 for 312 boxes of lemons in August. The fruit sold in New York for $5.06 a box. He sold his summer and fall lemons at an average of $2.03 per box, net, from June 5 to Oct. 1.

Santa Clara.

PUNQUALITA SPECIMENS.—San Jose Herald, Oct. 28: A rare fruit from the South Sea Islands is attracting much attention in the yard of C. W. Quilty at 156 South Third street, San Jose. This fruit was imported last spring and is of an unusual and interesting variety, being different from any grown in this country, and is noted for its delicious flavor and strangely colored rind. The fruit, the punqualita, is of the creeper species, and its handsome foliage completely covers a large rockery in Mr. Quilty's garden. The fruit will be sent to Luther Burbank, who is interested in its propagation.

Santa Barbara.

LEMON SHIPMENTS.—Santa Barbara Press, Oct. 26: The lemon shipments from Santa Barbara county for the season ending Nov. 1 will be between 250 and 300 carloads, and the prospects for the coming season are very bright, although there will be some loss through the recent wind and forest fire. The net returns to the growers during the season now closing have been better than for many years.

Sonoma.

VINTAGE SEASON OF 1905 FINISHED.—Healdsburg Enterprise, Oct. 28: Grape crushing so far as this section is concerned is finished, the various wineries winding up the season last Saturday and Monday. An excellent quality of wine was made, but the output, as expected early in the season, was considerably short. The grape men have secured fair prices and it is up to the wine maker to await results, and what the prices will be is as yet unknown. Louis Bee of Cloverdale, it is reported, has already sold this year's wine for 17 cents, and is now engaged in making shipments of the same to San Francisco.

FALL WOOL CLIP. — Cloverdale Reveille, Oct. 28: Wool sale day brought quite a number of growers to town Tuesday. But little was done that day in the way of selling. Buyers offered 16 cents per pound, but the growers held off, believing they would receive a higher price for the product. There were no outside buyers in the field, W. T. Brush and S. Pinschower, the local brokers, being the only ones to make offers on the fall clip. In a talk with Mr. Pinschower Friday morning, he stated the average price paid was 16¼ cents; some, however, having a superior grade, receiving 16½ cents. The average price paid for the fall clip of 1904 was 17 cents. The spring clip of this year sold at the average price of 28 cents.

SANTA ROSA SELLS ITS HOP CROP.—Santa Rosa dispatch to Chronicle, Oct. 27: The city of Santa Rosa has sold its hop crop, amounting to more than 300 bales, at 10½ cents a pound. They were disposed of to-day to C. C. Donovan, a local buyer, the price being ½ a cent above market quotations. Last year the municipality purchased 100 acres of land from Harry L. Hall and Harvey Brittain for an addition to their sewer farm, and these acres contained a crop of hops. The city employed men to care for, pick, dry and bale the hops, and is now extensively engaged in the industry.

Shasta.

HOGS IN SHASTA.—Redding dispatch to Sacramento Union, Oct. 25: This is going to be a great season for hogs in Shasta county. While the late fall may be a handicap to cattlemen, the absence of rain keeping back the green feed, the hog men are successful. Hogs have never done better than they have this year. The crop of acorns is the biggest in years. G. W. Maynard of Round Mountain says the hog business is the best going this year. The bitter oak mast that the hogs are getting is just what the hog men want.

Stanislaus.

GRAPE RAISING IN STANISLAUS.—Stanislaus County News, Oct. 27: Frank and Joseph Martin of Salinas have bought the F. F. Harwick ranch of 520 acres seven miles southwest of Modesto, and this winter will experiment to see if wine grapes can be grown successfully on sub-irrigated land. If their expectations prove true they will plant 80 acres at once, and later the remainder of the ranch. Along with the wine raising the new-comers will do extensive dairying with 115 head of cows. The experiment on this large scale in grape-growing, however, shows the possibilities of wine-making as a commercial industry in Stanislaus county. Just now the experiments being made at Woodbridge, in the neighboring county of San Joaquin, may be of value to our growers, who are becoming numerous in the southern portion of Stanislaus. The viticulturists of San Joaquin county in the locality mentioned have formed the Woodbridge Vineyard Association, put up cash and built and are operating a large and well-equipped winery.

TURLOCK CROPS GOOD. — Stanislaus Weekly News, Oct. 27: W. Phillips, who is collecting statistics throughout the county for the use of the Secretary of State, has returned from Turlock and reports that he found that section of the country to be in splendid condition. All the crops grown by the Turlock farmers, with the exception of sugar beets, have given large returns, with every promise of an increased production every year. The sweet potato crop is unusually large, 41 carloads having already been shipped, while the growers estimate that 250 more carloads will be shipped before the season is over. Another Turlock industry which promises well is peanut growing, and one instance will show that the sandy soil of that district is suited to the nut; one planter harvested 3 tons of nuts from 2 acres. Thirty-five acres were planted in peanuts this year and as the crop produces well and pays well this acreage will be increased next year. Among the other paying crops of the Turlock district are watermelons, of which J. M. Martin of this city shipped 52 carloads, and pink beans, which will yield a 40-ton crop this year. The grape growing industry also promises to bring a big income to Turlockers in a few years, if the harvest of 2 carloads of grapes from 35 acres of two-year-old vines by Warren Bros. is any criterion.

Tulare.

FIRST CARLOAD OF ORANGES.—Exeter dispatch to Sacramento Bee, Oct. 28: The first car of the 1905 orange crop was shipped from Exeter this morning by the California Citrus Union, and was consigned to a fruit company at Winnipeg, Manitoba. The shipment of oranges from this county will commence in earnest next week at the rate of fifteen cars per day. The crop of Washington Navels in Tulare county bids fair to be of even better quality than last year, and will be about an average crop.

Monroe, Mich., Jan. 25, 1905.

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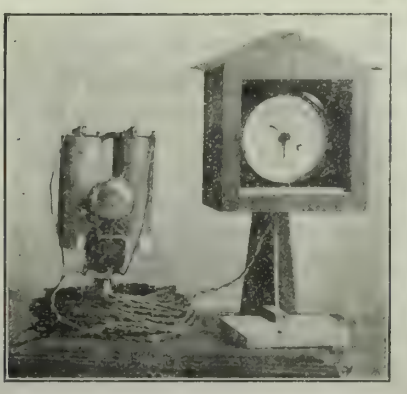
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The Home Circle.

Why?

Why, muvver, why
Did God pin the stars up so tight in the sky?
Why did the cow jump right over the moon?
An' why did the dish run away with the spoon?
'Cause didn't he like it to see the cow fly?
Why, muvver, why?

Why, muvver, why
Can't little boys jump to the moon if they try?
An' why can't they swim just like fishes an' fings?
An' why does the live little birdies have wings,
An' live little boys have to wait till they die?
Why, muvver, why?

Why, muvver, why?
Was all of vose blackbirds all baked in a pie?
Why couldn't we have one if I should say "Please?"
An' why does it worry when little boys tease?
An' why can't fings never be now—but bime-by?
Why, muvver, why?

Why, muvver, why
Does little boys' froats always ache when they cry?
An' why does it stop when they're cuddled up close?
An' what does the sandman do days, do you s'pose?
An' why do you find he'll be soon comin' by?
Why, muvver, why?

—Century.

Mrs. "Hair" Putney.

Mrs. Gaines's oldest boy threw Mrs. Putney's door wide open, with a bang.

"Man come to see you!" he announced, loudly. "Great, big, tall man!"

The man entered directly behind him, and close at his heels came the other three young Gaineses, who disposed themselves around the room comfortably and expectantly.

"Well, Sar' Ann Putney!" said the caller, in a resounding great voice, and dropped his large valise and picked up both her hands in one of his.

"W'y, Joseph Wolcott!" Mrs. Putney faltered. The top of her gray head was considerably below his shoulder, and she took a step back, the better to look up at him. She was flustered; her hands trembled a little. The four Gaineses had possession of all the chairs, and did not offer them to the visitor; so she brought two from another room.

"You've kept your looks wonderful well, Joseph," she said, after a moment of inspection. "You don't look any older'n you did when you went West."

Joseph laughed. Surveying the little, narrow-shouldered, anxious-looking woman, he could not answer in like vein. His attention centered, against his will, upon the knot, as large as a walnut, into which she had drawn her faded, sparse hair.

"You know I always was powerful handsome," he responded with a grin so good-natured that it really made his plain features almost handsome. He was a heavily built man, 6 feet tall.

"I didn't know as you was any nearer than a thousand miles," said Mrs. Putney.

"Martha thought of sending you word I'd be here, but I told her you'd know it when you saw me. I've been away from home three weeks. I've been shipping horses to a dealer in New York for five years, and I thought I'd come and see him; I had some things to buy, too, and I bought 'em down there. And I didn't intend to go through Ohio without stopping to see the old town and you, Sar' Ann."

"Martha ought to 'a' come along with you."

"You'd have to take a gad to Martha to get her away from home. She thinks Iowa's good enough to live and die in. She's always been happy as a clam out there."

"I know it," said Mrs. Putney.

She looked at her cousin's husband with a rush of memories. She had not seen Martha for years, but her portly figure and her comely, smiling face were a distinct picture in her mind. To Martha all the pleasant things of life had come easily.

"She's well?" asked Mrs. Putney.

"First-class! She tips the scales at a hundred and eighty. They give prizes at our country fair for the biggest woman, and Joe and I threaten her every fall that we'll enter her. Joe's married, you know, and got two children. He's stock-farming it, too. Well, now, Sar' Ann, how are you?" He leaned forward on his folded arms and eyed her. "I suppose you're Mrs. 'Hair' Putney same as ever?"

Mrs. Putney nodded.

"Just as many folks as ever, are there, that want switches and false fronts?"

Mrs. Putney cleared her throat. "There's some. There's a hair-store in Austinville now, has been for two years, and folks go there considerable. I make rugs some now, rag rugs, and I've done some crocheting and one thing or another."

"Who do all these young ones belong to?"

"The Gaineses. This is a wing of their house I'm living in."

"I went down to your old place first," said Joseph, with some hesitation. "I didn't know you'd left it. Who are the folks you rent it to? I didn't know 'em."

"I sold it. Gaylord's their name."

"Bring a good price?"

"Fair," she added, with an effort, her thin little face reddening. "Lyman Hill held a mortgage on it, and there wasn't much left."

Her visitor dropped the subject of her affairs. He tweaked the ear of one of the little Gainses.

"How's Chauncey Larkin? He and I was thicker than spatter when we was boys; I guess he hasn't forgot me. How's the pages? I heard Phœbe'd got married again. Is old man Driscoll alive yet?"

It was eleven o'clock. When they had talked for half an hour longer, Mrs. Putney left Mr. Wolcott turning the leaves of her album, and put on her bonnet and went out. Bread and tea and potatoes were all she had in the house, and she hurried over to the grocery and the meat market and bought a quart of blackberries and a pound and a half of round steak. The Gaineses lived on the dusty main street of the village, opposite the stores.

"I thought I'd stop with you three or four days, maybe, if it's convenient for you. I want to rake up everybody in town that I used to know, now I am here," said Joseph at the dinner-table, which Mrs. Putney had placed in the front room, and ornamented with some asparagus sprigs in a tea-cup.

"I'll be real pleased to have you, Joseph," she responded. "I haven't got but these two rooms, but I'll see if Mrs. Gaines can't let you sleep in there. I'm just as glad as I can be to see you, Joseph."

She meant it. Her heart had warmed and her loneliness had slipped away from her at the sight of genial Joseph Wolcott; but when the meal was done, and Joseph had gone across the street in pursuit of a familiar face, and she had washed the dishes, she sat down motionlessly, with a blank look.

The youngest of the Gaineses had straggled in again. He was a large-headed child, so backward that his presence was almost oppressive. He was two years old, but he said nothing but "da-da," and he had a vacuous stare; but Mrs. Putney was sometimes glad to see him. He did not wound her pride; she did not dread his scrutiny of her circumstances, and she could confide in him without fear of betrayal.

"Luther," she said, "I don't know what I'm going to do; I don't, really."

She took a little pasteboard box out of a stand drawer, and counted the money in it. There were five dollars and thirty cents.

"I've got to pay your father the rent Friday; Friday's the first. And if Joseph stays four days, I sha'n't have enough left to get along with. I'll have to have meat every day. And I hain't anything more coming in."

She had put off facing the facts and the future, but a crisis had come now. Her fortunes were at a low ebb.

"W'y, Luther," she said, in her desperate need of a sympathizer, "I might 'a' known long ago I was coming to the end of my rope. Long as I had the house and didn't have rent to pay I got along; but I couldn't pay all the interest on the mortgage, and when I sold out—and I guess 'twould been sheriff's sale before long if I hadn't—and paid Lyman Hill everything I owed him, there wasn't hardly anything left, and I had to spend the last cent of it a good while ago.

"If the hair business was what it was fifteen years ago, I wouldn't be where I am," she went on. "It ain't. Folks don't wear false hair the way they used to, young or old; it ain't the style. There ain't hardly any demand for switches nor false fronts any more, and that store in Austinville has taken pretty much all of what little trade I did have.

"I didn't know but I could get some of their work to do, and I went down there on the cars and asked; but they didn't give me any. I guess they thought I was too old.

"I know I don't do work so good as I used to. And then I got that agency for carpet-sweepers, and started out to sell 'em in this county. I didn't get very far. I couldn't stand it."

She winced. Some things were hard to speak of, even to Luther. The memory of the attempt of the delicate, timorous, middle-aged woman to sell carpet-sweepers was the memory of a nightmare.

"I've been making rugs some since that, and doing 'most anything I could turn my hand to; but I can't make enough to live on; I can't, to save me. I don't spend hardly anything, goodness knows. I haven't had any new clothes I don't know when, and I don't eat much.

"I haven't had fresh meat before for a week. But I can't make what little expenses I've got, and that's the fact. I can't work fast at anything, and I can't get much work anyhow. This little bit of money is all I've got to my name. I don't know what I'm going to do. I don't know what I'm coming to!"

She picked Luther up and rocked him, her quivering face against his flabby, unresponsive cheek.

Joseph spent the afternoon "down town," talking with old acquaintances, but he spent the evening with Mrs. Putney. He seemed to fill two-thirds of the small room, sitting with his long legs across a second chair.

He watched her with interest; she was working with hopeless-looking wads of hair combings, a paper shade over her spectacled eyes. His twinkling expression filled her with memories of his younger days; he had always been good-natured and a joker.

"You've been a widow so long you might just about as well have been an old maid, hadn't you, Sar' Ann?" he queried, as a result of his meditation.

Her slow sorting of hair amused him.

"Why don't you put those red combings and the black ones in one switch, half-and-half? I think 'twould be a splendid idea, if the folks didn't object," he said, and chuckled for a full minute over his joke.

"Talking about hair, do you remember that time when Salome Avery put a green apple in her waterfall to make it bigger, and it fell out in meeting and rolled down the aisle? To think of that giddy Salome being a grandmother now!"

If anything could have made Mrs. Putney forget her galling anxiety it would have been the sight of Joseph's keen enjoyment of his visit. Mrs. Gaines gave him sleeping accommodation, and he spent most of his time on the porches of the grocery and the post-office, with the old friends who rallied around him.

Mrs. Putney, sitting over her work, could see him the center of gratified groups tipped back in their chairs, talking, smoking and hilariously laughing over old times.

"Get on your bonnet," he said, on the second day; "I'm going to hire a team and go down and see old Hi Davis, down on the Gore road. They say he's living yet, 'most ninety. We used to go down there to his sugar-bush every spring, dozens of us boys, and he'd fill us all up with warm sugar. He'll remember me. Come along, Sar' Ann."

He made her go. The next day he went through the cider-mill and the cheese-factory, with an attendant congregation, and the day after he and Chauncey Larkin drove around in a four-seated wagon and got up a load of men and went over to the river fishing. His welcome was warm and his popularity was great.

He ransacked the town for old acquaintances, and brought Mrs. Putney more news than she in her quiet isolation had heard in a year. The editor of the little weekly paper "interviewed" him, and made a column article of the information about the West and the political opinions gathered from "our former fellow-townsman, now a wealthy stock-farmer of Iowa."

Joseph had a continuous good time, and when Friday came he had said nothing about going home.

Mrs Putney went around to the Gaines's door. She so dreaded her errand that every step she took was a painful effort. She twisted her fingers in the rusty black lace that trimmed her best dress scantily, and opened her mouth twice before she could speak.

"I thought I'd ask you if you can wait a few days—a week, maybe—for the rent," she faltered. "I haven't got much money on hand, and Mr. Wolcott's being here has cost me quite a good deal extra. I'll be very much obliged to you."

Mrs. Gaines was slack and easy-going by nature, but her husband was sharper. He gave his tenant an ungracious word in answer. She went back with a hot flush in her cheeks and misery in her heart.

Even with this reprieve she knew her money would not hold out long.

"I forgot the butter was out," she said at the dinner-table. The meal was half over before she could bring herself to utter the prevarication. "I hope it hain't spoiled your dinner?"

"Well, I guess not," said Joseph, heartily. He had a large capacity for food; Mrs. Putney, whose cramped means had trimmed down her appetite to delicate proportions, was appalled at the amount he consumed. She was afraid he might not get enough to eat; but he was freely treated to crackers and cheese and sundry edibles over at the grocery.

There was no butter for supper, either; she did not dare spend the money for it. Her worries told on her; she looked pale and old, and she could not talk much.

Joseph strolled across the street after supper, and she sat down by her lamp and worked desperately on the black switch.

Luther came in, greasy-faced from his supper, and fell asleep on the floor. Mrs. Putney made him comfortable with a shawl, till his mother came for him in an aimless way at nine o'clock. Mrs. Putney worked on.

It was hot and uncomfortable; the moths fluttered and died around the lamp, and beetles bumped against the walls. It was hard for Mrs. Putney to see in the evening; her eyes were poor, and ached with the strain.

As the evening lengthened, the rattle of wagons and boyish whistling and passing footsteps ceased, and doors banged to for the night, and the early country silence settled down; but the sociable gathering on the grocery porch did not break up. They were telling old stories and jokes, with loud mirth. Mrs. Putney, with her memory of the town traditions, knew from the snatches audible in the stillness what stories they were resurrecting from the dead past.

"Joseph's telling," she reflected, "about the time Eli Burrill tried to ride on his Aunt Rosanna Caldwell's pass, stockholders' day, and had to pay his fare, and after that nobody ever called him anything but Rosanna."

She was weighed down with her anxiety and her dread. "I'll ask Mrs. Colman to pay me a little ahead for her switch," she thought. "I'll have to."

But that would be a driblet. She hoped to struggle through till Joseph should go; but what then? What then? She could not go on earning next to nothing and spending more than she earned.

What was going to become of her? She knew what was the last resource, the fate of old people without means of support. Should she come to that?

The thought benumbed her. It was hard to realize that she had come to such a pass. She had had a home once, and a husband who had loved and protected her; but she had fought the world alone for years, and now she had lost even her few poor weapons. She was cast aside, stranded—and hopeless.

She heard the dispersing scraping of chairs at last on the grocery porch, and loathly departing steps. Joseph came across the road, and put his head in at her door.

"You up yet, Sar' Ann?" he said. "You better go to bed, hadn't you? Your shade's all on one side, and your topknot on the other." But he sat down in the doorway.

He finished his cigar in silence. Then he came in and sat down and faced Mrs Putney squarely.

"See here, Sar' Ann," he said, "I've got something to say to you."

She took off her shade and looked at him.

"You needn't be scared," said Joseph. "It ain't anything alarming. I want you to pack up your duds and go back with me. That's the word Martha sent, Sar' Ann. She spoke to me about it soon as ever I begun to talk about coming East, and I was glad she'd thought of it; you needn't have any doubts about that. It's what I stopped here for, mostly, to put you in my gripsack, so speaking, and carry you home with me."

"Joseph!" gasped Mrs. Putney.

"Yes, we want you to come out and live with us. You've lived here alone a good while now, and a change will be just the thing for you; just the checker! It ain't good for folks to go along in the same old rut forever. It's time you stopped working, anyhow."

His own observation, and the few discreet inquiries he had made among his friends, had satisfied him of her pitiful necessities. But of that he spoke no word.

"I suppose you'll have some regrets about leaving the old town, but I guess we can make up to you for that. You'll have room to stretch and breathe, out there. We've got a farm a mile long, you know, in as pretty a part of the State as you want to see. I've got hundreds of horses and colts; you'll enjoy seeing 'em. I don't suppose you know the difference between Percherons and Jennets, do you? I've got all kinds, 'most. We're three miles out of town, but we don't get lonesome. We're a sort of a little village all by ourselves; the hired men have houses on the place, the married ones. And folks drive out from town about every day; the young people come out 'most as much as they did before Joe got married.

"You know what Martha is, how she makes people welcome, and enjoys it," he went on. "Why, we had a dance there in spring; two or three wagonloads of 'em came out from town, and we sent for a fiddler and had a staving good time. Martha and I danced with the rest of 'em," said Joseph, cracking his knee and laughing. "When we get you out there can't tell but what you'll take to dancing. You'll feel like it, anyhow. You'll feel as though you'd been pretty well cramped up here, when you see how we live.

"Yes, sir, I want to get you out there and turn you right out in the tall grass, with the stock," said Joseph, jocularly. "You can kick up your heels and frisk around; there's lots of room. It'll do you good; make a new woman of you. You needn't say anything. I don't take no for an answer."

The little, forlorn old widow sat with her wrinkled hand over her eyes. She was silently crying; the tears trickled down her chin and dripped on the hair in her lap. Joseph's voice, when he went on, was shaken.

"Why can't you get ready by Monday? I hadn't ought to stay any longer. You can sell out what you've got here, what you don't want to take with you. I'll help you; I'm a good hand. I should think we could get started by Monday."

Mrs. Putney tried to speak. It was some time before she could.

"Joseph," she said, "I don't know. Joseph, you're awful good. But I hain't got any means. Mebbe I could work enough for you, sewing and such, to pay—"

Joseph laughed scoffingly. "You can break the horses. Sar' Ann," he declared; "that's what you can do, break in the colts!"

There was a weight on her upright conscience, for which her shrinking pride had been accountable. She could not embrace her joyfulness, which was greater than Joseph could have realized, till she had removed it.

"I didn't forget to get butter, Joseph," she said. "I hain't got hardly any money, and I didn't dare to spend any for butter."

"Pshaw!" said Joseph, huskily. He took a clean handkerchief from his pocket, unfolded it slowly, and wiped his eyes.—Youth's Companion.

Domestic Hints.

Myrtle Soup.—Fry three chopped onions in a little beef dripping until they are a golden brown; stir in one-fourth of a pound of ground oatmeal; fry that brown; add one quart of water, a half dozen potatoes cut in thin slices; salt and pepper and boil until the potatoes are soft, then strain, set on the stove again to boil for five minutes and serve.

Half Moons.—Four eggs, one cupful of powdered sugar, one cupful of rice flour, one teaspoonful of vanilla and the juice and rind of one lemon. Beat the butter to a cream, then add the sugar gradually beating all the while. Add the yolks of the eggs, beat again, then add the whites beaten to a stiff froth, and, gradually, the rice flour. Flavor, beat until fine and light, and pour into small patty pans, which have been well buttered. Bake in a moderate oven for twenty minutes.

Chicken and Mushroom Salad.—Cut the chicken into dice-shaped bits and cut the fresh mushrooms into quarters, if they are large; fry them very lightly a bit in butter, then moisten with a chicken stock, cover tightly and let cook till tender. Take up, drain and set away to cool. There should be about half the quantity of mushroom that you have of chicken, unless you particularly care for a greater proportion. Put chicken and mushrooms on lettuce leaves, cover with mayonnaise and serve.

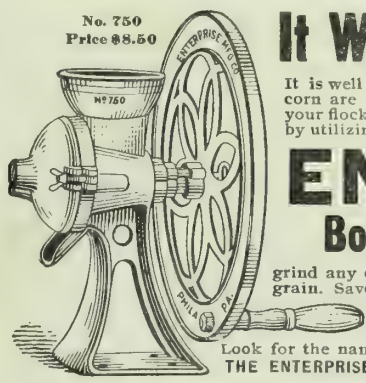


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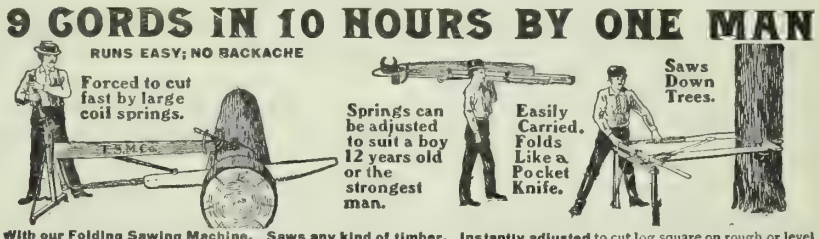
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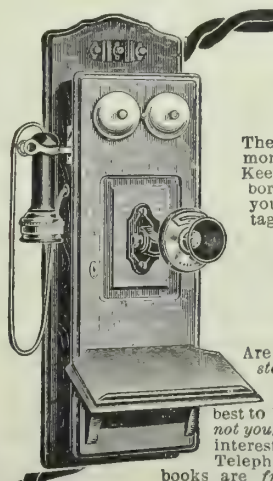
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The Markets.

San Francisco Produce Report.

San Francisco, Nov. 1, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 88⅛@ 87⅛	89⅛@ 88½
Thursday	89⅛@ 88	91⅝@ 89½
Friday	90¼@ 88¾	92⅝@ 90½
Saturday	90⅞@ 89½	92⅜@ 91
Monday	90⅛@ 89½	92 @ 91
Tuesday	89¾@ 88⅝	91⅛@ 90

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	46 @45⅝	45¾@45⅞
Thursday	46⅛@45⅜	46⅛@45⅛
Friday	46⅛@45⅝	46⅝@45¾
Saturday	46 @45⅝	46½@45½
Monday	46⅜@45⅞	46⅝@46
Tuesday	46¼@45¼	46⅞@46⅛

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 40⅜@1 39⅞	$1 44½@1 44⅛
Thursday	1 44½@1 42⅝	$1 48¾@1 47⅛
Friday	1 45 @1 43	$1 50 @1 47⅞
Saturday	1 43¾@1 43¼	$1 48½@1 48¼
Monday	1 43¾@1 43¼	$1 48½@1 48¼
Tuesday	1 41 @1 40	$1 46¼@1 45½

Wheat.

There have been sales of Walla Walla cargoes at 33s 9d, an advance of nearly a shilling since a week ago. It is becoming difficult to buy any wheat in the North at any price. Markets all over the world have been highly excited over the present situation. There is, perhaps, a little let up in the pressure the last day or so. The best authorities, however, think that the situation is as strong as ever, the main point at issue being whether Russia can keep on shipping wheat. Nobody thinks it can be done. There is an interval of about three months before Russia can ship heavy free supplies to importing countries. In the local market wheat got up as high as $1.50 for May and $1.45 for December, the close showing a decline of 4c. A Tacoma, Wash., report says: "The demand for coastwise tonnage to carry wheat from Tacoma to San Francisco is so brisk that a New York liner, the steamer American, will take 1000 tons of grain to the California metropolis."

California Milling	$1 55	@1 60
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 40	@1 43¾
Northern Bluestem	1 45	@1 47½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, December, 1905, wheat ranged from $1.40⅛@1.39 and May, 1906, from $1.45@1.44.

Flour.

Locally the flour market is rather quiet; but prices are being well maintained owing to the strong wheat situation, and partly to the difficulty which is being experienced in securing cargoes for Northern wheat shipments to this port. A Northern advice says that from all indications exports for November from Northern ports will break all previous records. Shipping men say that owing to the extremely large demand from Japan the Chinese boycott is not felt as it would otherwise be. It is said that the boycott situation does not improve so rapidly as some reports would indicate.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market has been quite as active as the wheat market, getting up to $1.25½ for December option, and to $1.23 for May. As in wheat, there was a sharp decline at the close. Receipts are light and are eagerly grabbed up. The highest point touched by spot barley was $1.25, at which figure it is held at this writing, and with very little to be had even at this price. Sales were made today to maltsters at $1.27½. A rain would probably check the rise somewhat, but a setback is most unlikely until it does rain.

Feed, No. 1 good to choice spot	$1 22½	@1 25
Feed, fair to good	1 18¾	@1 22½
Chevalier, No. 1 to choice	1 20	@1 25
Chevalier, common to fair	1 15	@1 20

Oats.

The feed oat market is strong, in sympathy with the advance in barley. While not especially active, all dealers anticipate that present conditions will produce an advance. Puget sound oats continue to arrive in limited quantities and are bringing on 'Change from $1.37½ to $1.40. Northern markets have advanced and it is likely that higher prices will be paid for their oats. Some very fine seed reds have arrived lately and sold up to $1.80. It is predicted that a good rain will create a healthy demand for seed varieties.

White oats	$1 37½	@1 42½
Black oats	—	@1 75
Red, choice new	1 35	@1 60
Red, fair	1 15	@1 30

Corn

Arrivals of Western yellow have been a little heavier during the past week, and therefore the present demand is well filled. White corn is moving rather slowly at quotations. Very little new California is showing up. New Western corn can be bought at quotations, and prices on the same are still being well maintained.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 37½	@1 40
Small Yellow	1 55	@1 65

Rye.

There has been little trading in rye, as offerings have been very light. Appearing quotations are being maintained, however, though very little rye which would be likely to bring the top quotation of $1.50 is in evidence.

Good to choice	$1 45	@1 50

Buckwheat.

Some new crop buckwheat has been sold at $1.90. There is, however, very little coming to this market as yet, and for that reason it is hard to give accurate quotations.

Good to choice	—	@—

Beans.

Receipts of beans have been heavy, Monday's receipts alone amounting to 26,000 bags, most of which were pinks from the river. These beans are rather quiet, and 2c seems to be the top market. Large whites are also dragging, although holders are disposed to await better prices. Bayos continue strong but without further advance in price. Blackeyes are well cleaned up and are held at $4.50. Kidneys and red beans are selling readily at quotations. The lima market is firmer at primary points, owing to heavy October shipments. Michigan prices on whites continue low, and for that reason it is difficult to move California beans.

Small White, good to choice	$2 75	@3 10
Large White	2 00	@2 40
Pinks	1 80	@2 00
Pinks, damaged	1 25	@1 50
Bayos, good to choice	—	@3 50
Red Kidneys	3 00	@3 50
Reds	3 00	@3 25
Limas, good to choice	—	@3 50
Black-eye Beans	4 35	@4 50

Dried Peas.

The market remains unchanged. California stock is working off quite readily at quotations given. Arrivals of Humboldt peas are of goodly size, being entirely adequate to supply the requirements of the trade. Prices on both varieties are ruling steady. Eastern prices are advancing, which will have a tendency to hold up the market here.

Green Peas, California	$—	@2 40
Niles	1 85	@2 00

Hops.

The hop market is active on the decline and heavy buying has been done in Sonoma county within the past week at 10c to 10½c per pound. The bulk of the business was done by the large hop concern of Wm. Uhlmann & Co. of San Francisco, who have taken 2500 bales during the past week at an average price of 10c. This transaction is greatly in excess of any previous purchase made this year by any local concern. The market is weak and dealers are expecting still lower prices. Oregon prices range from 7c to 9c. All purchases made so far are to cover sales and deliveries made by dealers heretofore and not of a speculative character.

Good to choice 1905 crop	7 @	10

Wool.

The local market reflects the tone of the Eastern market, in that the demand for defective wools is very inactive. As the biggest share of the fall clip of this State is of an inferior quality, having to go through the hands of the scourers, the fall clip is much neglected. San Francisco buyers think that the growers are holding their defective wools too high and are making very little effort toward handling them. One large local concern has withdrawn its buyers from the country markets entirely.

FALL.

Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	12	@14
Middle County, defective	9	@12
San Joaquin and Southern, free	9	@13
San Joaquin and Southern, defective	8	@10

SPRING.

Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

Receipts of hay during the past week amounted to nearly 2500 tons, or about 300 tons more than for the week preceding. A shortage of cars is still interfering somewhat with shipments. Notwithstanding heavy arrivals of the lower grades of hay, there does not seem to be an overabundance. Alfalfa hay has been in very light supply for some days past. The absence of rain makes the situation firmer than it would otherwise be. Straw is in better demand and shows a slight improvement in price.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The leading feature of market in millstuffs is the extremely high figure reached by rolled barley. The great scarcity of good bright lots of spot feed barley makes it difficult to secure rolled barley even at the appearing quotations. Bran is a shade firmer and other varieties are ruling steady.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	23 50	@ 24 00
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	26 00	@ 26 50
Cornmeal	31 50	@ 32 00
Cracked Corn	32 00	@ —
Oilcake Meal	—	@ —
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

All varieties of seeds are now showing up in the local market and appearing quotations are being well maintained. There is no especially active demand, but it is thought that a rain would create one. Alfalfa seed is now coming in and is being held at appearing quotations.

Alfalfa	$13 00	@14 00
Flax	3 25	@ 3 50
Mustard, Yellow	3 25	@ 3 50
Mustard, Trieste	4 25	@ 4 50
		Per lb.
Canary		6½@—
Rape		2½@ 3
Hemp		3½@ 4
Timothy		5 @ 5½

Honey.

The market is very dull despite the bullish articles in all the bee papers. Apiarists are now beginning to let go at present prices, as they are beginning to realize that they must accept conditions as they are. This year is no exception to the rule and it has always been the case that those selling early yet the best prices for their honey.

Extracted, Water White	5	@—
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	8	@ 9
Amber Comb	6	@ 7

Beeswax.

There is the usual local demand with an occasional order for export. Stocks are entirely sufficient for requirements, but prices are being well maintained.

Good to choice, light ₱ lb	25	@27
Dark	24	@25

Live Stock and Meats.

The local market remains in good shape. The tone of the beef market is steady with 5½c the price for dressed beef of first quality. Lambs continue to be in good request at 10c per pound. Veal is moving rather slowly at appearing quotations.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4¾@	5½
Beef, 2nd quality	4 @	4½
Beef, 3rd quality	3 @	4
Mutton—ewes, 8@8½c; wethers	8½@	9½
Hogs, hard grain, 150 to 250 lbs	5½@—	
Hogs, large, hard, over 250 pounds	5¼@—	
Hogs, small, fat, under 150 lbs	5⅜@—	
Veal, large, ₱ lb	5 @	6
Veal, small, ₱ lb	5½@	7½
Lamb, spring, ₱ lb	9 @	10

Hides, Skins and Tallow.

The hide situation shows little change. Advices from the East indicate that the packers are inclined to ask the same figures for winter hides that they have been getting for summer hides. It is understood that some sales of the November and December take-off have already been made in Chicago at present prices, and as November and December hides are much inferior to October hides this practically amounts to a further raise. Owing to the strong position of hides, California tanners have generally advanced harness and skirting leather 1c.

Nothing but select hides, clean and trimmed will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Saltde Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	2½@3½	

Bags and Bagging.

With the exception of a few small orders for "fill in" stock, dealers in bags report that the season is now over and the bulk of the business has been done. The demand for bean bags has been unusually large this year. A large jobbing concern reports that it made its annual clean-up on grain bags last week, selling its entire remaining holdings at 7½c. A few wool sacks are moving at appearing quotations.

Bean Bags	$ 6¼@—	
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7⅛@7⅜	
Fruit Sacks, jute, as to quality	6½@7½	
Grain Bags, Calcutta, 22x36, spot	7⅛@7¾	
Wool Sacks, 4-lb	33 @ 34	
Wool Sacks, 3½ lb	30 @ 31	

Poultry.

Good stock continues to move freely; nevertheless there is an easier feeling all round. The top prices are realized for large stock only. Turkeys are in active demand at the appearing quotations. Only plump, fat stock will bring the extreme prices.

Turkeys, choice Young, ₱ lb	$ 20 @	22
Turkeys, live gobblers, ₱ lb	20 @	22
Turkeys, live hens ₱ lb	20 @	22
Hens, California, ₱ dozen	4 00 @	4 50
Hens, large	6 00 @	7 00
Roosters, old	4 50 @	5 00
Roosters, young (full-grown)	5 00 @	6 00
Fryers	4 00 @	4 50
Broilers, large	3 00 @	3 50
Broilers, small to medium	2 50 @	3 00
Ducks, old, ₱ dozen	4 00 @	5 00
Ducks, young, ₱ dozen	4 00 @	6 00
Geese, ₱ pair	1 75 @	2 00
Goslings, ₱ pair	2 00 @	2 25
Pigeons, old, ₱ dozen	1 25 @	—
Pigeons, young	1 75 @	2 00

Butter.

The butter market is now in excellent shape. The demand continues strong and the high prices on extras are being well maintained. Other grades are being brought into consumption by the extremely high price at which the extra grades are held. Store grade is wanted by the local dealers and sells freely at quotations.

Creamery, extras, ₱ lb	—	@28
Creamery, firsts	—	@26½
Creamery, seconds	24	@25
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	24	@25
Mixed Store	18	@20

Cheese.

California cheese is in good demand and somewhat firmer in price. Receipts have been only moderate and have moved off readily at appearing quotations. California good to choice and Young Americas are 1c higher in price than at last quotations, while Eastern shows a decline of 1c.

California, fancy flat, new	11½@	13½
California, good to choice	—	@12½
California, fair to good	9	@11
California, "Young Americas"	12	@14
Eastern, new	15	@16

Eggs.

The market is inactive on fancy ranch eggs, evidently because the price has been forced too high. The average trade is looking for a medium priced article and is falling back to the use of Eastern and store eggs.

California, select, large, white and fresh	47	@49
California, select, irregular color & size	—	@46
California, good to choice store	25	@31
Eastern firsts	23	@26
Eastern seconds	19½	@20

Potatoes.

The potato market is in much better shape than it has been for some time past. River Burbanks are now held at 75c per cental for the better grade, while Salinas are bringing $1.30. Chili Garnets are practically nominal. Oregon Burbanks are now arriving freely and are bringing from $1.10 to $1.15. Tomales are quoted at 80c to 90c.

Cal. Early Rose, ₱ cental	—	@	—
River Burbanks, ₱ cental	55	@	75
Salinas Burbanks	95	@	1 30
Chile Garnet, ₱ cental	—	@	—
Oregon Burbanks	1 10	@	1 15
Tomales	80	@	90

Vegetables.

The market continues strong, with stocks of most varieties very light. Owing to a good shipping demand, onions have advanced in price, Yellow Danvers being quoted at $1.10 and Australian Brown at $1.15 per cental, choice basis. Green corn and summer squash are now out of the market and egg plant is very scarce. Tomatoes are not so plentiful as heretofore and are considerably higher in price, fancy stock bringing as high as $1 per box.

Beans, Lima, ₱ lb	4	@	5
Beans, String, ₱ lb	4	@	6
Cabbage, choice garden, ₱ 100 lbs	50	@	—

Corn, Green, ℔ crate	—	@	—
Egg Plant, ℔ box	—	@	85
Garlic, ℔ lb	—	@	6
Onions, New Yellow Danvers, ℔ ctl.	85	@	1 10
Onions, Australian Brown, ℔ ctl	1 10	@	1 25
Peas, Green, ℔ lb	5	@	7
Peppers, Bell, ℔ box	—	@	50
Peppers, Green, ℔ box	25	@	50
Tomatoes, ℔ box or crate	40	@	1 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The supply of fresh fruits now on hand in the local market has diminished quite noticeably during the current week. The demand is good for all varieties which are to be had at present and prices show satisfactory advances. Apples are now quoted with a wider range than at any previous time this season, ranging from 25c for poor stock to $1.25 for select. There are no more cantaloupes or watermelons to be had at any price. Figs are steady at 65c for one-layer and $1 for two-layer. Grapes of all varieties are stiffer in price, with the demand strong for select stock at the advanced quotations.

Apples, choice to select, ℔ 50-lb bx	75	@	1 25
Apples, good to choice, ℔ 50-lb. box	50	@	75
Apples, fair to good, ℔ 40-lb box	25	@	50
Cantaloupes, ℔ box	—	@	—
Figs, ℔ one layer	-	@	65
Figs, ℔ two layer	85	@	1 00
Grapes, Tokay, large box	1 00	@	1 50
Grapes, Muscat, large box	1 25	@	1 50
Grapes, Black, large box	1 00	@	1 50
Huckleberries, ℔ lb	7	@	9
Plums, Late Coes Red, ℔ crate	60	@	85
Raspberries, ℔ chest	—	@	8 00
Strawberries, Longworth, ℔ chest	—	@	10 00
Strawberries, large var., ℔ chest	—	@	5 00
Strawberries, Santa Clara, ℔ chest	—	@	8 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The local market continues firm, with the Eastern demand gradually strengthening. Apples and apricots are ruling almost strong and the prune market is a shade firmer. A report from Salem, Or., says that, although many of the prune growers in this vicinity harvested but half of a normal crop of prunes this season, the result of their year's work was far from being unsatisfactory. What the prunes lacked in numbers they made up in sizes, thereby increasing the price per pound received by the growers. In the Liberty neighborhood, south of this city, where about a half crop was produced, the prunes were so large that they easily graded into the largest size, or thirty to forty to the pound. Growers with this grade of prunes could get, when the market was at its best, 5c a pound, or perhaps a fraction more. Most of them sold, however, at about 4¾c a pound.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	6½@ 7
Apples, extra choice to fancy, 50-lb boxes	7 @ 7½
Apricots, Royal, good to choice, ℔ lb	6½@ 7
Apricots, Royal, fancy	7½@ 8
Figs, 10-lb box, 1-lb cartons	5½ @6½
Nectarines, White and Stanwick, ℔ lb	7 @ 7½
Nectarines, red, ℔ lb	—@ 6
Peaches, unpeeled, good to choice	7 @ 7½
Peaches, unpeeled, fancy to extra fancy	7½@ 8
Pears, standard, ℔ lb	7 @ 7½
Pears, choice to fancy	8 @10
Plums, Black, pitted	5 @ 6
Plums, Red, pitted	6 @ 7½
Plums, Yellow, pitted	5½@ 7½
Prunes, Silver, good to fancy	5 @ 8

Prunes, in bags, 4 sizes. —@—c; 40-50s, 4½@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	2½@ 2¾
Apples, quartered	3 @ 3½
Figs, White, in bulk	2 @ 2½
Figs, Black	2 @ 2½

Raisins.

At the meeting of directors of the Raisin Growers' Co. last night the action taken last Saturday cutting the price of raisins was rescinded. The prices were cut for the purpose of seeing if the Eastern market would loosen up. Orders during the period of probation have not been what was expected, and the directors came to the conclusion that the high prices should prevail.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40 @—
London Layers, 3-crown, 20-lb box	1 50 @—
Fancy Clusters, 4-crown, 20-lb box	2 00 @—
Dehesas, 20-lb box	2 50 @—
Imperials, 20-lb box	3 00 @—
2-Crown Standard loose Muscatel	5¾@ —c
3-Crown Standard	6 @ —c
4-Crown Standard	6½@ —c
Seedless Thompsons, 50-lb boxes	6½@ —c
Seedless Sultanas	5 @ —c
Fancy 16-oz. Seeded	8¼@ —c
Choice, 16-oz. Seeded	8 c
Fancy, 12-oz. Seeded	6⅝c
Choice, 12-oz. Seeded	6⅜c

Citrus Fruits.

New grape fruit and new crop Navel oranges are now coming into the market, but they are not showing up well, being too green to sell readily. A few of the intermediate crop of Navels still remain in the local market and are held at from $3.75 to $4.50, according to size and quality. The local market now contains quite a number of imported Jamaica oranges, which are worth from $2 to $2.25 per box. Lemons are plentiful and a shade weaker and limes are steady.

Oranges, Navels, new crop	3 25	@	4 50
Oranges, Valencias, ℔ box	2 50	@	4 50
Lemons, California, fancy, ℔ box	2 50	@	3 25
Lemons, California, good to choice	1 75	@	2 50
Lemons, California, fair to good	1 00	@	1 25
Grape Fruit, ℔ box	3 00	@	3 50
Limes, ℔ box	4 00	@	—

Nuts.

Arrivals of almonds have been very free and stocks have had a tendency to accumulate, owing to the weakness of the market. The price of 12c for Ne Plus Ultras and I X Ls is being maintained, but a decline is predicted on account of the extremely large crop. Walnuts remain firm and quotations are expected to be maintained on account of the crop shortage. New crop walnuts are now coming in and are showing up much better as to quality than had been anticipated earlier in the season, when it was thought that they had been blighted by the heat.

Peanuts, fair to prime	4½@ 5½
Cal. Walnuts, No. 1 soft shell	—@13
Cal. Walnuts, No. 2 soft shell	—@ 9
Cal. Walnuts, No. 1 hard shell	—@12½
Cal. Walnuts, No. 2 hard shell	—@ 8½
Almonds, IXL, ℔ lb	11 @12
Almonds, Ne Plus Ultra, ℔ lb	11 @12
Almonds, Nonpareil, ℔ lb	11 @13
Almonds, Languedoc, ℔ lb	7½@—
Almonds, Golden State, ℔ lb	7 @—
Hard Shell, ℔ lb	5 @—

More About Dehorning.

Mr. O. J. Vine of Selma writes for the Dairy and Produce Review that, in passing over the country, one readily notices that the practice of dehorning is gaining favor, and rightly, too. Some years ago there was much opposition to it. Stockmen contended that it was cruel and dangerous to the animal. That it causes considerable pain no one will deny; but it is only for a moment, similar to that of pulling a tooth. Those who have dehorned their herds say they believe animals suffer less from being dehorned than they do in a few months from being hooked and abused by the other members of the herd before dehorning. Many cases of abortion are known to have been caused by hooking and abuse from horned stock. Dehorned stock is much quieter and more tractable than before dehorning; consequently they do better and gain flesh more rapidly. Milch cows produce more milk, and milk that will test higher, for being free from worry and annoyance. When cattle are fed unfastened, as in a corral, they all fare alike; the stronger ones are not so apt to crowd the weaker ones away to subsist on half rations. There is no longer any "boss" to domineer over the herd. With the removal of their horns cattle seem to know they have lost their weapons of warfare and act accordingly. No difference how quiet and peaceable a bull may seem, he can never be trusted. Keep your eye on him always when in the corral. There is, perhaps, no better weapon for defense than a four or five-tined fork. Give him a thrust in the nose if he rushes at you and he will invariably turn and run. Under no circumstances allow any one to tease a bull of any age. Boys are apt to do this thoughtlessly, but it is certain to cause him to become vicious. A bull should always have a good ring in his nose. There is no danger whatever in dehorning cattle at any age or in any condition if carefully and humanely done. Milch cows can be operated upon without danger of abortion at any stage of pregnancy. The flow of milk may be slightly diminished for several days, but will soon become normal.

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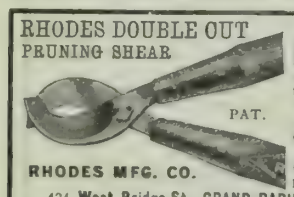
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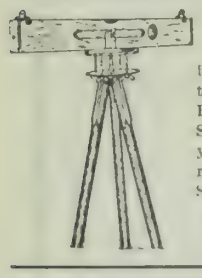
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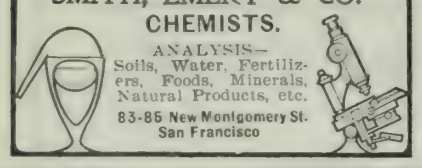
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THE DAIRY.

Uncle Sam Buys a Goat Dairy.

The following account, clipped from the New York World, tells of the arrival from Malta of the milch goats purchased by Prof. George Thompson of the United States Department of Agriculture for experimental purposes:

Sixty-eight distinguished foreigners of varying complexions, from blonde to brunette, with a few studies in black and white, passed through the city a few days ago en route to Athenia, N. J., where they will rest and recuperate while getting their sea-legs off.

They are the 68 goats just imported by the United States Government from Malta to give Uncle Sam some expert instruction on the bringing up of babies. The 64 mothers in the party, when interviewed, professed themselves entirely competent to undertake the task, and hinted that the patent baby food business would shortly go to the wall.

The goats are comfortably provided for at the quarantine station at Athenia, where they will be under observation for fifteen days while they study American manners. They will later be taken to Storrs, Conn., the experiment station, where their usefulness will be definitely tested.

While it has long been known that the milk of the goat was peculiarly adaptable to nursing children, this method of feeding babies has been practically disregarded during some years. It was the influence of physicians who persuaded wealthy parents to revert to goat's milk for sickly infants that interested the Department of Agriculture in the subject. The purchase of the goats by G. F. Thompson, a special agent, followed. The goats, it is expected, will serve their apprenticeship in the employ of the rich.

During the voyage over 45 of the goats, eager to show their possibilities, provided milk, which was greatly enjoyed by the crew. They yield about three quarts each daily. Their milk is greatly prized for invalids as well as infants. Dr. George H. Pope, of the quarantine station, has them in charge during their stay. The increase of the herd will be distributed throughout the United States. Maltese or Swiss goats are the only ones considered for the delicate task before the newcomers.

World's Milk Production.

It is estimated that the total weight of cows' milk produced in the world is 26,400,000 hundredweight, distributed as follows: United States, 6,100,000 hundredweight; Russia, 3,500,000; Germany, 3,000,000; France, 200,000; England, 200,000; Austria, 1,700,000; Italy, 1,450,000; Canada, 1,300,000; Holland, 1,200,000; Sweden and Norway, 800,000; Switzerland, 700,000; Denmark, 600,000; Belgium, 600,000; Australia, 550,000; Spain, 500,000, and Portugal, 500,000.

The production of milk in Europe is 18,450,000 hundredweight from 45,000,000 cows. The number of milch cows in the world is 63,800,000—15,940,000 in the United States and 10,000,000 in Russia. There are only 6 head of horned cattle in Spain to each 2½ acres of cultivated land, while in France there are 34 head and in England 56. This shows the poor condition of cattle breeding in Spain, and explains the constant increase in the price of butcher's meat for public consumption.

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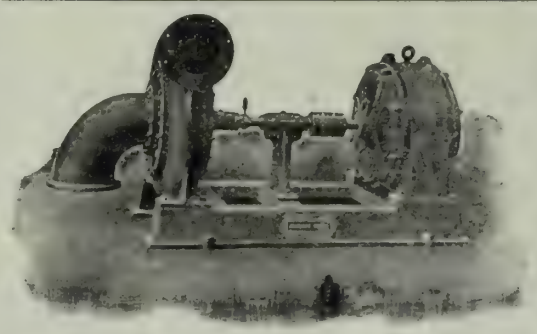
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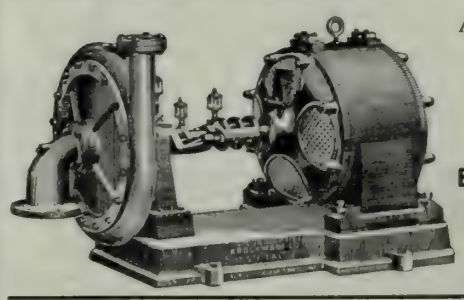
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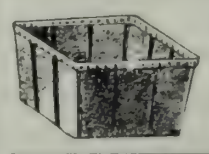


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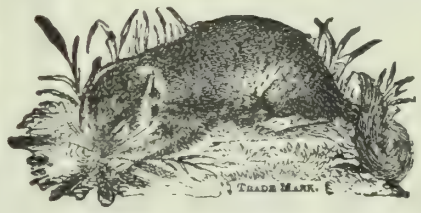
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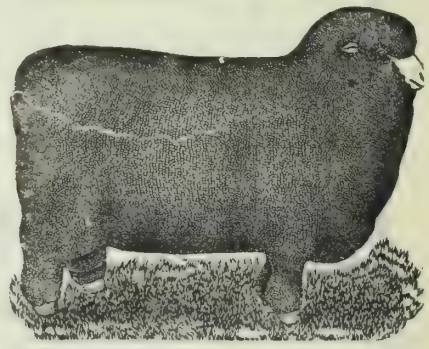


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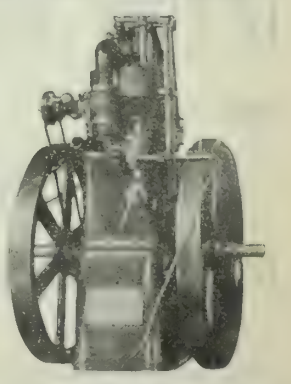


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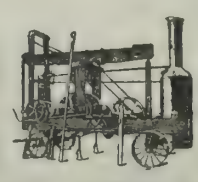
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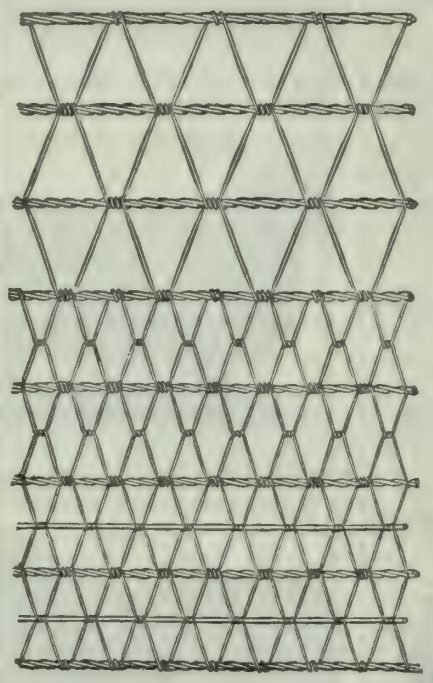
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ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

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ROWENA. 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton.

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs. Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec ; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., F. S. Farquas.

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Co-operation Among Danish Farmers.

Consul Walter C. Hamm of Hull, England, sends the following interesting account of co-operation among farmers in Denmark, as given by the leader of a party of Yorkshire farmers who recently visited Denmark to study methods of agriculture. He says:

The Co-operative Dairy at Esbjerg has a membership of 230 farmers, milking 1500 cows. A small quantity of the milk is retailed in Esbjerg; the bulk, however, is made into butter, and practically speaking, all exported to England. The milk is paid for by weight and quality. The manager, who receives $750 per annum, embraces in himself the functions of managing director, manager, working foreman and clerk, his clerking being done during the afternoon after the butter is made. The board of directors of such a concern get virtually no remuneration.

The Danish co-operative butter and egg rooms were next visited. This society has fifty separate dairies scattered over different parts of the north and west of Denmark, where the butter is made, then sent on to headquarters at Esbjerg to be blended and made one uniform quality before exportation to England. The membership embraces 30,000 farmers, and the society is shipping 4,000,000 pounds of butter yearly.

The egg department was then inspected. Eggs are sent in weekly from the different depots, each egg being stamped by the farmer with a rubber stamp with figures representing name of farmer, district, and date, so that any bad eggs can be easily traced back to the farmer who sent it. Every egg is tested, the method being to place the eggs on perforated trays holding up to 120 each. The tray when full is put over a strong electric light in a dark room, the light being confined in a kind of wood washing sink, so as to concentrate all the light on the eggs. It is only the work of a moment to separate the good from the bad, the former being bright and clear, the latter dull and muddy. On the farmer who had sent the bad ones a fine is imposed for each bad egg. This method soon sharpens the farmer's wife, and she takes good care to see that the nests are cleared every day, and doubtful ones kept for home use. The eggs are paid for by weight, so much a bound, not by number, and are all graded in packing into three different sizes. The farmer is paid weekly on a quotation fixed in accordance with market prices in London or Copenhagen.

CONTROLLING THE MARKET.—In order to avoid putting too many eggs on the market when the price is low, and still further depressing it, immense quantities are preserved in huge vats of lime and water, with an air-tight covering of water glass. These are sold as eggs become scarcer and dearer, so that the farmer has not to dispose of his eggs where there is a glut on the market, nor has he or his wife to trudge miles with a heavy basket to the market and then accept any price that is going. They can stay at home and look after the work of the farm. The turnover in this society in butter and eggs is about $2,500,000 per annum; cost of buildings and plant between $65,000 and $76,000. It has only been established ten years and is still growing, especially in the egg department.

Other egg societies at Odense and Haslev were visited. The latter, though only established two years, has already a membership of 450 farmers and has a rapidly increasing trade. The estimated cost of collecting, forwarding to central depot, grading, testing, and packing for export is about 2 cents per dozen. The egg societies are growing more rapidly than either the butter or bacon societies, but it must be remembered that the former are only in their infancy.

The bacon factory at Haslev has a membership of 900 farmers who supplied 13,000 hogs last year. It has been established eight years. That at Odense has a membership of 5000 farmers who last year supplied 70,000 hogs from all over the Isle of Fyen. At the entrance to the factory are posted the day's prices for first, second, and third

quality hogs, so that any one can see current quotations, or a farmer can by telephone ascertain the current price, and then decide whether he will send in his hogs or not.

CO-OPERATION. — All these societies are purely co-operative. The farmers in a district meet together to establish a co-operative society to deal with their produce—milk, hogs and eggs. Each one undertakes to supply the factory with a certain amount of produce. A dairy has to be built and machinery bought. No prospectus is issued, nor are there any shareholders. How, then, is the money raised? Each farmer signs a document by which he is held responsible, not for a part of the money that must be borrowed, but for all. Say, for example, that $10,000 has to be raised for cost of building, plant, etc., and that 200 farmers become members of the society. Every one of the 200 signs his responsibility for the $10,000, so that if the 199 cannot meet their liabilities the remaining one is bound for the loan. Actual experience, however, proves that in Denmark no risk whatever is attached to this. Armed with such a bond there is not the slightest difficulty in borrowing the money at a low rate of interest. Banks or loan companies are only too glad to lend on such a security. The dairy is then built and equipped, a chairman and small committee of management appointed, their pay being practically nothing, these in turn appoint a skilled manager, the milk is delivered at the dairy, made into butter, and either sold by the dairy direct to England, or if the dairy is too small it affiliates itself to a larger dairy, and so the produce is disposed of.

The price to be paid for milk, hogs, and eggs is settled by the weekly quotations for butter, bacon, and eggs in Copenhagen or London, a certain margin being left for working expenses. At the end of the year the balance sheet is made out, all expenses paid, including interest on loan and depreciation and the balance is distributed as bonus to each farmer in accordance with the amount of produce he has sent.

Bacon factories are established in the same way. The egg society is the simplest and least costly of all, and is often worked as a branch of the bacon or butter society.

The farmers of England, Russia, Canada, and other countries are studying these co-operative methods of the Danish farmers in order to introduce them elsewhere. It might be well for American farmers to take the same trouble.

Electrical Alarm Thermometer.

J. P. Bolton of Fresno, Cal., has patented a novel alarm in the nature of a dial thermometer which is designed to be set up in an orchard or vineyard and wired into a sleeping apartment, or any desired place, and then connected with a bell which will ring automatically whenever the temperature falls to the freezing or any other point that would be considered dangerous.

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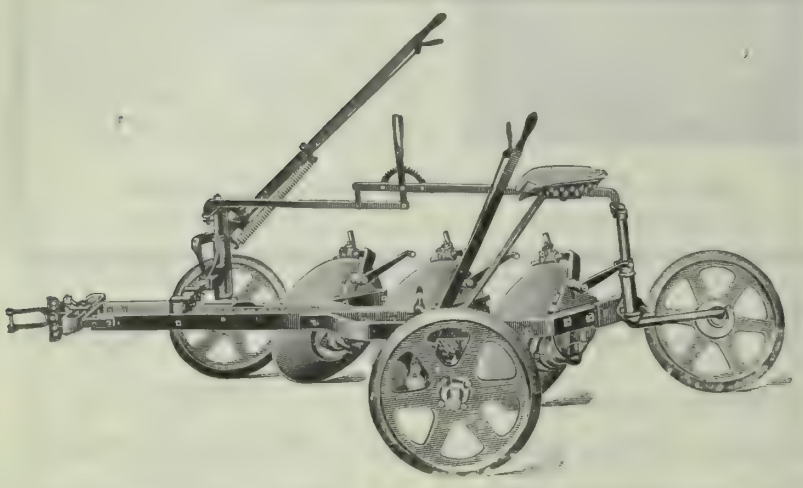
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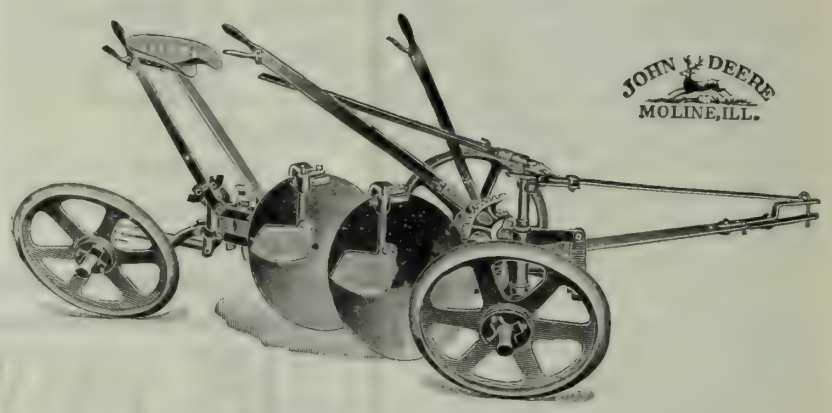
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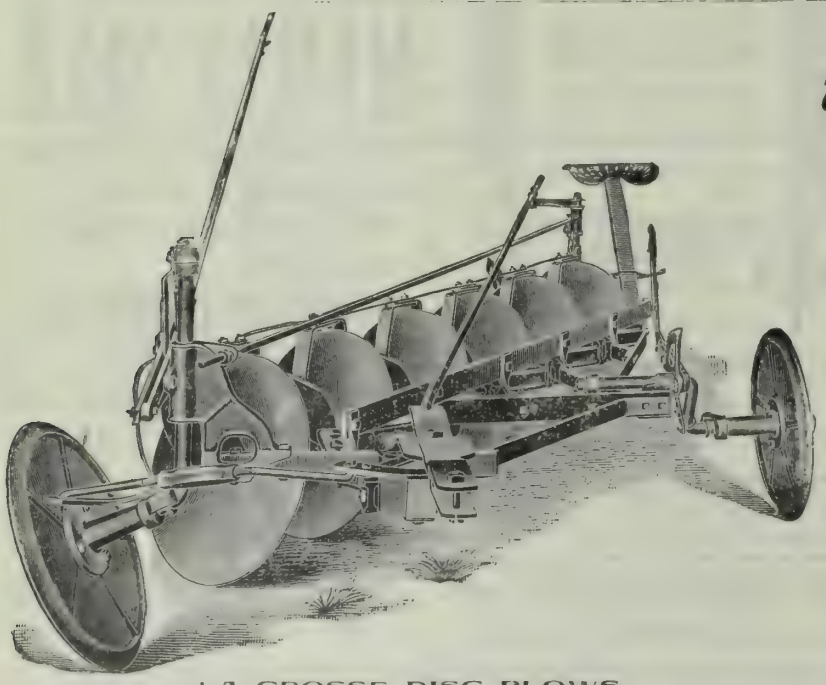
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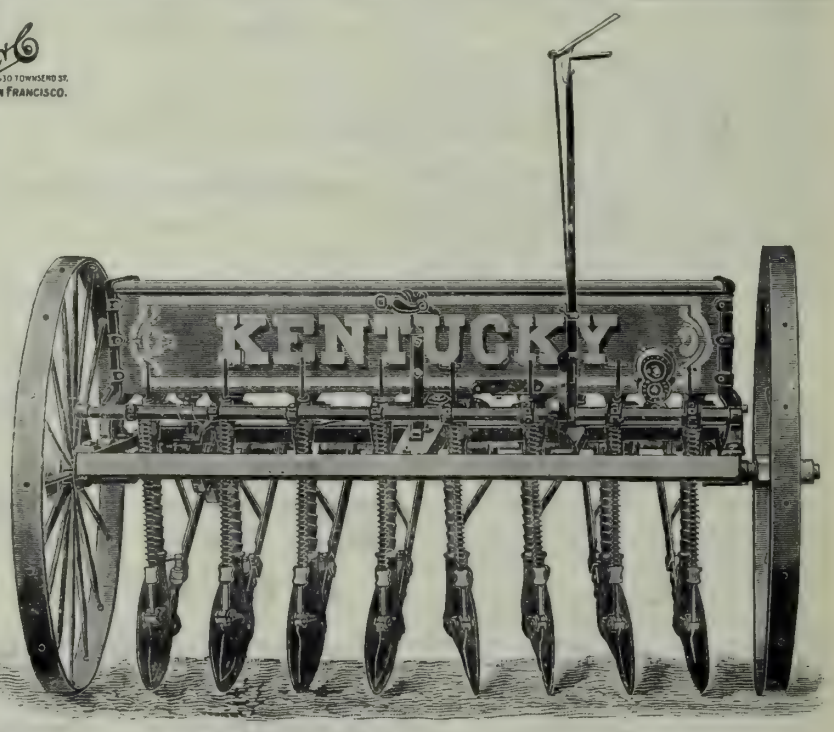
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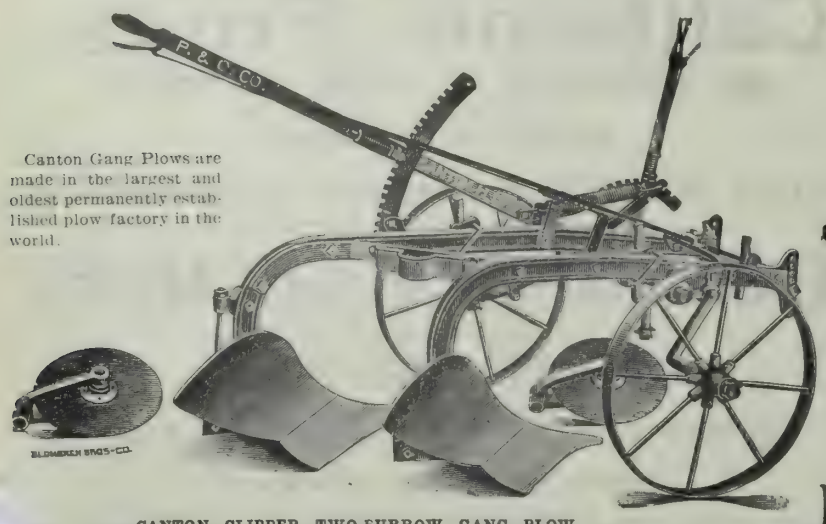


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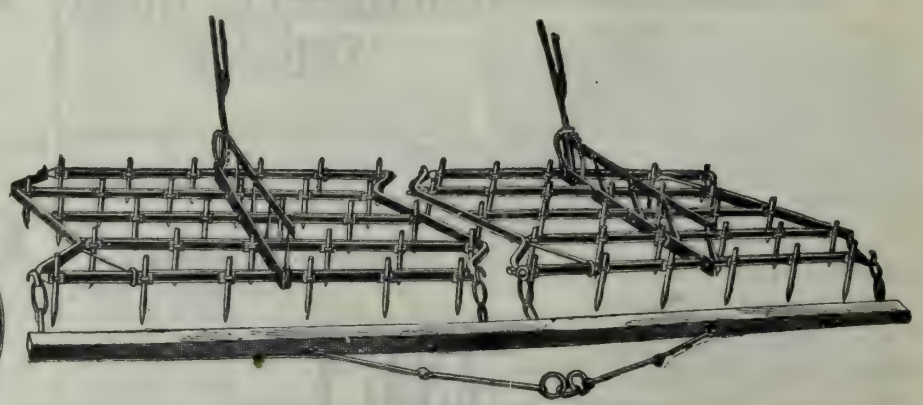


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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 20. SAN FRANCISCO, SATURDAY, NOVEMBER 11, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

The Other Side of the Continent.

Our pictures are chosen this week partly to quicken the memories of many Californians who hail from the distant land, partly to enable others to compare other scenic beauties with our own. The beauty of the birch, for instance, is a thing which we are denied, but are the birches handsomer than the magnificent alders which grow in California in places like that shown in the picture?

In the course of an interesting review by Mr. T. A. Rickard of the resources of Nova Scotia, which is naturally largely of a technical character, we draw a few paragraphs descriptive of the rural life of the country in which we are most interested. Any one who is told to "go to Halifax" is apt to regard such consignment as anything but kindly. Whence then comes this curious saying? It appears that in the days of the American Revolution, when many New Englanders remained loyal to the old country, there was a migration of families across the line into Canada. Many of these went to Nova Scotia by way of the port of Halifax. Any American not whole-hearted in the cause of liberty was apt to be invited to follow the loyalists and get out of the country; it was meant as bitter sarcasm to be told to "go to Halifax." But all that is changed now, the American patriot and the loyal Britisher alike followed the call of their manhood and became the founders of progressive communities. Halifax has lost its stinging suggestiveness, and we know it is a picturesque military and naval station, a charming city, and the gateway of a continent.

Nova Scotia is most widely known as "the land of Evangeline." The tourist goes to the Annapolis valley, a splendid tract of meadow guarded by ridges that cut off the fogs from the Bay of Funday and obstruct the cold east winds of the Atlantic. This valley, famous for its picturesque beauty and its historic associations, extends 100 miles, from Windsor to Annapolis. It is the old Acadie, the country settled by French colonists too patriotic and too much out of the world to recognize French authority after France lost dominion in North America, 150 years ago. The forcible deportation of these peasants to New England and the South, the romance of their subsequent pilgrimage and, in many cases, eventual return to Nova Scotia, have served as good material for many a writer.

But the valley of Annapolis is not typical of Nova Scotia; it is a happy vale consecrated to apples and poetry, to Parkman and to Longfellow. Partly because it is cut out of softer rock and largely by reason of the two hill ranges that flank it on the north and south, the valley of Annapolis is especially favored. The tidal rivers find a winding way deep into the pasture; the dykes, first built by the Brittany peasants, protect the interval land from the encroaching wave; the wide orchards bask in sunshine, the quiet villages sleep peacefully under gray church steeples; and on either side the hill slopes, checkered with cultivation and crested with dark forest, look down protectingly, while a wreath of fog halting over Blomidon suggests the stress and disquiet of a cold world that lies beyond this dreamland.



Woodland and River Scene in Nova Scotia.

Emigration is draining the best blood of Nova Scotia. Of late, the demand for laborers in the wheat fields of western Canada has attracted the young men. Up to the end of August this year 3700 men had left Nova Scotia and New Brunswick on "harvest excursions" to Manitoba and Alberta; nor was the exodus at an end. The railroads offer unusual facilities, the rate to Winnipeg being only $10 for the trip.

Every year several thousand vigorous men go westward, and a large part do not return but take up land on their own account.



Wine Harbor, Nova Scotia.



Mouth of Indian Harbor, Nova Scotia.

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E. J. WICKSON. ..... Horticultural Editor

SAN FRANCISCO, NOVEMBER 11, 1905.

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The Week.

That old proverb of our Mexican predecessors that the "south wind never dies indebted to a norther" is a great California comforter. During the week the norther has certainly been in evidence, and we do not remember seeing some parts of the State more wind swept, arid and distressful than they do at present. We state this for the benefit of the thousands of new comers who are looking in vain for the verdant hills and plains which they were promised in the California November. Such delightful autumnal springtime will surely come, but, as our expert correspondent, Mr. Blochman, of Santa Maria, points out in another column of this issue, it is merely late this year, and not necessarily bad on that account, except for the present distress of it. How soon none can exactly tell, and yet as we go to press on Wednesday we receive the report of the Weather Bureau that the south wind is beginning to assert itself and something is likely to be doing over the northern half of the State before this issue reaches the reader. Even if it does not repay so quickly, we still have the old proverb, cited above, that the south wind will keep at it until it has hurled back all the heat and drouth which the norther brought in its train and something more to make green hillsides and plains, and to set the plows to running and the stock to grazing—in fact, to give us what we have reason to expect at this time of the year. We are banking heavily on the truth of the old proverb.

Everything still ministers to strength in the wheat market, as is shown in our Market Review. Though trade is light, both on spot and in futures, the situation is strong. The higher grades of barley are also much in the same shape as last week. Oats are still rising, but corn is somewhat quieter, because of the coming of the new crop. Beans have changed in various ways, according to supply and demand for different varieties, as our reports show upon another page. Dry peas are in good demand because of the wide winter growth in orchards. Bran and middlings are in small supply and unchanged. Hay is unchanged. Meats are steady, with veal and pork improving. Butter, cheese and eggs are all in good shape. Eastern fowls have come in large amount and depress local stock, but turkeys are much better this week. Potatoes are looking up, with active shipping demand. Onions are unchanged. Increased receipts of oranges weaken the market, and grape fruit is weak and lemons steady. Apples are doing well considering the ample supplies. Grapes seem to be receding a little. Dried fruits are steady, with a quick upward movement in apples. Walnuts are strong and the crop late. Almonds are being helped in tone by heavy shipments. Honey is still strongly held above buyers' views. Hops are said to be offering freely at reduced rates, with slack buying. Wool is dormant here, but looking better at distant points.

The satisfactory market at the East for California fruits continues and this year's movement will make a good mark. Lt.-Governor Anderson of the Fruit Distributors predicted, some time ago, that we would go 2000 carloads above last year and this is nearly realized, because last year the total was reported to be 5626 carloads, and up to date this season the total 7457 carloads. Mr. A. R. Sprague of the California Fruit Exchange tells the Sacramento Union that on the whole the past season has been exceedingly satisfactory. There was greatly increased business, a larger area represented in it, a greater volume of production and a wider market. The returns to growers have been very satisfactory, taken as a whole. Everybody in the business shipped more cars of fruit the past season than in that preceding it, though some varieties in some localities did not do all that was expected of them. The coming fruit growers' convention at Santa Rosa ought to be a more cheerful affair than some of its predecessors.

Another cheerful note is found in the declarations of the implement men about this fall's trade. In old times the absence of rain would have painted the whole trade blue, but one in the business tells an interviewer that the present season has shown a remarkable increase in the demand for farm machinery, and particularly for plows. "This is unusual for a dry season like this," says he, "and indicates that lack of rain has not caused any loss or inconvenience, and that the men who understand these things are not in the least discouraged by conditions, present and prospective. It always follows that when lots of plows are sold the demand for other farm machinery increases, and so it is in this instance." Those who have kept their eyes on our advertising columns, as all enterprising farmers should, must have noticed that the wide-awake firms have no reason to lack confidence. It is a good sign.

All this leads up to Thanksgiving, which is set late this year so that the rains can get the State into Thanksgiving mood. President Roosevelt makes the date November 30, and gives this very pertinent comment on the occasion:

We live in easier and more plentiful times than our forefathers, the men who with rugged strength faced the rugged days; and yet the dangers to national life are quite as great now as at any previous time in our history. It is eminently fitting that once a year our people should set apart a day for praise and thanksgiving to the giver of good, and, at the same time, that they express their thankfulness for the abundant mercies received; should manfully acknowledge their shortcomings, and pledge themselves solemnly and in good faith to strive to overcome them. During the past year we have been blest with bountiful crops. Our business prosperity has been great. No other people has ever stood on as high a level of material well-being as ours now stands. We are not threatened by foes from without. The foes from whom we should pray to be delivered are our passions, appetites and follies; and against these there is always need that we should war.

Good for the declaration, but it needs to be done oftener than once a year. One has to keep everlastingly at it—just as the south wind will have to do this year if it pulls us through in good shape.

Talking about new Californians who wish to see things green, it is stated that the great colonist rush from Eastern points to this city continues and increases as the time draws near for the expiration of the special rates on the railroads. It is estimated that 6000 travelers arrived in Los Angeles one day last week over the three railroads. Twenty thousand is the number estimated to have arrived within a week.

QUERIES AND REPLIES.

Fertilizers for Onions.

To the Editor:—You had, some weeks ago, inquirers questioning you in regard to onion growing, but neither of them touched on just those points in which I am interested. My soil is an old wheat farm, and the humus is about all used up. I have but 10 months manure from two animals for the two acres which I intend to plant, so wish to help out with commercial fertilizers. What fertilizers and what quantity would you recommend? Will nitrate of soda, dissolved in water, force the young plants? Is it also good for eucalypts? I have some thousands of them, but a month old, whose growth I would like to hasten. Where can one get commercial fertilizers? Looking through the numbers of my Pacific Rural Press for the past year I can find only phosphorus and potash advertised.—Farmer, Turlock.

You ought to reinforce the humus in your soil by a winter crop of bur clover or peas and from peas and oats sown together you can get good winter cow feed and improve your soil at the same time. You can use nitrate of soda at the rate of 600 pounds per acre, applying one-half of it broadcast, when you put in the sets or transplants early in the winter, if you propose to make your crop that way, and scatter and cultivate in the other half of the soda when the heavy winter rains are over, but before the spring rains have finished. You must be very careful about using nitrate of soda in seed beds or on young seedlings, either of trees or field plants, because excess of it is destructive. Do not force your encalyptus seedlings too much; they will be overgrown and tender. A smaller, tougher plant transplants better. Of course you can use nitrate of soda water or manure water if you are very careful not to overdo it.

We cannot understand why dealers in fertilizers, who are always complaining about the lack of interest of planters, do not take the only step by which such interest can be secured and that is by advertising. Some dealers do use a small amount of space and advertise in a way which the wholesaler understands, but which does not reach nor appeal to the thousands of small growers who would like very much to experiment to satisfy themselves of the advantage of buying fertilizers. You can, however, always buy fertilizers of the leading seed houses and you can easily find their advertisements in our columns. If the fertilizer men will not bid for your patronage and offer their goods in an attractive retail way, buy of the seedsmen and give them the advantage of the trade which they put themselves in the way of deserving.

Weed Seed in Squirrel Poison.

To the Editor:—Inclosed find sample of seeds I found in a can of prepared squirrel poison. It is poisoned barley, put up by one of the lagest concerns of its kind in the State, and purchased by me at one of our local stores. I am almost certain that these are morning glory seeds, and if they are it is an outrage that these people are permitted to scatter this infernal weed any more than it is scattered at present. Kindly advise me what you believe the seeds are.—Farmer, Santa Cruz county.

The seed is morning glory seed as you suspect, and, of course, the use of grain containing weed seed in the manfacture of squirrel poison cannot be too strongly condemned. The probability is that, as the manufacturers of squirrel poisons are not farmers, they do not appreciate the importance of the matter as you do. They simply buy supplies of grain in the market without reference to weed seeds. They certainly should have their attention called to this matter, and all reputable manufacturers ought to be disposed to use only clean grain in their manufacture.

Legumes on the Bay Border.

To the Editor:—I would like to find out about legume forage crops suitable for this vicinity. What variety and what time would you plant Soy beans and cowpeas? Do you think alfalfa would grow on any of this land bordering the bay without irrigation? Would bur clover or alfilerilla do to sow with oats for hay? How do the vetches do here?—Farmer, San Mateo county.

Concerning leguminous plants, California experience is that cowpeas and Soy beans are not satisfactory. They do not like the dry season and they can not endure the frosts of the rainy season. Alfalfa would undoubtedly succeed, for a time at least, on soils in which the water does not rise too near the surface. If you can count on 3 or 4 feet or more

above standing water and the soil is rather loamy, alfalfa will do well, providing the water does not contain salt. It is quite sensitive to brackish water. Bur clover is probably our best winter-growing legume and would make a good combination with oats. Alfilerilla is not a legume, but is a member of the geranium family. Vetches generally do well in the winter and so do the common field peas, all of them growing well with oats or rye, the growth of the grain enabling the peas to rise from the ground and thus become better to handle in haying.

Fruits on Walls.

To the Editor:—I desire to raise early and late figs for home use, but our climate near the bay is hardly warm enough to ripen a crop of any variety on the previous year's wood, and such varieties as will mature on wood of the current year's growth are generally gone early in the autumn. I propose to construct a concrete or brick wall 12 feet high, against which to train the branches, the same as is done in England. Will you kindly advise me whether concrete will retain and reflect the heat for as long a period during the night as bricks, or should the wall be built of the latter material, which would be considerably more expensive than concrete? Will you also state whether, in your judgment, the results will prove satisfactory? It occurs to me that perhaps the difference between our California climate and that of England is of a nature not to yield correspondingly satisfactory results in growing figs and other fruits on walls over that derived from growing them in the open orchard.—Subscriber, San Francisco.

We do not know the relative absorption and radiation of brick and cement, but imagine there is too little difference to be considered important as a horticultural factor. The chief office of a wall is to arrest currents of cold air, though, of course, radiation of heat is important. This, however, comes largely from the ground, and the wall prevents its being swept away by cold air currents. We have no doubt that the use of a wall will accomplish much in the line you have in mind, and especially in the autumn, during which we generally have ample sunshine, and cornering it by a wall should be quite effective in bringing to maturity late fruits which are checked by low summer temperatures caused by the persistent westerly winds from the ocean. When these cease the sun has a better chance, and to help it by a wall should be effective. We see no reasons why the same advantage in kind should not be realized here. Nothing but actual trial can demonstrate to what degree it is available.

For Scabby Potatoes.

To the Editor:—About a year ago some one asked you for a cure for scab on potatoes, and you very kindly replied giving a formula for dipping seed potatoes, which has been unfortunately misplaced. I was told of your prescription by a man who is raising potatoes on a small place of his on the McCloud river where he has good rich soil, but irrigation is needed for the crop. He had been troubled with this scab on the potatoes, but noticed that after using this solution which you suggested on the seed potatoes, he had but little trouble.—Enquirer, San Francisco.

There are two treatments for scab in potatoes, and we cannot be sure which was recommended previously in your case. One is dipping in a solution of corrosive sublimate. Dissolve one ounce in eight gallons of water and soak the seed potatoes in this solution for one and one-half hour before cutting. This treatment kills the scab spores which may be upon the exterior of the potatoes. More recently, however, to avoid danger in handling such a rank poison as corrosive sublimate, formalin has been used, and one pint of commercial formalin, as it is bought in the stores, is diluted with thirty gallons of water and potatoes are soaked in this for two hours. Thirty gallons of this dip ought to treat about fifty bushels of potatoes.

Alfalfa on Light Alkali.

To the Editor:—I have some land which is slightly alkaline. I wish to put this in alfalfa. Will it benefit the alfalfa if I first sow cowpeas and later turn them under before sowing the alfalfa? Also, where can I get alfalfa bacteria for inoculation, and also advice concerning the same?—Farmer, Santa Barbara.

There would probably be no advantage in a preliminary crop of cowpeas. You would simply lose a year's time in getting a stand of alfalfa. As for the alkalinity of the soil, it would not be lessened by the cowpeas, and it would be just as well to make the direct trial to ascertain if it is too great to admit of successful growth of alfalfa. We would go ahead with the alfalfa, getting the land into good shape by deep plowing and thorough harrowing, and then sowing as soon as the ground gets into good condition in February, trusting to the rain to distribute the alkali which may have been brought to the surface by evaporation during the dry season. It is often the case that if you can get a good stand of alfalfa it will endure a certain amount of alkali which is distributed through the soil, but would be injured if it were largely concentrated at the surface. Only an actual trial of the plant will show whether your land is suitable for alfalfa growing. You can get alfalfa bacteria from the seedsmen, but there has been no satisfactory demonstration yet that anything is gained by such introduction.

No Inoculation for Grain.

To the Editor:—I wish to know whether there is any such thing as inoculation of grains to enable them to draw nitrogen from the air. I first saw some account of it in a farm journal. I have been advised to write to you, as I have wished to experiment with it. Our land seems to be impoverished and I wish to improve it.—Grain Grower, Glenn county.

The accounts of this inoculation business have been very misleading, and even so-called farm journals have been deceived. Even when inoculation is desirable, which is not always the case, the only plants which can draw nitrogen from the atmosphere by means of bacteria, which establish themselves upon the roots, are leguminous plants, viz., peas, beans, vetches, acacia trees, etc.—everything which bears its seed in a pod. No grain can do this and no inoculation of grain can help it. For the improvement of the yield of grain nothing is known excepting better farming, including the use of fertilizers and of irrigation water as may be required.

Arbor Vines and Home Apples.

To the Editor:—Will you kindly inform me through the columns of the Pacific Rural Press which are the varieties of table grapes best adapted for a trellis or arbor in this locality? The soil is a deep sediment, or what is known here as cherry land. Also, what varieties of apples would you recommend to plant for home use?—Home-Maker, Mt. View.

The Isabella is a very satisfactory arbor vine, if you like an Eastern grape, and it grows well in your district. Of European varieties the Gros, Colman, Muscat, Hamburg and Rose Chasselas all have large, handsome leaves and good fruit. For home use we would grow the following apples: Red Astracan, Gravenstein, Skinner's Seedling, Yellow Bellefleur, Yellow Newtown Pippin.

Is It Lippia?

To the Editor:—When at the coast last summer, near Soquel, I saw some Egyptian lawn grass, the roots of which I was told came from the Experimental Station. Can you tell me how I can procure some?—E. W. P., San Jose.

We do not know anything which is called Egyptian lawn grass. Perhaps you saw some Lippia, which is a lawn plant but not a grass, a prostrate plant with small leaves which endures almost any amount of drouth and makes a fine cover with less water than any grass which we know of. If you think that is the plant, and the sound of the name is similar, you can now get the roots in any quantity from your local nurserymen and florists.

A Good Date.

To the Editor:—I take pleasure in handing you a few dates grown by Mr. Louis Weber of Daunt, Tulare county, and ask your opinion of them.—W. J. Nicholson, San Francisco.

It is a very interesting fruit and the palm certainly worth keeping for its product. The fruit is rather small, and yet large enough to be acceptable in connection with its exceptionally fine flavor, thin skin and its complete ripening in October. Such dates will undoubtedly find profitable sale.

No Pears on Apple Stock.

To the Editor:—There are more young apple trees than I want on my place, but no pears. Will you kindly inform me whether it is practicable to graft some of the apples over to pears?—Subscriber, Napa.

It will not do; there may be temporary growth, but no permanent success.

Pruning Vines.

To the Editor:—I have Red Emperor, Flame Tokay, Cornichon, Malaga and Catawba vines set last spring. How would you prune? Run on trellises 4 feet high or stump off at 18 inches like we do Muscat?—Grower, Redlands.

The Emperor should be grown with long canes on either a high stake or trellis, if you prefer. The other varieties you mention, except the Catawba, can be grown like Muscats. The Catawba is an Eastern grape and should be grown Eastern fashion on trellis or high stake.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 6, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Warm and clear weather continued during the week, with brisk northerly winds. The dry winds caused no material damage, and the warm days were beneficial to citrus fruits. Oranges are coloring rapidly and will soon be ready for picking; the prospect is good for an excellent crop. Grape shipments are practically completed and dried fruits are mostly secured. Olive picking is in progress and a good crop is being gathered. Bean harvest is completed. Plowing and seeding are in progress. The soil has become very dry and rain is needed. Stock are doing fairly well on dry feed, but pasturage is rapidly failing.

Coast and Bay Sections.

Dense fogs prevailed in the Bay district at the beginning of the week, with generally clear and warm weather in the interior. Light frosts occurred in some sections. High northerly winds prevailed at the close of the week. In some sections farming operations have been suspended, owing to the dryness of the soil, but plowing and seeding are in progress in other places. Feed is scarce and rain is needed in all sections. Beans, alfalfa, corn and potatoes are nearly all secured and the hay and grain crops are under cover. Grapes and deciduous fruits are mostly disposed of. An excellent crop of apples has been gathered and large shipments are being made. Cloverdale oranges are in good condition. Tree pruning is in progress.

San Joaquin Valley.

Clear, warm days and cool nights prevailed during the past week. Light frosts occurred on several mornings, but did no damage. Wine making is about over for the season. Olive picking is progressing and a large crop will be harvested. Oranges are making good growth and picking and shipping are progressing; a large crop of excellent quality will be harvested. Orchards are being pruned in some sections. In the northern portion of the valley dry plowing and seeding continue. Dry feed is fair and stock are healthy and generally in good condition. Rain is badly needed for green feed and farming operations.

Southern California.

Warm and clear weather prevailed during the first of the week, with some fog in the coast districts. High winds and sandstorms prevailed Sunday, followed by phenomenally heavy rainfall. At Los Angeles the precipitation for 24 hours was 0.58 inch and at San Diego 1.68 inch. The rain caused some damage to streets and railroads, but in other respects was exceedingly beneficial, as the soil had become very dry and pasturage was failing. Apple picking and fruit drying are practically completed and walnut harvest is progressing. The yield of honey is larger than that of last season and heavy shipments are being made. Late tomatoes are being shipped east from Anaheim. Citrus fruits are in good condition in most places and orange picking has commenced.

Eureka Summary.—Unusually dry weather continues and dairy interests are beginning to feel the long drouth. Farmers are plowing and digging potatoes.

Los Angeles Summary.—A general rain at the close of the week caused farm work to proceed rapidly. A large acreage is being seeded to grain. An unusually heavy bean crop in most sections is safely harvested. Packing houses are busy handling lemons.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 8, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	1.89	5 79	5 75	68	38
Red Bluff	.00	.18	9 10	2.91	82	46
Sacramento	.00	.03	5 56	2.12	78	40
San Francisco	.00	T	7 54	2.45	74	48
San Jose	.00	T	2.62		78	40
Fresno	.00	T	5.06	1.26	76	40
Independence	.00	T	.45	68	72	38
San Luis Obispo	.00	.03	4 61	2 56	76	42
Los Angeles	1.10	1.18	1 14	1 32	72	46
San Diego	2.46	3 36	.17	.69	66	54
Yuma	51	1 07	.81	1.04	82	50

THE VINEYARD.

That Phylloxera Spot.

To the Editor:—In your issue of Oct. 21st you answer the queries of a subscriber who has found a phylloxera spot in his vineyard. Your advice to give "the death treatment" is wise, but some would make it even stronger, believing that nothing but the most radical measures give any promise of saving the rest of the vineyard.

Death Treatment.—The first question is, what is "the death treatment?" Something like twenty-five years ago Mr. F. W. Morse (now Dr. Morse of Oakland and San Francisco), who was then analytical assistant to Prof. E. W. Hilgard of the University of California. was engaged by the California State Viticultural Commission to trace the distribution of the phylloxera in the State. He did so with great patience and perseverance, and made a valuable report which was published.

One of his most remarkable discoveries was in Pleasant valley, near Vacaville. There an infested vineyard had been pulled up, and peach trees planted, some eight years previous to Mr. Morse's visit. No vines had grown there during that time, and the orchard had come into full bearing. Mr. Morse dug down between the trees and found grape roots full of sap, and supporting healthy colonies of the phylloxera, and ready to attack any new planting of vines. Will some one go to that spot now and investigate and report whether the sucking of the insects has kept up the flow of sap till this time?

In the summer of 1886 the writer called upon an eminent authority on viticulture in Vienna, Austria. In the course of conversation Mr. Morse's discovery was mentioned, and the writer was told that the same thing had been observed in Austria. It is evident that pulling up the vines is not "the death treatment." It is objectionable in that it brings the insects to the surface, and many will be shaken off the roots, and may be scattered far and wide. The less the roots are disturbed the better.

A Treatment Proposed.—It would be well to destroy the vines down to the surface of the ground, sawing them off and burning them on the spot, or perhaps better still to pile straw and brush on the vines as they stand, and make a fire that will burn the vines to the surface of the ground.

The surface of the ground should then be drenched with some good insecticide, say the salt, sulphur and lime wash used for scale bugs, or the sulphur and lime sheep dip.

To deal death to both roots and phylloxera under ground probably nothing will be more convenient than carbon bisulphide liberally used. The dose would depend much upon the nature and depth of the soil. As your inquirer lives in Napa valley, he need not go far to find some one who can give him expert advice. If we mistake not, Mr. John Wheeler, formerly of the State Viticultural Commission, is there (address, St. Helena) and can speak with authority on this subject. After getting advice from an expert as to a dose that would in his opinion kill both roots and insects, we would double the dose, and, if practicable, put a levee about the doomed vines and within a week soak the ground with water, as this will intensify the action as to the roots. Repeat the dose if later examination shows any live insects or grape roots in the soil. Above all the circle of vines destroyed should be large enough to take in all suspected vines, even if some apparently healthy ones be included.

Other Points. — The grapes on infested vines should not be picked. Mr. Morse found the grape box from an infested vineyard one of the commonest means for carrying the phylloxera to clean vineyards.

And after all possible thoroughness in destroying the pest in the spot described, your inquirer may later find it present in other parts of his vineyard, where it has already been carried, but is not yet in evidence. Too great care cannot be used to avoid carrying the insects from the infested spot. The workmen should wear gloves which should not be taken away from the infest-d spot until disinfected by exposure to some deadly gas, or should be burned upon the spot. The same may be said of other articles of clothing. High-topped boots may be worn, which should be cleaned on the infested ground and well oiled with neatsfoot oil, best by stepping in a bucket of it, which will not hurt the leather, but the oil will kill the insects if it touches them. Gas lime from the gas works is good medicine to keep the phylloxera from coming to the surface if liberally applied to the ground, and a heavy dose should kill the roots, but it may be hard to find, since oil has taken the place of coal so largely in gas production.

Fulton, Cal., Nov. 1. C. H. Dwinelle.

This is very thorough and ought to hold down the pest if it has not already gone beyond the spot. The life of vine roots in the soil without top growth is remarkable. It is claimed that up to three years ago at least there would occasionally shoots appear in the Anaheim district, though the vineyard had been uprooted fifteen years before.—Ed.

THE IRRIGATOR.

The Sacramento Valley Irrigation Convention.

To the Editor.—The Senate Chamber at Sacramento was the scene, on October 21, of an irrigation meeting of unusual importance. It was a convention of Sacramento Valley people called for the purpose of considering plans for the development of what is declared by leading engineers to be the greatest irrigation opportunity on the American continent.

Governor George C. Pardee, of California, who is also president of the National Irrigation Congress, presided at the meeting, which was called by the Sacramento Valley Development Association, an organization of Sacramento valley counties. Men prominent in State and National affairs were there, leading citizens from every portion of the valley, representing large private interests, counties, municipalities and organized commercial and improvement bodies.

The result of the meeting was a strong declaration for united effort by the people of the entire valley to bring about the early construction of some portion of what the officials of the Reclamation Service call "the great Sacramento Valley Irrigation Project." A resolution was unanimously adopted pledging the united support of the entire valley to such locality as may be selected by engineers of the Reclamation Service as the proper place of beginning.

Among those who addressed the meeting at length were Governor Pardee, Congressman Duncan E. McKinlay of California, Supervising Engineer J. B. Lippincott of the National Reclamation Service, President N. P. Chipman of the California State Board of Trade.

The irrigation possibilities of the Sacramento Valley have come prominently into notice through the work of the National Reclamation Service. Several years ago the United States Geological Survey began investigations. Since the Reclamation Service was created the work has been broadened and now includes stream measurements, surveys of storage reservoir sites, tests of the water itself, topographic surveys of the valley floor, investigations to determine the duty of water, plans and estimates for the construction of dams and canals.

The surveys have determined that the Sacramento valley proper comprises 2,661,120 acres, exclusive of the channel surface of perennial streams. The marked advantages for irrigation that have attracted the attention of the Reclamation Service are the vast area of fertile, irrigable lands, the unusual number and extent of natural storage basins, the ample water supply, and the winterless climate, which, with irrigation, admits of practically continuous cropping, thereby insuring much greater returns from land irrigated than could be secured where Nature is less kind.

That the water supply is ample is shown by the annual discharge at the mouth of the Sacramento river, reported by Reclamation Service engineers to be 26,000,000 acre-feet, enough to cover the entire floor of the valley more than 9 feet deep.

Rain falls only in winter in the Sacramento valley and watershed and consequently storage is essential to any comprehensive scheme of irrigation. Fortunately, Nature has provided immense basins where waters may be stored on a vast scale at comparatively small cost. The natural advantages for storage are remarkable. The most striking instance is the Big Valley reservoir site on Pit river, where, according to the report of Engineer Lippincott of the Reclamation Service, the entire flow for a year from 4000 square miles of watershed with a heavy rainfall may be impounded by the erection of a dam, 120 feet in height, at a cost for construction of from $2.01 to $2.23 per acre-foot capacity.

The investigations have now progressed to a point where the engineers in charge are enabled to reach definite conclusions and have partially developed plans for a great irrigation system to cover the entire valley floor. Mr. Lippincott has said of this project that it constitutes one of the greatest, possibly the greatest, irrigation opportunity in America. Fortunately it can be constructed in units, some of which will not call for the expenditure of any vast sum.

Since the Reclamation Service began investigations in the Sacramento Valley, doubt has been expressed as to the acceptance by Sacramento valley land owners of the conditions imposed by the Reclamation Act, but there are many evidences that the Sacramento valley land owners have awakened or are awakening to the real benefit to their lands and to them of the Reclamation Service project. One enterprising community in the Sacramento valley is already organizing a Water Users' Association to deal with the Government and urge the construction of the unit that would benefit this community. A report made to the Valley Irrigation Convention showed about 26,000 acres already signed to this preliminary organization. W. A. Beard.

Sacramento.

Underground Waters in Southern California.

The underground waters of the coastal plain of southern California have recently been investigated by hydrologists of the United States Geological Survey, and Mr. W. C. Mendenhall has prepared, under the direction of Mr. N. H. Darton, three papers on the subject. The first deals with the development of underground waters in the eastern coastal plain region, the second with the underground waters in the central coastal plain region, and the third with the underground waters in the western coastal plain region. When the series is complete it will contain a list of nearly all the wells in this section of the State, with such data as to water levels, irrigation systems, and irrigated lands as could be collected by a careful canvass. The first paper of this system is now available as "Water Supply and Irrigation Paper No. 137."

The larger part of this report consists of maps and tables. The text is brief and chiefly descriptive, but includes a discussion of the effects of development and drought in bringing about those changes in water levels and in the outlines of artesian areas which have been most marked within the last five or six years. The maps presented with the report show the areas irrigated in the spring of 1904, when the field work was done, the pumping plants and distributing systems by which the water is procured and conducted to the land where it is used, the areas of artesian water-bearing land at the beginning of 1904 and the original artesian area, the zones of relative alkalinity in the underground waters, and the elevation of the planes of saturation outside of the present artesian belt. Where the data are sufficient the elevation of the plane of saturation is shown by means of contours.

By the valley of southern California, within which this work is undertaken, is meant that region extending 30 or 40 miles south of the San Gabriel and San Bernardino mountains, and lying between the Pacific ocean and Cajon and San Gregonio passes. It includes the greater part of the productive lands of the southern section of the State, and within it lie most of the prosperous settlements which have become famous for their beauty, fertility and healthfulness. The Anaheim and Santa Ana quadrangles, which together comprise what is called in this paper the eastern coastal plain region, cover an area 35 miles long and 15 miles wide.

Within this area crops and soil are varied, as is generally the case throughout the coastal plain, and irrigation practice is not at all uniform. In the Anaheim quadrangle about Orange, Fullerton and Anaheim are many citrus groves, and deciduous fruits and walnuts are extensively cultivated. Farther south, in the peat lands, celery is becoming a more and more important crop, and sugar beets, corn and alfalfa are extensively grown. As the rainfall is not sufficient to mature the more valuable crops, resort must be had to irrigation, and the extension of cultivated areas is thus dependent upon an increase in the water supply. The flowing waters from the mountain canyons were long ago appropriated, and the development of the subterranean flow is hence highly important.

Three streams supply surface irrigating waters for the Santa Ana and Anaheim quadrangles. These are the San Gabriel, the Santa Ana, and Santiago creek. The irrigation systems dependent on these streams are described by Mr. Mendenhall.

The reclamation of the peat lands in the western part of the Santa Ana quadrangle and in adjacent quadrangles to the west has been a problem of drainage rather than of irrigation. Under a State law, passed in 1897, two drainage districts have been organized, each with its governing board of three directors, who properly apportion the expenses among the land owners benefited. These two districts are briefly described in this report. The source of the underground waters and the permanence of their supply are discussed by Mr. Mendenhall. The interdependence of the wells is shown and the cost of the wells is given.

The studies of which Mr. Mendenhall's present paper is a part are planned to cover all the important water-bearing lands of the valley of southern California.

THE POULTRY YARD.

Fattening Turkeys.

Those who desire to test the profit in putting a little extra finish on turkeys can find suggestions on feeding in the result of a set of experiments described in the Orange Judd Farmer by Prof. James Dryden of the Utah Experiment Station. The experiment was to determine the advisability of feeding in confinement to improve the quality and quantity of meat and to determine the cost and profit. A feeding test of a month's duration before Christmas was made with six young, but practically mature, rather small bronze turkeys raised under ordinary farm conditions. When purchased they weighed 65½ pounds and cost 13 cents a pound, or $8.50. Next day they weighed 64.1 pounds and the day after 67.4 pounds. The average of these latter weighings—65.7 pounds—is taken as the starting basis.

During the test the birds were kept in a pen 10x10 feet in the general poultry house. They were never let out. The pen has an open front, with a curtain

door of factory cotton. The roosting pen, boarded up on three sides, is provided with a curtain door to drop on cold nights, but was never closed. All but two birds had good health throughout. These two were part of the time ailing, but this was enough to reduce their gain in weight.

The feed and management were as follows: In the morning whole wheat was scattered in a little straw on the floor; at noon corn was given; at night a mash feed. Skimmed milk was always before them. No other animal food was given. Their green food consisted of all the sugar beets and lucerne leaves they would eat. Grit was also supplied in abundance. During the first eight days the mash consisted of two parts bran and shorts and one-fourth part ground wheat mixed with water. No mash was given for the next eight days. For the remainder of the test one-fourth part of oats was added to the above recipe. During the first three weeks twice as much whole wheat was fed as corn, and during the last week about equal amounts of each. During the first two weeks a little beef scrap was also fed. The total cost of food was $1.01, or about 17 cents per fowl. This figure was slightly modified, however, by the sale during the last week of one of the birds.

In three weeks the six birds had gained 13.3 pounds. This added to the gains made by the remaining five birds during the last week made a total gain of 16.4 pounds. Of this, 13.2 pounds were made by four of the birds, the other two making up the balance. When sold the birds weighed 82 pounds, and after dressing 76.2 pounds, a loss of about 7%. The dressing consisted of bleeding and plucking the feathers. When dressed the price realized was 17½ cents a pound, or $13.05 for the lot. This is $4.55 more than the price paid for them. Deducting the cost of food, there is left a profit of $3.54 on the original investment of $8.50. Those who ate the birds declared they had never eaten turkeys of better quality. The experiment, therefore, shows that young turkeys may be taken from the farm and fed in small pens with the great probability of increased weight, heightened quality and good profit.

Poultry Keeping for Women.

Mrs. O. H. Burbridge of Los Angeles county gives the California Promotion Committee a sketch of her way with poultry and the way in which others can succeed:

California imports each year from the middle West hundreds of carloads of eggs and dressed poultry, for which high prices are obtained in the markets. Why we should not only supply our home demand, but also send hundreds of carloads from this State to the East each year, has been a source of wonder to me ever since I engaged in poultry raising. The prices of dressed poultry and eggs for market use are always so high that the man who does not care for fancy birds can always make a good living furnishing hotels and private families with stock.

I have established on my ranch in Los Angeles a fatting plant on which the birds are fed according to the method used in England, where they are placed in long rows of crates four or five birds to the crate and fed twice a day in troughs placed in front of the crates. For the first week I use the best oat flour and sour milk made into a mash and gradually thinned so that the food is like thick gruel by the end of the fatting period. This time varies according to the stock, a Mediterranean taking a week or more longer than the American, English or Asiatic classes. For this fatted stock I have never received under thirty cents per pound, and in some seasons of the year as much as forty-five cents. This year one of the largest restaurants in Los Angeles has offered me fifty cents per pound the year round for Orpington Ranch capons. The egg market has always been very steady and prices have been high so that a good profit can be realized on eggs alone, by selling off the young cockerels and saving the pullets each year just for market eggs.

So many inquiries come to me as to poultry raising in California indicating that a false notion exists among many Eastern and Northern breeders as to the ravages of roup and lice. According to many of the inquiries, this part of the United States is referred to as being visited by these two evils. I have raised thousands of chickens myself, taking all of the care of them from the egg to the mature fowl, and have had no trouble with roup whatever. True I have had sanitary surroundings, clean yards, plenty of fresh, cool water for my birds and well ventilated, draughtless sleeping quarters. I have found that with due care the lice are no worse than in any other section, but the watchword of the poultry raiser from the time the egg is entrusted to the incubator or hen until the bird is ready for the table, breeding pen or show room, should be "cleanliness." By that I mean no lice, clean straw to scratch in, clean water to drink, clean houses so no foul orders can disturb the good the day has brought. This habit of cleanliness is easy to establish on a ranch when the work is done systematically, but a poultry raiser cannot do part of the work one day, nothing the second and catch up on the third. It is necessary each day to do for the comfort of the flock all these little things and the hen is a most grateful creature, repaying kindness by filling the egg basket and incidentally one's pockets.

I started with a trio of Buff Orpingtons, after a trial of several other breeds, and when I found the chicks were so easy to raise and so sturdy, I purchased eggs from several of the large Eastern and English breeding farms, so my first year I went into the show room with a fine lot of stock. I took three silver cups and over 100 ribbons on an entry of thirty birds in two shows, and then started to work in earnest to build up the strains I had. I was able to supply a great number of settings of eggs to my fellow fanciers at good prices, and my second year saw me start the breeding season with 1200 fine birds without a cull in the lot. I had the eggs booked in early January for the remainder of the season and had many orders for breeding stock that I was not able to supply on account of the egg orders. I have always purchased a fine breeder in England or America whenever I was able to get just what I wanted, regardless of the price, and I never lost money in doing so, for the big Eastern breeders have engaged eggs of a famous winner from me before I saw the bird myself, and I have always had a steady sale for my best at all times in California.

My experience in raising poultry has been to me a most interesting one. From the very first I have taken not only a keen interest but a great delight as well in this work. It has been this joy in the work that has prompted me to build up my ranch from a very modest beginning to the big specialty ranch it is now. I now have 100 breeding pens and my fattening plant has a capacity of 5000 birds every three weeks. How my efforts have borne fruit you may guess, when I tell you that this extensive establishment has grown up from my modest beginning with three chickens. It has proved not only pleasant but profitable and my zeal has kept pace with my experience and understanding of the business.

I take a keen delight in conducting my business, and it is not from necessity but from choice that I myself buy all the supplies, hire the needed help, superintend the construction of new buildings, attend to the mixing of grains and the grinding of feed, prepare my own remedies for sick fowls and treat them when ill. All this fills in a busy life—a life in which these healthful pursuits carried on mostly out of doors are the greatest charm as well as a source of profit, yielding me a clear gain of $5000 in only fifteen months.

Drake do not need to be specially fed before being put in the breeding pen; in fact, this might injure them for the purpose. They do need, however, to be in good condition and to be kept so.

THE FIELD.

Breeding Ferrets.

To the Editor:—Since my articles on ferrets appeared in the Pacific Rural Press I have received numerous inquiries regarding them. Several correspondents want to know if they will work on gophers and squirrels. I wish to say that they will successfully exterminate both gophers and squirrels. The following article will show that they have been used with success on ground squirrels. It was taken from the Spokesman Review, Spokane, Wash:

Colfax, Wash., July 9th.—W. A. Davis of Steptoe has discovered a new and effective method of destroying squirrels. Mr. Davis got some ferrets, which he uses to hunt squirrels, which are one of the greatest pests of this section. The ferrets go into the holes after the squirrels, and either catch and kill them or drive them out of the holes, when dogs catch them. Mr. Davis took three ferrets and two dogs and went into the fields. In less than two hours he had killed 62 squirrels. Mr. Davis exhibited the ferrets in Colfax yesterday, and they attracted much attention. He says they are the most successful squirrel exterminators he has ever tried, and he believes it will pay the farmers in his country to breed ferrets and train them to hunt squirrels, and he believes that systematic efforts along this line will eventually solve the squirrel problem. With half a dozen industrious ferrets a farm could soon be cleared of squirrels, and once they were driven out it would be comparatively easy to keep them exterminated.

Breeding Ferrets.—The breeding season commences about March 1st and ends in September. The female ferret "comes in" much the same way as a sow pig or a bitch, and she remains in this condition about a week or more. A little experience will soon enable you to judge the right time for mating. As soon as you notice this development, place her with a male ferret in a box or pen and leave her there for two days. During the breeding season each male should have a pen or box to himself. One male will serve six or eight females. After the females have all been bred you can keep several females together for convenience of feeding, etc. They carry their young six weeks, which are born with their eyes closed, opening when they are six weeks old.

About two weeks before you expect the litter, place each female in a pen by herself. Give the pen a thorough cleaning and put in about six inches of dry clay or earth and some clean straw. The nest should be a box about 12x14 inches and about 9 inches high. This box will not need any cover. Pack the box full of straw, and with your hand make a firm nest near the bottom of the box. They cover their young with straw and line their nest with fur taken from their own body. When about three weeks old remove the straw from over the nest so that you can see the young. As soon as they can eat, give them a little bread soaked in milk and a little fine-chopped meat while in the nest, and when they have their eyes open and will come to the dish, they are ready to wean. The old ferret should have all the milk and bread she will eat and a little meat every day or every other day. By weaning early and taking good care of the old ferret, you stand a better chance of getting a second litter.

958 Pine street, San Francisco. Wm. Styan.

A Fear of Ferrets.

To the Editor:—I have received so much valuable information from your paper that I feel very grateful to you and it; but in the last two issues there have been communications from Mr. Styan concerning ferrets about which I am apprehensive.

Perhaps I may be over-anxious about these, but I know from practical experience how ready people are to take any means of getting rid of squirrels and gophers, and I want to suggest that there is danger in following Mr. Styan's idea of breeding ferrets to kill off gophers, etc.

Mr. Styan owns that ferrets are a species of weasel and that they rear very large litters of young. Now I may be mistaken in thinking that the attention of Mr. Styan's readers should be called particularly to these two facts, but I have this excuse: I have been in the Hawaiian Islands and know what the introduction of an animal for the extermination of cane rats has done there. As you probably know, there is a kind of rat in the sugarcane fields of Hawaii which is very destructive to the cane. Some very enthusiastic people imported the mongoose (of a weasel nature) to kill off the rats. Now in India the mongoose is all right; that is its home and it does its work well, killing snakes, rats and all sorts of pests; but, you know, in a strange country animals often develop mischievous characteristics. The mongoose found in Hawaii that chickens and eggs made pretty good eating, and from that they went on to the idea that there was no need of hustling for rats when there was better eating in the nearest chicken-house. I have before me a letter from a relative in Hawaii telling me of losing thirty-two out of thirty-six young chickens. The mongoose sucks the blood and then throws the body aside and goes for another. You go to gather eggs and you find only the shell—the contents have been sucked out through a small hole.

Now I may be mistaken, but it seems to me if people in the country secure ferrets to exterminate the squirrels and gophers we may soon have a worse pest to contend with—it is so easy for a few to escape from captivity through a little carelessness. What do our poultry keepers think of letting such animals loose? I am quite sure I hope no one near my own place will take the notion to invest in them.

San Francisco. L. M. Anderson.

There is nothing new in Mr. Styan's proposition that ferrets are good for squirrels nor in Mr. Anderson's fear of their becoming a pest. Both claims were thoroughly threshed out in our columns twenty-five years ago. Two things are properly to be inferred from such long experience—first, that as the ferret was proposed as a squirrel cure so long ago, and we have as many squirrels as ever, the cure did not catch on for some reason; second, as the ferret had every chance to become a pest twenty-five years ago and did not do so, the probability is that its multiplication in a wild state is not to be expected.—Ed.

Requirements of Good Beet Seed.

To the Editor:—A few weeks ago I showed by a report on three samples of alfalfa seed, examined for impurities, how disastrous it is to the crop, to sow impure seed, and how necessary it is to know, before planting, that seed is free from foreign or obnoxious weed seeds.

In many foreign countries strict measures are taken to allow only good seeds on the market. As regards sugar beet seed, the Associated German Sugar Manufacturers have recently adopted a modification of the Magdeburg seed rules. As modified the rules follow:

1. One kilogram of seed must give not less than 70,000 germs in fourteen days.
2. Of this number not less than 46,000 germs must sprout the first six days.
3. Out of 100 balls, not less than 75 must germinate.
4. The percentage of moisture is normal up to 15%, but goods may be delivered with a percentage of 17, but when percentage is between 15 and 17, a rebate must be allowed in proportion to the weight of the moisture.
5. Foreign matter is allowable to the extent of 3%, but goods are deliverable when percentage reaches 5%.

Seed between 3% and 5% must be allowed a proportional reduction.

6. The violation of any of the rules 1 to 5 makes the seed not acceptable.

7. Differences in examination are to be finally decided by an average between a new trial, made by the station, whose analysis is contested and a trial made by the laboratory of the Association of the Manufacturers of Sugar.

In presenting the following report, I have selected three of my tests that show how sugar beet seed varies in regard to germination:

	Size of Beet Balls.	Average Number of Sprouts in 100 Beet Balls	Number of Balls in One Kilogram.	Number of Sprouts in One Kilogram.	Percentage of Moisture	Percentage of Purity
No. 1	Uniformly large	185	41,493	76,762	10	99
No. 2	Small	94	73,152	68,762	10	99
No. 3	Small and large	132	.....	59,549	5	5 99+

No. 1 is first-class seed. When seeds are small there should be at least 130 sprouts in 100 beet balls.

Alice F. Crane.
Tester and Examiner of Seeds.
314 Cherry street, San Francisco.

METEOROLOGICAL.

Weather Conditions and Inferences for the Season.

Written for the Pacific Rural Press by Mr. L. E. Blochman of Santa Maria.

Because no appreciable rains fell in October over the State, some are feeling an alarm for the season. Last year 7½ inches rain fell in San Francisco before the end of October, this year but a trace. Even in the northern part of the State, where good rains always fall in October, only scant precipitations are so far of record.

A review of past seasons, however, should quiet every cause of apprehension for this that we should classify as a late opening rainy season. There were three very wet years in the 60s viz.: 61-62, 66-67 and 67-68. In each one of them it was well into November before rains began in the Bay district. The excellent season of 80-81 opened up only on the very last days of November. Many others can be cited, but this is sufficient to show from data of the past that late opening seasons have more in their favor than against them.

The reason for the lack of any October rains is the persistent high barometer that overlies the northwestern part of the coast, an apparent extension of what we call the summer type of weather, with its corresponding low barometer in Arizona and southern California. The Sonora rains or the Gulf of California rains were quite late in falling in Arizona, seemingly a full month later than the average (last year's phenomenal rainfall out of consideration). The extension of these Sonoras gave San Diego nearly an inch of rain thus early in the season and more to the eastward.

The rainfall for central and northern Arizona has been above the summer average, but, of course, not to compare with last season's. Average to heavy Sonora rains always are a forerunner of reasonably wet seasons to the northward. But not in a direct proportion; some very wet seasons of Arizona were followed by only average seasons hereabouts. But the very driest season of Flagstaff, Arizona, for instance, was the summer of '97 followed by our drought of 97-98. So that the rain bearing area of this north tropical extension belt has some relationship with the more northerly (so called) Japan current belt. Approximately true as this is, it would afford one favorable factor in the forecast for our season.

Of far more consideration, however, is the movement of the high barometer areas from across the Pacific as they impinge themselves on our California coast. This has only had a partial study, on account of the difficulty of getting the proper data and ascertaining any normal of barometrical pressure.

However, in a general way, this much may be claimed regarding these rain bearing and rainless belts. Persistent high barometer areas cross over the Pacific ocean and strike this State in different latitudes in summer compared with the winter. To the southward and northward are belts of a lower barometrical type in which rain bearing areas move and yield varying degrees of precipitation.

These high and low barometrical areas have a generally easterly trend, but they may be deflected northerly or southerly if they meet with obstructions in their direct course.

The summer type barometer is a high one, generally over the whole west United States coast, the low being to the southward and to the northward. Alaska rains prevail in summer and Mexican coast rains as well. In winter the belt moves southward, and the center of the lows will impinge the coast opposite Oregon and Washington.

Some seasons, however, as this very one, the low barometer belt is later in moving down its winter course. That Oregon has had some good October rains (though not up to the average) is due to the deflection of the rain bearing area. We get rains around Point Conception from storm centers that strike in on the Oregon coast 500 or 600 miles farther northward through the same deflecting influence—a high barometer to the east of the storm center, forcing it to the southward or northward. More usually it is deflected southward in winter, because it is colder to the landward over the northerly land areas, and cold air has a high barometer.

Now in some seasons the apex of this high barometer area settles between Point Conception and San Francisco during the very height of the rainy season instead of being more nearly off the Lower California coast. This causes the dry and half dry seasons for points south of the bay and in the interior from Stockton southward.

In some seasons, as we noticeably observed it in the 97-98 drought, this high barometer area in November and December would be even higher than the average of the off seasons, causing a still greater shortness in precipitations. Both droughts of 76-77 and 97-98 were wet seasons in Oregon, much wetter than last season. The rain bearing area was stopped from trending down the coast by this wall of high and dry atmosphere and gave them the more.

This season, so far, the barometrical pressure south has been prevalently low, and though it is rather too early in November to predict of its remaining so throughout the month, we have reasons to infer the absence of that persistent high that we referred to as the drought producer of the south and central parts of the State.

In fact, as far as our observation goes, we much prefer to see the apex of the high barometer over Washington than over Central california. For sooner or later the rain bearing area will move it away and it will rain more generally down the whole coast than otherwise.

As illustrative of the contrast in rainy seasons caused by the relative positions of these high barometer areas, let us cite the seasons of 92-93 and 93-94 for Eureka, San Francisco and Los Angeles:

	Eureka, Inches.	San Francisco, Inches.	Los Angeles, Inches.
1892—1893	49	22	26¼
1893—1894	55	18⅛	6⅝

The average rainfall for Eureka is 45+; for San Francisco 23+ and Los Angeles about 16 inches.

In November of '93 heavy rains fell in Eureka, reaching down in part to San Francisco about 4½ inches and tapering off to only ½-inch in Los Angeles, this extraordinary discrepancy being caused by the persistent high barometer between Los Angeles and San Francisco. In 92-93 there was an absence of these highs and the Los Angeles precipitation went to the unusual of exceeding the San Francisco rainfall.

The study of our Pacific coast climatology is hardly more than fairly begun, as we accumulate more data and apply it to past observations. We shall some day be able to forecast coming rains with astonishing results.

THE STOCK YARD.

World's Greatest Official Butter Record Made by a Guernsey.

The Guernsey cow, Yeksa Sunbeam 15439, owned by Mr. Fred Rietbrock of Athens, Wis., has completed the largest year's record of any cow in the world, made under public supervision, that of an Advanced Register and Agricultural Experiment Station. This record in detail is as follows:

	Pounds Milk.	Per Cent Butter Fat.	Pounds Butter Fat.
October, 1904	1,428.2	5.69	81 26
November	1,322.5	5.63	74.32
December	1,294.4	6.08	78.70
January, 1905	1,217.0	6.04	73.51
February	1,060.8	5 75	61 00
March	1,185.1	6 05	71 70
April	1,089.6	5.79	63 09
May	1,127.5	5.75	64.83
June	1,158.4	5.25	60 82
July	1,266 0	5.88	74.44
August	1,463.8	5.42	79.34
September	1,307.5	5.67	74.14
Total	14,920.8	5.74 Av. %	857 15

This was made under the rules and regulations of the Advanced Register of Guernsey Cattle and supervised by the Wisconsin Experiment Station. Adding one-sixth to the butter fat to cover the weight of salt and water found in butter in addition to the butter fat, we have 1000 lbs. of butter for the year's work of this cow. This is nearly three times the amount she was required to produce to enter the Register.

Yeksa Sunbeam 15349 was bred by the late W. D. Richardson of Garden City, Minn. She was dropped April 2, 1895, making her about nine and one-half years old when commencing her record. She calved Sept. 11, 1904, and was not in calf at the end of the year's record. Prof. Woll of the Wisconsin station writes as follows of the cow's work after a personal visit to the farm:

"In view of the excellent and almost incredible results that are reported from Mr. Rietbrock's herd I considered it my duty to look into the matter personally, and therefore conducted the August tests of the cows in his herd last week. When the reports are received you will note that his cows are doing better, if anything, this month than the immediate preceding months. He has certainly succeeded in bringing together a wonderful lot of cows and he is especially favorably situated in having clover fields and pastures such as have not been seen in this part of the State for many years. The possibilities of northern Wisconsin for dairying were never more strongly impressed on my mind than by this interesting visit to Athens."

At the completion of the year's record, Prof. Woll again wrote:

"I am glad to learn that Yeksa Sunbeam will head your list as having the greatest official year's record. She is a wonderful cow, and had made a record that it will be very difficult to beat. In fact, I do not see how it can ever be beaten, except under conditions similar to those under which her own test was conducted, when the cow does not get in calf before the end of the official year. I have every confidence in the correctness of the test of this cow and others in the Athens herd. I think I wrote you on this point on my return from Athens. While I did not suspect anything wrong before going there, I felt that I ought to be in position to testify myself to the correctness of the work done, and I can do so with full confidence. Mr. Reitbrock naturally feels very elated over the records which his cows are making."

FEED OF YEKSA SUNBEAM DURING THE TEST.

October—Silage and hay 25 lbs, with 15 lbs. grain mixture composed of 1 part oilmeal, 2 parts ground oats, 2parts gluten feed and 4 parts bran.

November—Corn silage 30 lbs., with grain mixture the same as October.

December—Same as November.

January—Silage 30 lbs., rutabagas 10 lbs., 15 lbs grain mixture composed of 1 part ground oats, 10 parts gluten feed, 2 parts bran, 1 part oilmeal, and alfalfa, hay, ad. lib.

February—Silage 30 lbs., rutabagas 10 lbs., 14 lbs. grain mixture composed of 4 parts white bran, 2 parts gluten feed, 1 part oilmeal, 1 part ground oats, 1 part cornmeal and alfalfa, ad. lib.

March—Same as February.

April—Same as February.

May—Same as February.

June—Pasture, mixed clover hay and 6 lbs. above grain mixture.

July—10 lbs. mixed grain ration composed of 300 lbs. bran, 1200 lbs. oats, 200 lbs. gluten feed and 100 lbs. oilmeal. Pasture ad. lib.

August—10 lbs. above grain mixture, 8 lbs. green clover at noon, and pasture ad. lib.

September—Clover pasture, green corn, clover hay, and 2 lbs. gluten, 6 lbs. bran, 4 lbs. ground oats, 2 lbs. oilmeal.

What the Owner Says.—Mr. Reitbrock, in writing of the work of the cow, says:

"Yeksa Sunbeam will have surpassed all other cows so far as tested in butter fat production by a very safe margin—that is, safe for the present at least. She will also exceed the milk record of Imp. Hayes Rosie. If you will figure the matter over and care to make a statement, you will find that her largest milk production for one day was August 19, 1905. Upon the basis of our composite three-day test her butter fat production for that day, based upon 5.9% fat and 52 lbs. milk, was 3.07 lbs. fat. Her best week was from August 17 to August 23, inclusive, during which period she made 352 lbs milk. Our home test reported, having been based upon her production of August 17, 18 and 19, 5 09%, would make 20.77 lbs. fat in that week. Her largest monthly production of butter fat was in August, 1905, when she made 81.26 lbs. fat, while her largest milk production for one month was August, 1905, when she made 1463 8 lbs. milk.

"During the first 120 days, commencing October, 1904, she made 300.53 lbs. fat, while during the first 187 days she made 451.49 lbs. fat. Her lowest per cent of butter fat during the twelve months in question was June, 1905, when the percentage was 5.25; while her highest per cent of fat, 6.08, was in December. In three different months, to-wit, December, January and March, her per cent of fat was a trifle over 6, while during the other nine months the per cent was over 5 and under 6. Her average weight during the year has been about 1150 lbs. Her best work during the year has been on pasturage, supplemented during the hot weather and fly time with soiling crop composed of oats and peas. For the size of the cow and the amount of her production, I think the grain ration has been comparatively small. She has always had a good appetite for roughage, and, of course, has had plenty of it."

This record is not only a great credit to Mr. Rietbrock and his herd, but of estimable value to the interests of the Guernsey breed, as it shows in an undisputable manner the capability of a Guernsey cow.

Agricultural Review.

Butte.

PICKING ORANGES IN OROVILLE.—Sutter Independent, Nov. 2: Picking and packing oranges for shipment began on the Hearst orchard at Palermo Saturday.

OLIVE SEASON OPENED.—Gridley Herald, Nov. 3: The olive season is now about beginning. The crops on the trees in this vicinity are not as good as last year as regards quantity, though the quality of the fruit is fine. It is a rather singular fact that this neighborhood produces about as good olives without irrigation as are grown in the irrigated districts of the eastern part of the county. Last year some of the olives grown in this place were fully as good as any of those from the irrigated orchards. The olive is a hardy tree.

A GOOD CORN CROP.—Gridley Herald, Nov. 3: Homer Woodworth has gathered and shelled his crop of twenty-nine acres of corn grown about 2½ miles from Gridley, which yielded 65 bushels per acre of shelled corn.

Los Angeles.

GREAT YEAR FOR ORANGES.—Los Angeles dispatch to Chronicle, Oct. 31: With the opening of the orange shipping season next Wednesday the growers of southern California are convinced that they will begin the greatest year in the history of the industry in this State. They base this opinion on the condition of the crop so far as it can be estimated at present, and the past season, which has never been equaled in volume of shipments and rarely in prices realized. The total shipments last season were 29,845 carloads, of which 4250 were lemons; a total of 24,595 carloads of oranges from southern California alone. The total amount of money involved was $23,756,000, the principal items making up the sum total being as follows: For the railroads, $9,750,000; refrigerator car lines, $105,000; growers and shippers, $13,200,000. The prices were better than for the two seasons previous, but somewhat under those realized three and four years ago. This season's yield of Navels, it is expected, will be in excess of last year's. With the wider market which has been secured for the fruit and its increasing popularity in the East, much better results are looked for. The rate question is a disturbing factor in the situation, but shippers are in hopes that this may be satisfactorily adjusted, and with this out of the way, the prosperity of the industry will be greatly enhanced.

Orange.

ORANGE COUNTY SHIPS EARLY ORANGES EAST.—Los Angeles dispatch to Sacramento Union, Nov. 4: Orange county to-day made the first shipment of this season's oranges from southern California. The shipment was composed of two cars of well colored, good sized Navels, and were consigned to the Eastern markets for the Thanksgiving trade. They were shipped from Orange by the Atland Fruit Co. of this city, the fruit being picked at that point by J. R. McGinnis, agent there for the company. The shipment is several days in advance of the first shipment last season.

Placer.

MARKETING TURKEYS IN LINCOLN.—Lincoln dispatch to Sacramento Union, Nov. 5: The shipping of turkeys for Thanksgiving has already begun at this point. J. B. Sells shipped a large number to-day, for which he received 25 cents per pound. No doubt big prices for turkeys will prevail this season and those who are lucky enough to have big flocks will reap a big harvest. The crop of turkeys this year is light, many of the young birds having died early in the season from the over-eating of grasshoppers.

Sacramento.

TOKAYS PAYING WELL.—Orangevale dispatch to Sacramento Union, Nov. 5: E. A. Pierce, James Pierce, William Calder, August Schweigler and other prominent growers of the Orangevale district say that the late fruit season was a good one, and that Tokay grape growers have all done well. Indeed, they say that some ten-acre tracts which a year ago sold for from $2500 to $4000 about paid for themselves in the last season. They expect the electric road projected to pass close upon the boundaries of Fair Oaks and Orangevale to be speedily constructed, which will enable transportation to be more easily and profitably made, and the result, they believe, will be a boom in Tokay grape growing. They add that carloads of grapes from other sections the past season brought from $1100 to $1600, while those from the Orangevale region brought $1800 and $1900. Four carloads of oranges will be sent to Australia from Orangevale on the 20th inst. The shipment will be made up from the orchards of William Calder, D. D. Harris, G. M. Mott and Jones & Givens.

PREPARING FOR HIGH WATER.—Vorden dispatch to Sacramento Union, Nov. 5: J. W. De Back has the contract for a piece of "fascine" work on the banks of the river in front of Vorden. This work has been done very successfully in Holland for many years, and it is expected that it will strengthen the river banks and keep them from cutting in during the high water this winter. The work consists of a great many brush mats being bound together under great pressure by a special machine, tied with galvanized wire and held together with long stakes to form a high bank, which will fill in with sediment from the river. Quite a force of men is at work to complete the job while the water is at its lowest mark.

San Bernardino.

SUGAR CAMPAIGN CLOSED.—Chino Valley Champion, Nov. 3: The last beets of the 1905 sugar campaign were received on Monday and at 6 A. M. on Tuesday the slicing was finished. From that time until Wednesday night the work at the various stations was completed until the last syrup was evaporated and the last sugar run into the sacks. Now the machinery in the mill is silent and all is quiet, except for the work of clening up. About 125 men are retained for this work and will be kept a week or ten days, when the force will be reduced to 40 permanent men. During the campaign 44,337 tons of beets were sliced. The entire harvest averaged only a shade under 15% sugar, which is a very good record. The product of the campaign is 98,500 bags of white granulated sugar, 100 pounds each, or 9,850,000 pounds—4925 tons.

San Joaquin.

A PROSPEROUS SEASON FOR LODI.—Stockton Independent, Nov. 4: A table compiled by J. W. Dougherty shows that table grapes averaged $1500 per car and wine grapes were from $13 to $15 a ton. In the following list of products it should be remembered that Woodbridge, Acampo, Lockeford, Clements and other sections are not included: Shipped out, 600 cars table grapes; shipped out, 400 cars wine grapes; crushed at Lodi, 400 cars wine grapes; total crop yield, 2100 tons; shipped out, 35 cars tree fruit; shipped out, 25 cars dried fruit; shipped out, 40 cars almonds; shipped out, 150 cars grain; shipped out, 3800 cases of eggs; shipped out, 30,000 chickens; shipped out, 50 carloads of hogs; shipped out, 135 cars of melons; shipped out, 300 pounds of cream daily; shipped out during month of September, 540 cars grapes and melons.

WHAT OLD VINES WILL DO.—Lodi Sentinel, Nov. 4: The Sentinel has obtained from a well-known grape grower, who thoroughly understands the business, the average net yield, year after year, for a vineyard of Tokay grapes, vines ten years old or upwards. Old vines bring better returns than young vines. One acre should yield 400 crates of grapes, with possibly one-quarter allowed for culls, this would leave the shipping quantity 300 crates to the acre. A heavy pack will run 70 crates to the ton. Grapes sell normally at 65 cents per crate f. o. b., although the price this year has been considerably higher than 65 cents. The net income on the vine per crate is nominally 40 cents. Twenty-five cents per crate will amply pay for the labor and material of picking and packing. So when high prices are realized, as was the case this year, the profits are considerably over the average stated. Fifteen-year-old vines will net $120 an acre for shipping grapes. Each acre will yield five tons of culls at $8 per ton. Culls are incident to the packing and handling of table grapes. Therefore, counting shipping grapes and culls, one acre will net $160. The above figures are not in any sense exaggerated; in fact, are too moderate. Several growers have realized over $400 an acre clear from Tokays.

Shasta.

IGO APPLE TREES BEAR SECOND CROP.—Redding special to Call, Nov. 1: There are some June apple trees in W. R. Thomasson's orchard near Igo that are now bearing their second crop for the year. The most remarkable feature about the phenomena is that immediately after the first crop was harvested the grasshoppers visited the Igo section and stripped the trees completely of leaves, even cutting off many of the small branches. Soon after the grasshoppers got through with the trees the limbs began to send forth new leaves, blossoms came, and now Mr. Thomasson is gathering his second crop of June apples in October.

Solano.

CLOSE OF THE FRUIT SEASON.—Vacaville Reporter, Nov. 4: The fruit season of 1905 came to a close last Sunday, October 29th, with the departure of the last carload of grapes for the eastern market, making the total shipments for the season from Vacaville 850 cars against 558 for last year. While in every other respect this season was earlier than last year, in the matter of freight shipments we were a little later, the first carload by freight left Vacaville last year on May 13th, while this season the first carload went out May 17th, four days later. Previous to this, however, six carloads of cherries had gone out by express. The last car for 1904 went out October 22d. Generally speaking, the season of 1905 has been a very profitable one for the growers. The early fruits did not do so well, but the late varieties brought in handsome returns. Grapes and pears proved the most profitable. Good prices were also realized for peaches. Cherries sold well, but the crop was short. Apricots were principally dried. The grape situation is worthy of special mention. Notwithstanding the new acreage that is coming into bearing throughout the State, and the consequent increase in yield, the Eastern markets appear to be able to take all the good Tokays shipped at remunerative prices. The demand seems to increase with the supply. Last year the growers had both late and early rains to contend with. This season the late rains damaged the cherries badly, but so far not a drop of rain have we had this fall, and in consequence all the late fruits have been harvested in good shape. So, as we said at the beginning, while individuals have met with losses more or less serious, in general the season of 1905 can be set down as a prosperous one for the fruit men of Vaca valley.

CANNERY SEASON CLOSED.—Dixon Tribune, Nov. 4: The tomato run at the cannery is rapidly drawing to a close and it is estimated that a conclusion will be arrived at about Tuesday. The institution has had a very successful run and this year it can be safely said that the hopes of the enterprising citizens who were instrumental in establishing the institution have been in part realized. A pack of nearly 60,000 cases has been made.

Sonoma.

CHERRIES IN BLOOM.—Petaluma Argus, Nov. 1: Out at the big fruit ranch of Henry Hammel of this city, located near Stony Point, there are five acres of Black Tartarian cherries in full bloom. The blossoms are perfect and the trees are heavy with the blossoms. Other trees in the orchard are also beginning to bloom. If the blossoms develop, the fruit, of course, will be killed by the frost and the blossoms will probably be ruined by rain before the fruit can develop.

CLOVERDALE WOOL SALE OVER.—Dispatch-Democrat, Nov. 3: The Cloverdale wool sale last Tuesday did not realize within 2 cents that paid at the Ukiah sale last week. Here the top-notch figure was 18½ cents, while at Cloverdale it was only 16½ cents. Most of the wool was sold, but the growers feel that a higher figure should have been paid. The amount of wool at Cloverdale was 116,427 pounds. Most of it was from southern Mendocino, some, however, being from northern Sonoma.

POULTRY ASSOCIATION OFFICERS.—Santa Rosa dispatch to Chronicle, Nov. 6: At a meeting of the Sonoma County Co-operative Poultry Association held at the rooms of the Board of Supervisors yesterday the following officers were elected: Charles Gillette, president; F. W. Wilson, vice-president; James Cahill, secretary; M. B. Mack, treasurer. The executive committee chosen is composed of Harry J. Barnett, W. Lowry, M. B. Mack, F. W. Wilson and C. Christiansen. The first three named were members of the former executive committee. The Association is in a flourishing condition, and embraces in its membership practically all of the poultry owners in the Bellevue and Todd districts and territory adjacent to Santa Rosa.

Stanislaus.

A NEW VARIETY OF BARLEY.—Oakdale Leader, Nov. 3: Robert Reid, a farmer residing north of Stanislaus river, will experiment with a new kind of barley for this locality the coming season. The new variety is known as Portugal barley and was successfully grown on the West Side, Merced county, by Bambauer Bros. last season. The kernels are much larger than those of ordinary barley and where the climate and soil are adapted to its growth it is claimed the yield is large. Although the past season was not a favorable one, Bambauer Bros. harvested 23 sacks per acre on their ranch. It is said to be a first-class brewing barley and will at all times command top prices. Mr. Reid purchased 25 sack sand will give ita thorough test on summer-fallowed land. It is claimed by some of our most successful grain growers that in the outcome of both wheat and barley much depends upon the seed sown, and from information gathered among leading farmers we believe more attention will be given in future to the selection of seed than has been in the past.

Sutter.

NEW CREAMERY.—Marysville Democrat, Nov. 2: A new creamery is to be established near Meridian. The necessary buildings are already being erected and they will be equipped with the most modern machinery and appliances. The promoters of the enterprise are D. L. W. Hoffman, Mark Girdner and J. L. Morehead, who are at present conducting dairies in that vicinity.

Ventura.

BIG CITRUS CROP.—Ventura dispatch to Chronicle, Nov. 2: The citrus crop promises to be from 10% to 15% greater than last year in this county, and the price also promises to be better, especially on oranges. The growers in several parts of the county have made extensive additions to their packing houses, notably at Santa Paula and Limonera. This year the orange crop in the Ojai will reach 75,000 boxes. Santa Paula will grow 125 carloads. The Fillmore section will have 200 cars and Piru and Camulos 25 cars. Of the lemons, there will be 350 cars from Santa Paula and Limonera, and 60 cars from Fillmore. Last year Limonera, where the biggest lemon orchard in the world is located, shipped 265 cars. Many new orange and lemon orchards have been put out during the past season.



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A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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Every one would like them to sell, and can just as well have them. We guarantee Security Poultry Food will make hens lay. Ask our dealer in your town. Try it.

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We know that if buyers would first write us and get our lantern book and know just what service Dietz lanterns give and how they are made, they would never buy any other kind. Everybody knows about the

"Clear, White Light of the DIETZ."

But we want them to know about the convenient side lever, how impossible it is for the oil pot to leak, how it is made without a suspicion of solder, how only the best class of material, glass, tin, wire, etc., is used in the making. There are a dozen things that ought to be considered in choosing. Then dealers could not persuade you to buy the ordinary lanterns on their shelves. There's a Dietz lantern dealer most everywhere. If you don't find one, write to us. Write anyhow for that free book.

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POULTRY OPPORTUNITIES. Telling you how to buy fine poultry location in Castro Valley, Alameda Co., only 21 miles from San Francisco. Send 10c for partial cost illustrated pamphlet mailed free. M. J. MADISON, Haywards, Cal.

SHORTHAND taught by mail; demand more than supply. Miss M. G. Barrett, 302 Montg'y St., S.F.

The Home Circle.

Seats of the Mighty.

Of all the chairs of church or state—
  Bench, woolsack, throne, or what you will—
'Tis written in the book of fate
  The high-chair is the highest still.

Lolled in his office chair, there sits
  The master of a thousand mills;
Men toil or rest as he permits;
  Men fall or prosper as he wills.

Perched on the polished bench, where strife
  Cries to condemn or pleads to save,
Sits one, and blots the light from life,
  Or nods another to the grave.

Squat in his place of power, behold
  The monarch of a mighty land!
And destinies are lightly told,
  Toyed in the hollow of his hand.

But over all and over each
  Another sits, who must be reckoned;
The eternal woman comes to teach
  The first of men he is but second.

Yet hardly is her reign begun
  Till she must learn as she has schooled;
For lo! there comes the helpless one
  And rules the ruler of the ruled.

For chairs of church, or seats of state—
  Bench, woolsack, throne, or what you will—
Are only relatively great:
  The high-chair is the highest still!

—St. Nicholas.

The College Girl Joke.

'Tis the joke of the humorous pages,
  Year in and year out, without change—
A college girl feebly engages
  In hopeless affray with a range;
She's pictured dismayed by the riddle
  Of dusting and sweeping a room,
Undone at the sight of a griddle,
  And utterly floored by a broom.

If a girl has the brains and the ardor
  To excavate roots in the Greek,
Will she quail at the roots of the larder,
  At commonplace carrot and leek?
Is a mind coming forth from the campus,
  Well versed in the knowledge of "pi,"
To be daunted by pastry and dampers?
  It's (pardon me) all in your eye!

A girl may be up in her Homer,
  Whose cooking is simply immense;
Believe me, a college diploma
  Has never destroyed common sense.
And the picture that's true will endow her
  With strength that will brook no defeat.
Triumphant in wisdom and power,
  A cooking stove prone at her feet.

—Washington Times.

The Man With the Scythe.

He watched the strong, athletic figure as it swung from side to side, with something like admiration in his lazy eyes.

"Jove!" he uttered. "The fellow does it in good form. After all, these American peasants—working people, I mean—are superior to our English. If that chap were on horseback now, in a hunting costume, or at a reception in a dress suit, it would be really difficult to tell his class. What a figure he would make on canvas! I believe I'll try it."

He left his easel, which had been placed in position for a study of a century-old oak, and went to the fence, raising two fingers as he did so to the young man, who was swinging toward him with the long, regular strokes of the mower.

But instead of dropping the scythe and coming forward with hand to forelock, as an English peasant would do, this fellow merely nodded toward the uncut swath ahead without breaking the regularity of the stroke.

De Masters frowned a little, then forgot his irritation in watching the lines of the figure as it swung nearer.

"Jove!" he muttered again. "An American sovereign of the soil! I'll put him in the foreground of the oak, with his scythe. They shall typify time and age and strength."

His fingers had brought up a coin from his pocket—now, almost unconsciously, the coin was permitted to fall back, and a larger one was brought up in its place. It seemed more fitting. The smaller one would have done for England.

As the fingers came from the pocket with the coin conspicuously in sight there was a last long s-s-s-swish of the scythe, and the young man was standing by the fence, wiping his face with his handkerchief.

"Now, what is it, sir?" he asked pleasantly. "I did not want to stop back there on account of losing so much time. I am tasking myself to finish this field to-day, and it's going to be sharp work. You see there are a lot of young trees in the field, and we don't like to put in a machine for fear of bruising them; so I'm doing it in the old-fashioned way. You're the English artist, I take it, who is stopping at the cottage for a few days?"

"Yes," quickly, "and that is what I want you for, to pose with your scythe for a study of the old oak."

The coin was raised temptingly, but though the mower was looking straight at him, he did not appear to see it. There was no change in the expression of his eyes, no added color to his face.

De Masters looked perplexed. Over in the old country a peasant would have seen the first motion toward the pocket, and his hand would have been in readiness for whatever might be forthcoming.

"I shall not want you more than two hours," he said, suggestively, "and this—"

"I'm sorry," the young man interrupted quietly, "but the fine weather isn't likely to last, and we must give every minute to the haying. I should like to oblige you, and if you think it worth while to put the picture off until I have leisure, I shall be glad to do what I can. You will excuse me now."

"Well, anyway, take this," began De Masters, "and I will—"

But the sharp swish of the scythe was now moving back across the field. De Masters balanced the coin doubtfully upon his fingers, thinking to leave it on the fence, but thinking also that the dull eye might not see it and that the coin would fall off and be lost, finally let it slip back into his pocket.

But the man and his scythe had taken hold of his fancy, and he moved the easel to another part of the farm where there was a big rock with a brook twisting around it and some alders leaning over.

He would let the oak go for a while. There was no hurry. His invitation was unlimited. Perhaps the mower would have leisure after the hay was made, and there was another reason why he was willing to stay on.

Kate Reumer was on the veranda when he returned, and the look of approval in her eyes as they rested upon him brought an unusual light into his own.

On the other hand, there was something in the thoughtful, unaffected manner of the country girl that appealed to De Masters as had none of the beauties he had met on his travels. He placed his easel and unfinished canvas on the veranda, and then dropped down to one of the steps.

"No, you needn't look at the picture yet," he said, as her gaze went toward the canvas; "it is only crude outlines, like the limbs showing through a fog. I shall put in the details and finish tomorrow."

"You didn't try the oak, then?"

"No, I haven't yet; I have a new idea for it." He was silent for some moments, then added with a laugh. "Your peasants—working people, I mean—are different from ours on the other side. Over there I need only to raise my hand—with money in it, of course—and they will come to me at a run. They are always ready to earn two or three honest pennies where their regular work yields but one."

She looked at him inquiringly.

"I tried the same thing here," he went on, "but the man seemed too dull or too fond of work. You see, it was a man with a scythe, and I wanted him with the oak."

"Did you offer him money?"

"Of course," simply. "I could not expect him to come otherwise. But in spite of all my efforts, I couldn't make him see the money. And he talked to me just as I am talking to you—on terms of perfect equality. He didn't even touch his hat."

A half smile was parting her lips.

"Who was it? Potter, or Smith, or Cibber?" she asked.

"I don't know, only that he was a very handsome young fellow, with collar open and a very wide-brimmed hat."

The half smile broke into a rippling laugh, instantly checked.

"I beg your pardon," she said, "but that was Less—Lester Longstreet, I mean."

"Anything remarkable about him?" curiously.

"Why, no, I don't know that there is, not more than about a good many of our young peasants in this country who are working their way up. But Lester is a very fine young man. He was left an orphan at eight, and has made every bit of his way since then. He has worked for papa three summers to help pay his college expenses."

"College?" incredulously.

"Yes. He graduated from Yale in June, and is now earning money to pay for a post-graduate course in medicine and chemistry. Then he is going through a regular medical college, and afterward will study a year in your country. He is only twenty-one now, so there is plenty of time. When he finishes his study, I expect to marry him."

Her eyes were shining a little now, and she looked at him frankly, as though half expecting some word of congratulation, perhaps of commendation for the young mower. His face was averted for an instant, then it turned pale, but he was equally frank.

"I thank you for your confidence," he said simply. "I came here with an idea of staying for three days and have been six already, and I should have to remain till after haying to get the picture. I do not believe it would be wise for me to stay so long. I will say good-by to you here."—Illustrated Bits.

Teaching the Calf to Drink.

The time of year recalls the dear, dead days beyond recall when the farmer's boy taught the calf to drink from a pail. The Britt (Iowa) Tribune refers feelingly to these strenuous moments in the life of our agricultural youth—moments that teach patience and kindly dealing with the dumb animals, for the weaned calf is full of the infinite and eternal energy. It desires its sustenance mightily, but it desires it in the way Nature has taught it to obtain sustenance. The sight of the pail seems to fill the calf's mind with forebodings. The calf desires to look up when it drinks. The farmer's son desires it to look downward into the pail. The farmer's child must hold the pail between his feet with his hands, using two other hands to hold firmly the cow's child to it's milk. When the calf humps its back and tries to jump, it is necessary to hold it down with two more hands. When it breathes hard into the pail and blows the milk all out, you must twist its tail with two more hands. Just before a calf bunts it wiggles its tail. At the premonitory wiggle the tail must be held also, meantime keeping the calf's head directed into the pail. The Britt Tribune says:

"Don't get excited; stand perfectly still, inspiring the calf to confidence by your coolness and sang froid. There is nothing equal to sang froid in the initial lesson, and without this attribute the pedagogue is sadly hampered. There are other requisites, one of the chief ones being that the teacher must know more to begin with than the calf. By following these directions closely a calf can be induced to fill itself with invigorating, life-prolonging milk in a very few lessons, so that it will run its nose clear to the bottom of the pail the first bunt."

When you feed a calf it is better to be alone. Especially is it necessary not to allow the women of the homestead to be present. The proceeding sometimes looks like cruelty, and they have other methods of calf-feeding that seem more feasible to them, and they do not hesitate to voice them at critical moments, thus shaking your confidence in yourself and incidentally shaking the calf's already small stock of confidence in you. It is an art—that of calf-feeding—that has not been sufficiently treated in the bulletins of the Agricultural Department.—Minneapolis Journal.

Lazy Lungs.

So much stress is laid in these days upon the value of fresh air that it is impossible for any one to miss the lesson. Good ventilation is taught in all our schools, if it is not always practiced; and treatment by the open-air method is becoming more and more advocated for certain diseases, especially tuberculosis.

In all this spread of knowledge and good sense it is unfortunately very possible to lose sight of the real issue. It is no exaggeration to say that many a one who can glibly patter off the number of cubic feet of air necessary for each one to breathe rarely draws a full breath. Fresh air is a free gift, but it is like most of the gifts of heaven, in that we must do our share of work to benefit by it. No one would expect to have a good fire just because a pair of bellows hung on a nail by the chimney, but this is exactly what many people expect of their lungs, which are really only the bellows given us by which to keep the fire of life burning bright and clear within us.

It is not too much to assert that lungs properly used in a comparatively close room will do more good than lazy lungs in an open field. This trick of lazy lungs is a habit, like any other, and may be overcome by persistent effort. Many persons, for example, are afflicted with a nervous habit of holding the breath unconsciously. These are the people who, in spite of plenty of time spent out of doors, yet catch cold easily, digest poorly, and are always more or less "under the weather" physically. They are often much benefited by a course of active exercise, because it is impossible to exercise vigorously without drawing some good deep breaths.

Many other persons—and they constitute the great majority of mankind—breathe only with the upper part of the lungs, and although they may breathe regularly, do not draw in sufficient air at a breath to fill all the lung cells.

When once the pernicious habit of poor, shallow breathing has been broken up, the health undergoes such marked improvement, there is such brightening of the spirits and improvement of the looks, that the luxury of deep breathing is not likely to be readily foregone.

A good way to start the new habit is to take deliberately a few minutes at stated intervals and devote them to proper breathing. If this is done systematically, the reformer will find himself unconsciously breathing more and more, until very soon he is obeying nature and really breathing to live. In this way we must all work for a living if we want a good one.

Besides the gain to the general health which comes from the habit of deep breathing, there is created a reserve strength and preparedness which is often of great service in warding off acute pulmonary diseases.—Youth's Companion.

Medicines in Common Vegetables.

Turnips, onions, cabbage, cauliflower, watercress and horseradish contain sulphur.

Potato, salts of potash.

French beans and lentils give iron.

Watercress, oil, iodine, iron, phosphate and other salts.

Cabbage, cauliflower and spinach are beneficial to enemic people.

Tomatoes stimulate the healthy action of the liver.

Asparagus benefits the kidneys.

Celery for rheumatism and neuralgia.

It is claimed the carrot forms blood and beautifies the skin.

Beets and turnips purify the blood and improve the appetite.

Lettuce for tired nerves.

Parsley, mustard, cowslip, horseradish, dock, dandelion and beet tops clear the blood, regulate the system and remove that tired feeling so peculiar to spring.

Progress.

Whate'er the dismal doubters say,
We're breaking from the ancient sway
Of hate and superstition gray
And creeds that fetter.
From year to year and day to day
The world grows better.

Humanity their steps have bent
Up the long, arduous ascent,
The highway of enlightenment,
With faces dawnward.
Still up that path, with high intent,
The race moves onward.

Up through the long, dark night of Time,
From out the shadowed past we climb,
Above the ignorance and crime—
The gyves that bound us—
Unto an eminence sublime,
The sunlight 'round us.

—J. A. Edgerton.

Old Times and New.

"No times like the old times!" We sing
it night an' day;
But the new times—by the grace o' God
—are happy on the way!
There's still the same bright sunshine—
the stars are bright above,
And all the world is blossoming with lilies
white of love!

"No times like the old times!" That's
jest the way we sing!
But don't we reap in harvest fields the
promise of the spring?
Are not the rivers rippling the same glad
way to sea,
While the winds that wave the branches
blow blossoms far and free?

"No times like the old times!" But these
are still the times
When Love weaves all earth's roses in the
music of glad rimes!
And all the birds are singing in the
splendor of the light;
And all the bells are ringing, and all the
world is bright!

—Atlanta Constitution.

How to Open a Lobster.

Wipe the shell with a wet cloth; break off the large claws, separate the tail from the body and the body from the shell, leaving the lady, or stomach, in the shell; then remove the small claws; save the green liver and coral; crush the tail by pressing the sides together, then pull it open on the under side and take the meat out in one piece; draw back the flesh on the upper end of the meat and remove the intestinal canal, which runs the entire length (this is sometimes black and sometimes the color of the meat); break off all the gills on the body before picking the meat from the joints, as they are liable to drop off with the meat and are too woolly to be palatable. The gills, stomach and intestines are the only parts not eaten. Break the body in the middle and pick the meat from the joints, being careful not to take any bones. When the shell of the large claws is thin, cut off a strip down the sharp edge and remove the meat whole, or break them by hammering on the edge. Never pound in the middle, as that crushes the meat. If the lobster shell is to be used for serving the meat, cut down the under side of the tail with a sharp knife and remove the meat without breaking the outside of the shell; trim the inside and clean the shell. The body shell may be cleaned, split in halves and trimmed with a sharp scissors into the shape of a clam shell.

Cheese Straws.

Put two ounces of flour into a basin with a good seasoning of salt and cayenne, add to these two ounces of grated Parmesan cheese.

When these are mixed together rub into them lightly two ounces of butter, then mix the whole to a stiff paste with the beaten yolk of an egg and a little water if necessary.

Roll out the pastry till it is an eighth of an inch thick.

Then cut it into straws about an eighth of an inch wide and three or four inches long. Lay these on a baking tin (which need not be greased), and bake them in a slow oven till they are a delicate brown. These straws require very gentle handling, as they break so easily.

Domestic Hints.

Prune Souffle.—Soak three-quarters of a pound of prunes in water to cover them over night, cook until soft in the water they were soaked in, drain, take out the stones and press through a puree sieve; add half a cup of granulated sugar and the whites of three eggs beaten to a stiff froth; bake in a pudding dish twenty minutes; serve in the dish in which it is baked, cold, with cream.

Broiled Veal Steak.—Butter the gridiron well and broil the steak over a hot fire; when quite brown on both sides, take out and put in a shallow pan; into the pan put a little white stock and about two ounces of butter; set this in the oven for five minutes, take out the veal and to the stock in the pan add a gill of tomato sauce with a bit of horseradish, and pour over the veal before serving.

Fruit Salad.—Peel and shred a pineapple; sluice four bananas and four seeded oranges; place a pineapple crown in center of dish. Arrange layers of fruit about, distributing hulled and washed berries cut lengthwise; impale a few whole unhulled berries on the spines of the crown, placing spines in each corner; sprinkle over all the juice of one lemon and five tablespoons of fine sugar.

Strawberry Sponge.—Have a quart of nice fresh berries and mash them with one cupful powdered sugar, if that seems to be enough; dissolve one ounce of gelatine in a pint of water and stir in with the strawberries; pour through a sieve into a bowl and set this bowl in a dish filled with ice; beat for five minutes, then add the beaten whites of five eggs and beat again till it is thick; pour into small molds and set on ice; when unmolding put a border of whipped cream around them.

Soup of Green Peas. — Put one quart of green peas over the fire in three quarts of boiling water with three French carrots, a small turnip cut into dice and a small white onion chopped; cover tightly and let the vegetables cook until tender; rub two ounces of butter with a small tablespoonful of flour, add a little of the soup to this to thin it, and then stir all together; add an even tablespoonful of finely minced parsley, an even teaspoonful of sugar, and salt and pepper to taste; let it come to a boil and then serve.

Small Fancy Cakes.—Cream three-fourths cup butter, add two cups sugar, beat till light, add well-beaten yolks four eggs, one cup milk and three and a half cups pastry flour mixed with three and a half level teaspoons baking powder; mix well, then beat in the stiffly beaten whites; divide the dough in three parts; bake two parts on long, shallow pans; to the remaining dough add one teaspoon mixed mace and cinnamon, two teaspoons each wine and molasses and two cups mixed fruit; bake in small fancy tins in moderate oven and frost with plain frosting; cut the plain cake in small squares, crescents, diamonds, cards or dominoes; frost and ornament as the shape or your fancy suggests.

Pretty Peaches.—Serve as a dessert fare, large peaches, one to each person, laid upon a vine leaf in the middle of a glass plate, and accompanied by a fruit knife, fruit napkin and glass nappie containing sherry syrup. The peaches are to be pared, cut in delicate long slices, and either dipped into the syrup as eaten, or dropped in together, and eaten afterward. To make the sherry syrup, put a pound of best lump sugar and one dozen peach kernels in a glass jar, cover an inch deep with good sherry and set in the sun, stirring occasionally until the sugar dissolves.

Cabrage Salad.—The following rule for cabbage salad is a good old "standby" and excellent on the country supper table: Chop a head of cabbage very fine, using the regular meat chopper, which will cut it up into fine pieces of equal size. Soak the cabbage two hours in salt and water, then drain. Beat thoroughly four eggs, add one pint of vinegar and half a cup of butter. Let it come to the boiling point, stirring it carefully to prevent the eggs from curdling. Then add a scant tablespoonful of pepper, a heaping one of mustard and sugar to taste. Some housewives do not like as much sugar as others.

Hints to Housekeepers.

Brass work can be kept beautifully bright by occasionally rubbing with salt and vinegar.

A common screw with a stout string tied around the top makes a fair substitute for a corkscrew.

Flour thrown upon burning oil will instantly extinguish it, while water only spreads the flames.

Sprinkle salt on the carpet in several places. No bother from so much dust and brightens up the carpet.

Tea should be kept in either a tin or glass vessel which has a lid, as it is necessary to keep it tightly covered.

The tender leaves and small ends of stalks of celery should never be thrown away. If dried they are found excellent for flavoring soups.

Tin boxes in which crackers come are very useful in which to pack sandwiches for picnics. If packed with care and the covers securely adjusted and set in the icebox they will keep fresh and moist.

It is worth knowing for the fly days that a few drops of sassafras oil scattered about the house will keep the flies away as if by magic. This is said to be the secret of the flylessness of drug stores, where the soda fountain would otherwise attract flies by the thousand.

To clean a soiled white straw hat dissolve two tablespoonfuls of oxalic acid in a pint of warm water and then carefully scrub the hat with an old nail or tooth brush. As the scrubbing proceeds wipe off the discolored water with a cloth, so that it has no chance to soak into the straw. If very dirty go over the hat a second time. Put in the sun to dry.

Table linen, in order to bring out the bright gloss that makes it attractive, should be dampened considerably. Sprinkle the tablecloth well, being sure that the selvage ends or hemstitched borders are thoroughly damp. Roll up tightly. The napkins and doilies should be arranged alternately one upon the other, first a dry napkin, then one which has been wrung out of warm water, then a dry napkin, and so on. Then roll tightly. All linen should be ironed very dry. The least bit of water starch in tablecloths will greatly improve them, and they will not muss so easily.



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The Markets.

San Francisco Produce Report.

San Francisco, Nov. 8, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 90⅛@ 88½	91⅝@ 89¼
Thursday	89⅝@ 88⅝	90 @ 89⅝
Friday	89⅝@ 88⅝	90⅛@ 89⅝
Saturday	88⅞@ 88⅝	89⅝@ 89⅜
Monday	88⅜@ 88	89½@ 88¾
Tuesday	—@—	—@—

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	46⅛@45¾	46⅝@46⅛
Thursday	46 @45½	46½@46
Friday	46⅛@45¾	46⅝@46⅛
Saturday	46⅛@45¾	46⅝@46¼
Monday	46¼@45¾	46⅜@46¼
Tuesday	—@—	—@—

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 40⅛@1 39	$1 45 @1 44
Thursday	1 41⅛@1 41⅜	$1 46⅛@1 46⅜
Friday	1 42½@1 42	$1 47¼ @1 47
Saturday	1 41⅜@1 41⅜	$1 46¼@1 46
Monday	1 40⅜@1 40½	$1 45⅝@1 45¼
Tuesday	—@—	$1 45¼@1 44⅞

Wheat.

The general tone of the spot wheat market for the current week has been firm, though there has been a little easier demand toward the close of the week. Northern cargoes continue to advance in price, making it difficult to land any wheat from Puget Sound in this port at less than $1.45. Trading in December option has been very light and at higher values, the price having remained close to $1.45 during the entire week. An official estimate of this year's Argentine wheat crop places it at 184,000,000 bushels, as compared with 154,000,000 bushels for last year. This is having a tendency to equalize to some extent the bullish tendency caused by Russia's transportation difficulties. If the estimates of recognized European authorities on the extent of the world's shipments for the past week are made good, cables will demonstrate that Europe is practically dependent upon North America for her supply of breadstuffs this year. Leading foreign buyers express the same surprise as the bull element in this country. Manitoba owners, holding the key to the situation, as they do, are not more alive to their opportunities. An accident to the wheat crop of Argentine would set the grain trade of the world aflame, and undoubtedly make a high level of prices the world over until new crop elsewhere had relieved the situation. In any event, the Argentine wheat cannot be reckoned on by European consumers before next spring, thus leaving importing countries to be supplied almost entirely from European and American sources.

California Milling	$1 45	@1 50
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 40	@1 42½
Northern Bluestem	1 45	@1 47½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.45⅝@1.45.

Flour.

The flour market has been holding steady at quotations and with but little probability of any further reduction in price, as the export demand for Central America and the Orient shows signs of improving. Locally, the high price of Northern wheat cargoes and the fact that California is largely dependent on Oregon and Washington for wheat supplies this year have had a tendency toward firming the market. Conflicting reports from foreign and Eastern wheat centers make it difficult to judge of the true outlook for the future. Prominent traders in Chicago state that the United Kingdom and a part of Europe will be dependent on North America for bread supplies this year, but at the rate at which Russia continues to ship wheat this seems problematical. Reports of the big shortage of the Japanese rice crop have been confirmed and a big export demand from that country is expected to develop shortly.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The spot market continues firm on choice feed, owing to short supplies of that grade. Receipts have been light, as usual, and have been eagerly taken up at the figures quoted. The above situation applies, however, only to the grade mentioned, as there is a market of an entirely different character for low-grade barley. There is plenty of this barley offering and meeting with very slow sales at the quoted price of $1.15 to $1.18. December option sold at $1.22½ one day last week, and for the most part remained in the neighborhood of $1.22. Buyers are at a loss to know what has become of all the barley and are a little chary in buying futures, fearing from the present trend of the market that there must be concentrated holdings somewhere on the long side which may be unloaded later.

Feed, No. 1 good to choice spot	$1 20	@1 22½
Feed, fair to good	1 15	@1 18
Chevalier, No. 1 to choice	1 30	@1 35
Chevalier, common to fair	1 15	@1 25

Oats.

As predicted in last report, the Northern markets have advanced still further. Puget Sound white oats are selling readily on 'Change at quotations. Portland whites are also higher and some holders are asking as high as $1.50, with $1.45 as a trading basis. Cheap red oats for feed are rather scarce and seem to be in good demand. On black oats and choice reds for seed varieties the top quotations are readily received; but there is little trading being done and there seems to be little choice stock to be had in either of these varieties. A good rain would probably create quite a demand for seed oats, and it is quite probable that the market will advance quite materially in the near future.

White oats	$1 42½	@1 45
Black oats	—	@1 75
Red, choice new	1 35	@1 60
Red, fair	1 20	@1 30

Corn

The corn market is quiet, although old Western corn is rather scarce at the present time and is quoted on a basis of $1.35 per cental, sacked and delivered here. The new crop can, however, be bought at a lower figure. White corn is selling slowly at $1.35. Several lots of new small round variety have shown up this week, but no advance on above quotations has been obtained.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 37½	@1 40
Small Yellow	1 50	@1 60

Rye.

Rye is in small supply, but entirely sufficient to cover the needs of the trade. The demand is very quiet, but prices are being maintained at former quotations. A choice lot will bring top quotations, but most of the new offering is Utah rye, which is not of high quality.

Good to choice	$1 45	@1 50

Buckwheat.

Light arrivals of new crop buckwheat have been in evidence during the current week and a price is now able to be quoted. Seed varieties would bring an advance over these quotations.

Good to choice	1 75	@1 90

Beans

The market is generally steady with prospects of better prices being realized on large whites due to an advance in the Michigan bean market. Small whites have declined owing to heavy arrivals. Bayos and blackeyes continue strong and even show slight advances in price. Pinks are very weak and are still arriving freely, so that there seems a prospect of their going still lower before the market shows any improvement. Limas are doing better at primary points and $3.60 is asked on the street.

Small White, good to choice	$2 75	@3 00
Large White	2 00	@2 40
Pinks	1 75	@1 90
Pinks, damaged	1 00	@1 40
Bayos, good to choice	—	@3 60
Red Kidneys	3 00	@3 50
Reds	3 00	@3 25
Limas, good to choice	—	@3 50
Black-eye Beans	4 50	@4 60

Dried Peas.

There is little change in the local market for dried peas, but reports would indicate that the Eastern market is advancing. Prices here are being well maintained and it does not seem possible that any decline could well take place in the face of the advancing Eastern market. Some prominent buyers here are, however, holding off, saying that they expect to be able to buy Niles peas at $1.50 per cental before the close of the year. Humboldt peas are coming into the market and have for the most part kept it well supplied, though there is no accumulation of stocks at the prices quoted. Very few Salinas peas have been received in the local market for the reason that they were nearly all marketed in the South at a better figure than local buyers were able to offer. In the South there is a considerable demand for the peas for use as fertilizer.

Green Peas, California	$2 10	@2 35
Niles	1 75	@2 00

Hops.

The market is still weak and hops are readily offered by the majority of holders at the prevailing price of 7c to 10c on the Pacific coast. Dealers are, however, buying in very moderate quantities at such figures, believing from the present trend of the market that lower prices are bound to be reached. This year there is less activity in the local market than there has ever been before at this season. The main cause for this partial stagnation is that carefully prepared estimates of crops from all parts of the world indicate that there is an enormous crop, amounting, some say, to an overproduction. Brewers are fully aware of this condition and are disinclined to anticipate their future wants very liberally when there seems a prospect of lower prices being reached. Some buying has been done in Sonoma and Mendocino counties at 8c to 10c on very small margins and for the most part for the purpose of covering deliveries on sales previously made.

Good to choice 1905 crop	7	@ 10

Wool.

Locally the situation remains unchanged so far as fall wools are concerned. There is practically no Eastern demand for defective wools and jobbers at this point claim that at present prices it is impossible for them to engage any of the fall clip. A Boston wool merchant sums up the situation as follows: "The wool growers in the West look for a banner year in 1906, and, consequently, feel that they can do materially better, from a money standpoint, by holding their wools, rather than transferring them to Eastern dealers at prices which the latter are now willing to pay. The attitude of these growers who think there is no limit to possibilities in prices is counterbalanced by the contention of more conservative sheepmen, that further advances would put prices on a basis with Australian wools landed here and would therefore bring them into active competition with territory wools. With a few exceptions there are no larger lines of territory wools on the market. One lot of Wyoming in original bags, amounting to 1,500,000 pounds, is held, however, by a leading Summer-street operator. Montana wools are rapidly disappearing, some dealers being already cleaned out. Worsted mills have taken some in the original bags at 27c to 29½c. California, Texas and Nevada wools are in a little better demand.

FALL.

Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

The situation in the local hay market is practically unchanged. Everything now depends on the weather, and as the dry weather continues, there is a natural tendency toward firmness. However, no particular anxiety is felt and prices remain unchanged. Some dealers report that stocks in San Francisco are heavier than they were a year ago. Arrivals show a slight increase owing to an easing up in the car shortage. Barley and oat hay is now out of the market.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The market continues steady on all varieties of millstuffs except cracked corn and corn meal, which, as was to be expected, have weakened in sympathy with the weakness in the corn situation. Bran and middlings are unchanged, although supplies are rather limited. Rolled barley is still firmly held at $26 per ton, and, owing to a scarcity of good feed barley and an advancing market for that grain, any decline in the near future is extremely improbable.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	23 50	@ 24 00
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	26 00	@ 26 50
Cornmeal	30 50	@ 31 00
Cracked Corn	31 00	@ —
Oilcake Meal	—	@ —
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

Seeds are in fairly good supply in the local market, and, though there is rather a quiet demand at present, appearing quotations are being maintained. It is expected that a good rain will produce a more active market.

Alfalfa	$13 00	@14 00
Flax	3 25	@ 3 50
Mustard, Yellow	3 25	@ 3 50
Mustard, Trieste	4 25	@ 4 50
	Per lb.	
Canary	6½	@—
Rape	2½	@ 3
Hemp	3½	@ 4
Timothy	5	@ 5½

Honey.

The honey situation remains unchanged since the last report. There is a good deal offering, but no business can be done at shipping points at 4½ cents for water white, this being the figure that is generally asked by apiarists. Dealers say that this price will have to be shaded at least ¼ cent in order to induce any speculation. White comb honey is being firmly held at 9 cents choice basis.

Extracted, Water White	4¾	@ 5
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2½	@ 3
White Comb, 1-frames	8	@ 9
Amber Comb	6	@ 7

Beeswax.

Stocks on hand are adequate to supply the demand, and prices are being well maintained.

Good to choice, light ₱ lb	25	@ 26
Dark	24	@ 25

Live Stock and Meats.

The local meat market is well supplied with all varieties, and prices on all kinds of dressed meat are ruling steadily. Small veal is a shade firmer in price, having advanced to the point at which it was held before the market became oversupplied. Hogs are also somewhat firmer in price and in good demand.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4¾	@ 5½
Beef, 2nd quality	4	@ 4½
Beef, 3rd quality	3	@ 4
Mutton—ewes, 8@8½c; wethers	8½	@ 9½
Hogs, hard grain, 150 to 250 lbs	5¾	@—
Hogs, large, hard, over 250 pounds	5½	@—
Hogs, small, fat, under 150 lbs	5¾	@—
Veal, large, ₱ lb	5	@ 6
Veal, small, ₱ lb	6	@ 8
Lamb, spring, ₱ lb	9	@10

Hides, Skins and Tallow.

The hide situation continues as heretofore, with extremely high prices. Advices from Chicago indicate that notwithstanding the deterioration in quality, prices will be held as heretofore.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½ @—	10½ @—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½ @—	10½ @—
Stags	7 @ 8	7 @—
Wet Salted Kip	11½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		2½@3

Bags and Bagging.

The season for bags and bagging is now naturally closed so far as any active demand for bags in large quantities is concerned. The bean bag demand is over and was one of the largest that local dealers in those articles have ever seen. With the exception of the regular volume of small business, there is no particular feature to the market. Prices are, however, being well maintained.

Bean Bags	6	6½@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2		7½@7⅝
Fruit Sacks, jute, as to quality		6½@7½
Grain Bags, Calcutta, 22x36, spot		7½@7¾
Wool Sacks, 4-lb		33 @ 34
Wool Sacks, 3½ lb		30 @ 31

Poultry.

Heavy receipts of Eastern poultry have caused an easier feeling and only fancy fat and large poultry is moving off satisfactorily. Poor grades and small scrubby stock require an effort to force a sale. Turkeys are in active demand at a decided advance over last week's quotations, provided the stock shows up well fed and prime.

Turkeys, choice Young, ₱ lb	$ 23	@ 25
Turkeys, live gobblers, ₱ lb	23	@ 25
Turkeys, live hens ₱ lb	23	@ 25
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	6 00	@ 7 00
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 00	@ 6 00
Fryers	4 00	@ 4 50
Broilers, large	3 00	@ 3 50
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	4 00	@ 5 00
Ducks, young, ₱ dozen	4 50	@ 6 00
Geese, ₱ pair	1 75	@ 2 00
Goslings, ₱ pair	2 00	@ 2 25
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	1 75	@ 2 00

Butter.

The market is steady and a shade firmer

than at last week's review. The high price of extras and firsts is causing a considerable movement of the intermediate grades and storage stocks.

Creamery, extras, ℔ lb	27	@28
Creamery, firsts	—	@26¼
Creamery, seconds	24	@25
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	24	@25
Mixed Store	—	@20

Cheese.

The market continues steady with a good request for fancy California and Young Americas. Other grades move slowly at appearing quotations.

California, fancy flat, new	11½	@13½
California, good to choice	—	@12½
California, fair to good	9	@11
California, "Young Americas"	12	@14
Eastern, new	15	@16

Eggs.

The egg market continues to advance and California select stock is now quoted at 50c per dozen for the first grade. The rapid advance in the price of selected stock has had the effect of creating quite a demand for California store and Eastern eggs.

California, select, large, white and fresh	48	@50
California, select, irregular color & size	—	@46
California, good to choice store	25	@31
Eastern firsts	23	@26
Eastern seconds	20	@21

Potatoes.

Under the influence of a strong shipping demand, California potatoes have advanced until the market is now in a firmer condition than it has been at any time this season. The cause of this sudden demand from outside points is that Colorado, Nebraska and other States which have always been depended upon to supply the potatoes for the Southern market are very short this year. The shipping is, of course, mainly for the cheaper varieties, but a somewhat improved local demand and a sympathetic feeling have caused a slight advance and a stronger market in Salinas and Burbanks.

Cal. Early Rose, ℔ cental	—	@	—
River Burbanks, ℔ cental	55	@	75
Salinas Burbanks	1 00	@	1 35
Chile Garnet, ℔ cental	—	@	—
Oregon Burbanks	1 10	@	1 15
Tomales	80	@	90
Sweet Potatoes	1 40	@	1 60

Vegetables.

The firm feeling which has been existing in the vegetable market for some time past is still noticeable. Supplies of all kinds of vegetables are now coming into the market in rather limited quantities, and prices on most varieties are somewhat firmer. Lima beans are scarce and higher. String beans are also somewhat firmer in price, and cabbage and peppers have advanced. Artichokes are plentiful, and are selling at 15c to 60c per dozen, according to size and quality.

Beans, Lima, ℔ lb	5	@	6
Beans, String, ℔ lb	6	@	7
Cabbage, choice garden, ℔ 100 lbs	65	@	75
Corn, Green, ℔ crate	—	@	—
Egg Plant, ℔ box	—	@	85
Garlic, ℔ lb	—	@	6
Onions, New Yellow Danvers, ℔ ctl	85	@	1 10
Onions, Australian Brown, ℔ ctl	1 10	@	1 25
Peas, Green, ℔ lb	5	@	7
Peppers, Bell, ℔ box	50	@	75
Peppers, Green, ℔ box	25	@	50
Tomatoes, ℔ box or crate	35	@	75
Artichokes, ℔ doz	15	@	60

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Deciduous fruits, with the exception of apples, are now becoming scarce. Apples are plentiful, but the price is being well maintained, as it is expected that the shipping demand which has developed for Eastern points will have a tendency to reduce supplies later in the season. Grapes are a shade weaker, and berries are steady. Figs are scarce and higher in price.

Apples, choice to select, ℔ 50-lb box	75	@	1 25
Apples, good to choice, ℔ 50-lb. box	50	@	75
Apples, fair to good, ℔ 40-lb box	25	@	50
Cantaloupes, ℔ box	—	@	—
Figs, ℔ one layer	—	@	—
Figs, ℔ two layer	85	@	1 00
Grapes, Tokay, large box	1 00	@	1 50
Grapes, Tokay, ℔ crate	75	@	85
Grapes, Muscat, large box	1 25	@	1 50
Grapes, Muscat, ℔ crate	75	@	85
Grapes, Black, large box	1 00	@	1 50
Grapes, Black, ℔ crate	75	@	85
Huckleberries, ℔ lb	7	@	9
Plums, Late Coes Red, ℔ crate	60	@	85
Raspberries, ℔ chest	5 50	@	7 00
Strawberries, Longworth, ℔ chest	—	@	10 00
Strawberries, large var., ℔ chest	—	@	5 00
Strawberries, Santa Clara, ℔ chest	7 00	@	8 00
Whortleberries, ℔ lb	9	@	10

Dried Fruits.

The dried fruit market is steady in all varieties, even prunes showing up well as compared with former years. Dealers are pretty well stocked up with prunes at the present writing, so the movement of stocks from primary points is not heavy. Stocks remaining in first hands are, however, very light and are being held firmly at the quoted price of 7½c, choice basis. The principal feature of the market is the rapid advance in the price of apples. As the season advances it becomes more apparent that there was a great shortage in the leading Eastern apple growing sections, and that the quantity of fruit dried in those sections was considerably under the average this year. The apple crop on the Pacific coast was, on the other hand, fully normal, and in some districts heavier than usual, so that it is extremely probable that a large part of the coast crop will be marketed in the East, and at a figure higher than the present quoted price of 8c, choice basis.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	—	@	7¾
Apples, extra choice to fancy, 50-lb boxes	8	@	9
Apricots, Royal, good to choice, ℔ lb	6½	@	7
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box, 1-lb cartons	5½	@	6½
Nectarines, White and Stanwick, ℔ lb	7	@	7½
Nectarines, red, ℔ lb	—	@	6
Peaches, unpeeled, good to choice	7	@	7½
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ℔ lb	7	@	7½
Pears, choice to fancy	8	@	10
Plums, Black, pitted	5	@	6
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¼@4¾c; 50-60s, 3¾@4c; 60-70s, 3¼@3½c; 70-80s, 2¾@3c; 80-90s, 2¼@2½c; 90-100s, 2@2¼c; small, 1¾@2c.

COMMON SUN-DRIED.

Apples, sliced	3	@	3½
Apples, quartered	3½	@	4
Figs, White, in bulk	2	@	2½
Figs, Black	2	@	2½

Raisins.

The raisin situation remains virtually unchanged as to prices, and as to trading there seems to be a situation almost bordering on stagnation so far as the Growers' Association is concerned. They are vehement in their declaration that since buyers were not disposed to buy heavily enough to admit of the confirmation of the reduction in price made two weeks ago, prices on their goods will remain unchanged, though business promises to come to a standstill. Buyers here are not disposed to pay the Association price for raisins when outside raisins can be bought for 1c less than the Association is holding for. Eastern jobbers are complaining that when the tentative reduction was made their notification was worded in a manner to make it misleading, and that had they known that the lower price would be withdrawn unless confirmed on a certain date they would have anticipated their needs more liberally.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40	@	—
London Layers, 3-crown, 20-lb box	1 50	@	—
Fancy Clusters, 4-crown, 20-lb box	2 00	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	3 00	@	—
2-Crown Standard loose Muscatel	5¾	@	—c
3-Crown Standard	6	@	—c
4-Crown Standard	6¼	@	—c
Seedless Thompsons, 50-lb boxes	6½	@	—c
Seedless Sultanas	5	@	—c
Fancy 16-oz. Seeded	8¼	@	—c
Choice, 16-oz. Seeded	8		c
Fancy, 12-oz. Seeded	6¾		c
Choice, 12-oz. Seeded	6⅜		c

Citrus Fruits.

Receipts of new crop navels have been free, and they are beginning to show up somewhat better as to quality, being riper and larger than the first part of the crop received in this market. They are weaker in price on account of the heavy receipts. There are no more Valencias in the market. Lemons and limes are steady and grape fruit weak.

Oranges, Navels, new crop	2 25	@	3 00
Oranges, Valencias, ℔ box	——	@	——
Lemons, California, fancy, ℔ box	2 50	@	3 25
Lemons, California, good to choice	1 75	@	2 50
Lemons, California, fair to good	1 00	@	1 25
Grape Fruit, ℔ box	2 50	@	3 00
Limes, ℔ box	3 50	@	4 00

Nuts.

Walnuts are firmer in price, but even at the advance they do not seem to be coming into the local market fast enough to supply the demand. In fact, as one of the larger buyers puts it: "We are threatened with a walnut famine, which promises to assume serious proportions before the Eastern holiday market can be supplied." There is admitted to be a crop shortage of nearly 50% in nearly all growing districts, but the present scarcity in the local market, and that which is threatening in the East, is caused by the lateness of the crop in maturing, it being about three weeks later than usual this year. That part of the new crop which has arrived is showing up fairly well as to quality, the nuts being of good average size and very sound. Shipments of almonds have been heavy, and the market is rather easy, though quotations remain unchanged.

Peanuts, fair to prime	4¼	@	5½
Cal. Walnuts, No. 1 soft shell	--	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
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Almonds, IXL, ℔ lb	11	@	12
Almonds, Ne Plus Ultra, ℔ lb	11	@	12
Almonds, Nonpareil, ℔ lb	11	@	13
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THE DAIRY.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the Pacific Rural Press by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

COWS.

Aaltje Salo Wartena, T. S. Tompkins, J. Kelsay, Rocky Ford.

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Korndyke Butter Prince, R. M. Hotaling, John A. Stewart, Colony Center.
Sir Aaggie Josephine, J. H. Williams, Robert Doherty, Hanford.
Sir Alcartra De Kol, J. H. Williams, H. Morris, Hanford.
Sir Hartog Inka Josephine, J. H. Williams, A. B. Evans, Fresno.
Sir Overton Mechthilde, J. H. Williams, W. J. Fulgham, Visalia.
Sir Setske Josephine, J. H. Williams, Thomas E Howes, Hanford.
Sir Shadybrook Gerben, J. H. Williams, A. B. Evans, Fresno
Trompaula, The Board of Trustees of the Leland Stanford Jr. University, Neils Petersen, Chico, Cal.
Augustus Mechthildus, H. V. Traynham, G. F. Weyland, Arbuckle.

Butter Making in Holland.

Consul Mahin of Nottingham reports on successful efforts made by the Dutch Government and farmers to revive butter making in Holland. The butter is made both fresh and salt, to suit the wants of buyers, particularly in the export trade, which is being assiduously cultivated, with encouraging results. In the large creameries all the latest mechanical devices are used. The cream and skim milk are generally pasteurized, and refrigerating and ice making plants are attached to many creameries. In dealing with the milk all kinds of centrifugal systems are used, and a practically complete separation of the cream is aimed at. As a rule, hardly $\frac{1}{10}\%$ of fat remains in the milk, this being about one-thirtieth part of the quantity of fat in new milk.

In various parts of Holland are "butter control stations," which are described in detail by the agricultural editors. A chemist is at the head of each station, with a staff of analysts under him. Inspectors, instructed by the chemist, unexpectedly visit dairies, stores, creameries, etc., and collect samples of butter and all materials used in it. These samples are analyzed, and the results are registered, so that the officials connected with the "control" know almost exactly what the chemical composition is of the butter at each creamery, etc., and at any time of the year. The analyst has, therefore, all information necessary to give an absolute opinion as regards the purity of samples of butter made at creameries that have joined the control station or system. By comparing the composition of the samples of butter submitted for analysis with the results of the analyses of samples of butter made at the creamery, and at the same time of the year under official supervision, there is no difficulty in obtaining a certain opinion in each case as to whether or not the butter has been adulterated. The composition must in both cases be the same, and the slightest fraud is immediately detected by this system of control.

Government Supervision.—The control stations are under the supervision of the Government, and all butter sent out from creameries that are under control bears a Government stamp. This stamp is affixed on a very thin paper label. Each label bears also a different number and a letter. Batches of labels are supplied to the creameries working under the control system, and the number, etc., on each label is registered in the books of the Government, so that when a label is seen upon a given package of butter in England, in Germany, or in any other part of the world, it can immediately be ascertained from what creamery the butter came and the date upon which it was made and exported. In this way the butter is traced to its source.

It is an evident inducement to farmers and creameries to make only a genuine article that better prices are realized when they work under the butter control system; but, on the other hand, should they be caught tampering with their commodity, they suffer a very severe penalty. It is said that not a single case of fraud has yet been detected against a producer working under the control system. It would seem that the labels might be taken off a package of butter and used again by some unscrupulous person, but even this one loophole for possible fraud is closed by the thinness of the label and its being impressed against the butter by a stamp, so that it can not be removed without tearing it.

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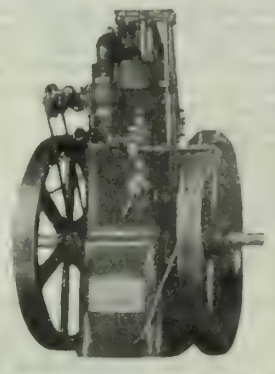
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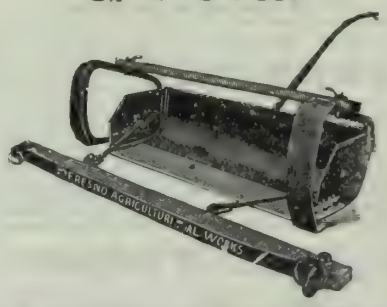
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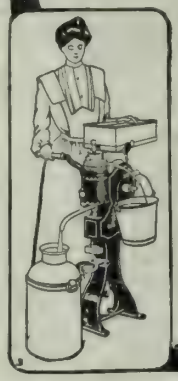
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SHEEP AND WOOL.

Sheep Bloating on Alfalfa Pasture.

Prof. E. E. Elliott, in The Ranch, says there have been many inquiries as to the effect of pasturing sheep on alfalfa and danger of loss consequent on bloat, and proceeds to give specific information on the subject, as it is one of such importance that all possible light should be thrown on it.

. The disease commonly known as bloat or hover and technically referred to as acute indigestion or tympanitis is so familiar to most stockmen that its nature and treatment need not fully be discussed here. The causes inducing it are also more numerous than are usually understood. With our farmers it appears chiefly in connection with alfalfa feeding. But it may be caused by clover, roots of various kinds, many kinds of grasses and some weeds, especially by wild mustard and even by prickly lettuce.

Sometimes the same trouble is caused by dry feeds and grains, although this is unusual. Any green, immature forage is more dangerous, because with it indigestion occurs more readily and fermentations take place rapidly with the accompanying formation of dangerous gases. Just how and why these fermentations occur is not fully understood, nor is it always possible to mark the point of safety in many of our feeding operations.

In pasturing alfalfa with sheep there is always present the danger of bloat. Sheep, as a rule, are more easily affected than cattle. This may be due to their greedy habits, which are especially marked when corralled over night and then turned out on full feed while the early morning dew is still fresh on the fields. As a matter of fact, quoting a high authority, "it is never perfectly safe to pasture stock on alfalfa." There are valid arguments against the practice that can only be overcome by the question of economy. As a general thing, on irrigated alfalfa fields the injury to the soft, moist soil due to the packing by the thousands of sheep footprints is very great and always appears in subsequent crops. To get the best results the alfalfa should be cut and fed in a partly wilted condition; but this practice is not popular with feeders on account of the expense of handling the crop in this way. We have heard few complaints of bloat on alfalfa growing on the upland and unirrigated sections. For the most part, such crops are not pastured until the second crop, when the growth is less rank and luxuriant. There appears to be very little danger under such conditions. But in the case of the irrigated crop the danger is always present and can only be overcome by pasturing with the greatest caution. Early morning pasturing, particularly if there is a heavy dew, is always to be guarded against. A good practice is to allow stock to run to an old stack of hay or straw. Usually they eat considerable of this dry feed, which appears to have a counteracting effect over the sappy, green stuff in the fields. If one can turn his sheep back into the yards for a short time after a quarter of an hour's pasturing the effect would be good. Free access to salt at all times is absolutely necessary.

Enough sheep should be kept on the pasture to keep it practically eaten down to the ground. It is exhaustive on the field, but the safety of the sheep would be greatly increased. Another alternative is to allow the growth to become practically mature and then allow the sheep to pick off the heads and the leaves. This, however, causes a great waste of feed and consequent loss.

It is very probable that some of the causes of bloat lie in the physical condition of the animals attacked. Animals often bloat up suddenly even when they have been feeding in the pasture for weeks with perfect immunity. A tendency to indigestion or any temporary disarrangement of the digestive system would doubtless induce bloating. The healthy condition of the animals must be maintained.

Alfalfa is pre-eminently a hay and not a pasture plant. To preserve the fields permanently when once well seeded should be the aim of every grower. Pasturing always causes more or less injury, but the use of the mower does not. I believe that in the long run the best results with sheep will be secured by cutting and feeding while green. The practice is less expensive than herding, and the evil effects of the bloat, as well as injury to the growing crop, is also avoided. The number of stock that can be maintained in this way will be practically double over the pasturing method.

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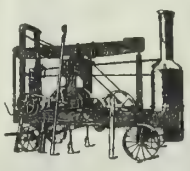
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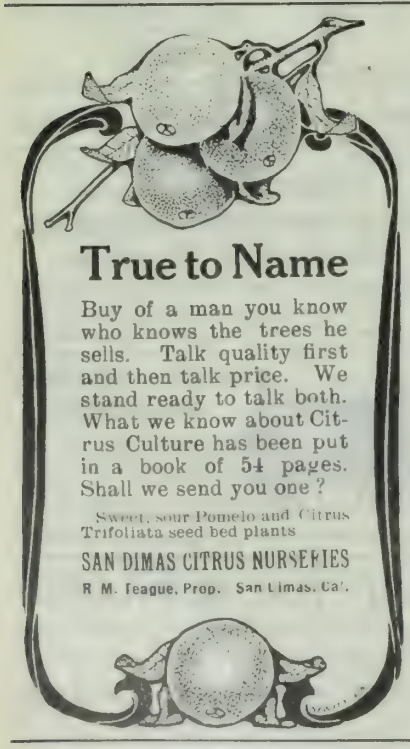
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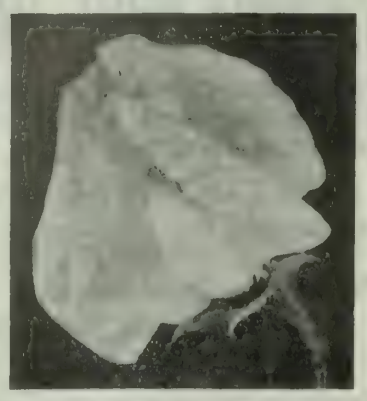
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THE VINEYARD.

The Greek Currant Problem.

Mr. Charles S. Wilson, secretary of egation at Athens, furnishes an interesting report on the reduction of currants in Greece, together with an arrangement between the Greek treasury and the Bank of Athens, the main purpose of which is to promote cultivation and stimulate exportation. We shall present below the greater part of Mr. Wilson's report protesting, however, against the Greek view of the California experiment in currant growing which he doubtless imbibed in Athens. The chief reason why California does not grow Zante currants is because the Sultana and Thompson's Seedless types are so much better that the days of the Corinth currants are probably numbered. Another reason is that one method of producing and marketing seeded raisins also makes the little, black and dirty Greek currants undesirable. We have no longer any reason to try to compete with such a product. Mr. Wilson's report is as follows:

The most important agricultural product of Greece is the dried currant, and the actual condition of the country is regulated by two facts, (1) the dried currant, the production of which surpasses the demand, and (2) the question of wheat, which is not raised in sufficient quantities to supply the wants of the country. The last session of Parliament passed important laws on both these matters and it is hoped that an improved economic condition will result. In 1830 the vineyards producing the dried, or Corinth, currant covered an area of only 3800 hectares, producing about 10,000,000 Venetian pounds of fruit, or an average of 2600 pounds per hectare. In 1851 the area had increased to 27,257 hectares, and the production to 86,000,000 pounds. In 1871 the vineyards covered 34,631 hectares, producing 150,000,000 pounds, or 4300 pounds per hectare. At this last date the phylloxera appeared in France, causing a great demand for the Greek currant, the price of which rapidly rose, and the plantations in the Peloponnesus and the Ionian Islands increased enormously. In 1881, 50,000 hectares were given up to the cultivation of this fruit, producing 263,000,000 Venetian pounds, or 5250 pounds per hectare. In 1891 the progress continued with 67,000 hectares with a crop of 343,000,000 pounds, and finally in 1903 the limit was reached with a crop of 387,000,000 pounds produced on 75,000 hectares, averaging 5160 pounds per hectare.

All the vineyards producing the Corinth currant are situated in the Peloponnesus, the Ionian Islands, and Eupoca, and all attempts to introduce its cultivation in other parts of Greece, as well as Europe and California, have failed, as an entirely different grape is produced as a result of transplantation. Besides the Corinth raisin a small quantity of Sultana raisin is produced in Greece, which brings a price two or three times greater than the former.

In 1892 the French demand for the currants, which in 1889–90 had been 70,000 tons, diminished, and in 1897 ceased entirely.

THE GOVERNMENT TRIES TO HELP.—The mean annual production of currants during the period 1895–1904 has been 306,600,000 Venetian pounds, while the mean exportation for the same period has not exceeded 244,100,000 pounds, thus leaving annually in the country 62,500,000 pounds. A severe crisis naturally resulted, and the Greek Parliament passed a series of laws by which 15%, and later 20%, of the amount of currants exported was retained as a tax. Finally, in 1899, a currant bank was established to take charge of this "retention," and also to buy up all currants of an inferior quality, which were injuring the market. The currants retained could not be exported, but were sold by the currant bank to the local distilleries. As a result of these measures, in 1895, 1896, 1897 and 1898 the Government received by the retention tax 147,000,000 pounds, of which it was able to sell only 131,000,000 pounds for the sum of 7,743,000 drachmas.

Owing to the large crop of 1902, the crisis became more acute, and in 1903 a bill creating a "monopoly for the sale of dried currants" was presented to the Greek Parliament by a group of English capitalists To this monopoly the Governments of England, Germany and Holland protested, on the ground that it violated conditions of their commercial treaties with Greece, and as the Greek ministry changed at this time the bill was never voted upon. In 1903 the currant crop was the largest ever produced in Greece, and naturally the situation became worse, so that the Government was obliged to pass new relief measures. The currant bank was authorized to borrow money to increase its purchases in order to keep up prices, and also the 15% tax paid on currants exported was to be paid in kind, which, with the 20% retention tax also paid in kind, disposed of 35% of the currants exported. In addition, the planting of new vines was forbidden by law. As none of these measures brought much improvement, the Greek Parliament at its last session adopted a convention for the regulation of the currant trade.

Patrons of Husbandry.

How to Help the Farmer and Stop the Postal Deficit.

TO THE EDITOR:—Last week I took occasion to urge on a California Congressman the propriety of establishing an up-to-date American Parcels Post for the greatest good of the greatest number.

He retorted that already there was an annual deficit in the postoffice budget.

Now, Mr. Editor, I assume you believe that our national business can be managed successfully on the same lines which obtain in all private businesses.

When a merchant finds himself losing money because he has to pay a number of employes whose time is not fully occupied by his present amount of business, what does he do? Doesn't he try to increase his business so as to fully employ his clerks, and in this way make a profit?

Now it is claimed that the rural free delivery is the chief cause of the present deficit. The carriers are not handling enough mail matter to make their routes remunerative. They are only half, or quarter, occupied. Increase the receipts on these routes 50% or 75% by instituting an up-to-date parcels post, and in a year or two at most the postal deficit would be wiped out and a profit on the year's operations would follow, as it does in all civilized countries.

Recently in England I made inquiry as to the effect of cheap parcels post on retailers and others and in no single instance did I fail to find satisfaction with the institution.

As to its utility to the farmer, it can be measured by the fact that any farmer can mail from his own gate just as much produce as he wants to, provided it is put up in parcels not to exceed eleven pounds each. Cream, meat, honey, eggs, chickens, fruit, vegetables—all are mailable.

It should also be borne in mind that, with the increased dispatch of parcels, comes also an enormous increase in the amount of first-class mail matter, letters and post cards, giving orders, acknowledging receipt, and also an increase in the issue of postal money orders.

Now is the time for citizens to bestir themselves to communicate their views to their Congressmen. What's the use of being an American if you don't do your share in a government by the people for the people?

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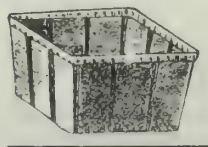
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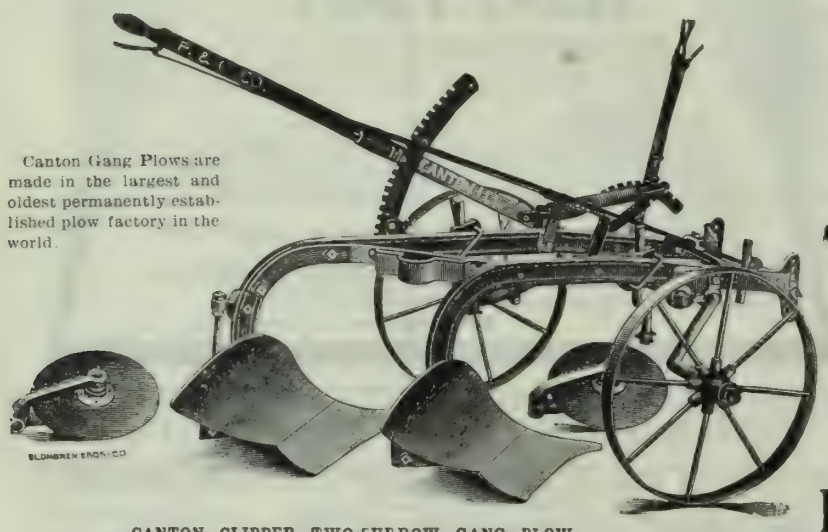
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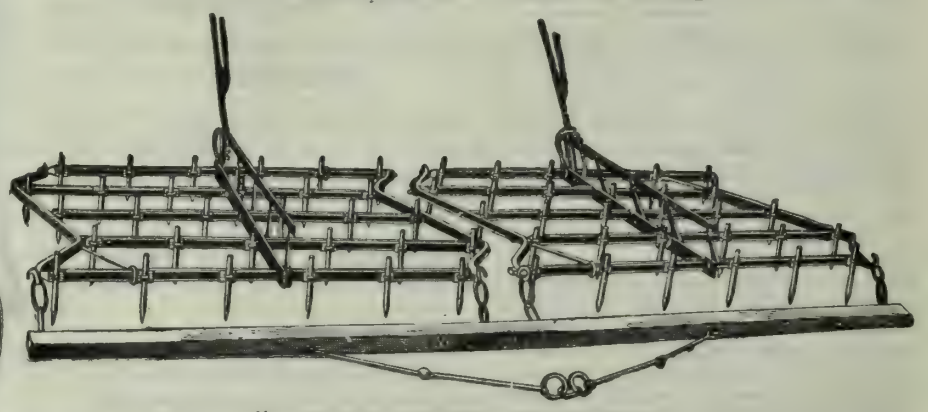


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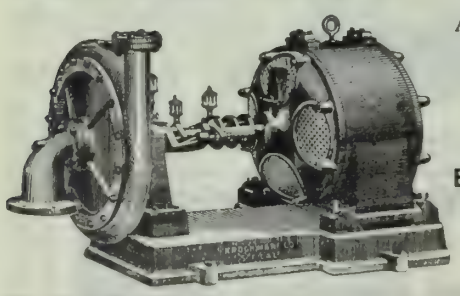
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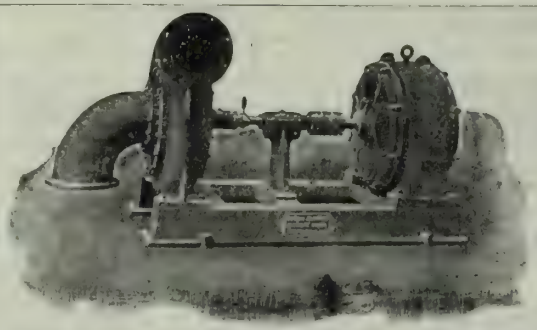
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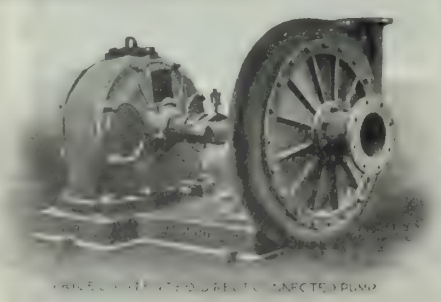
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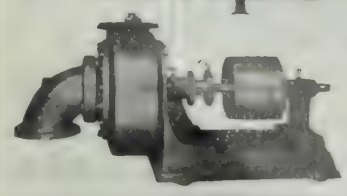
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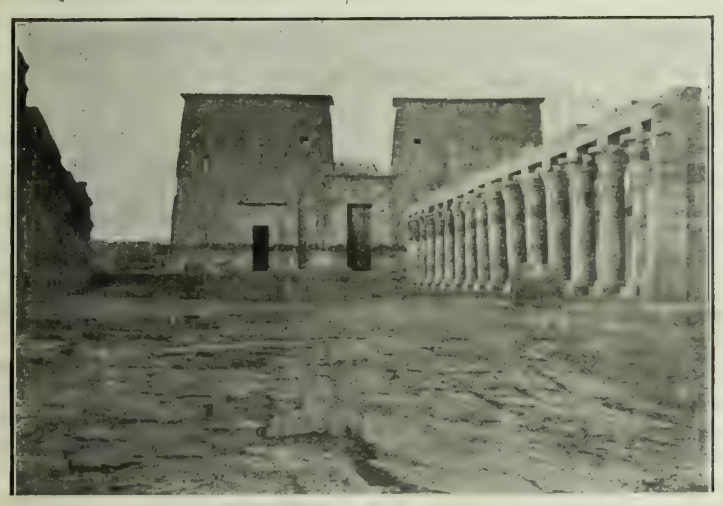
Vol. LXX. No. 21. SAN FRANCISCO, SATURDAY, NOVEMBER 18, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Scenes in Egypt.

On another page of this issue is a very interesting article upon irrigation in India and Egypt which shows how in even the oldest irrigated countries the spirit of development is now rife and that those who know irrigation best are most confident of its value as an agricultural recourse. The pictures on this page will serve to illustrate the allusions to irrigation in Egypt, although the scenes are chiefly found in the arid environment of the irrigated valley, which is more picturesque if not so productive. And yet some of the pictures are eloquent of irrigation, for example the view of Assouan, where the great new dam is situated. Of this enterprise there was a very interesting account printed in the PACIFIC RURAL PRESS of May 13 last. It was written by Mr. John Tuohy, our well known Tulare correspondent, who is one of our keenest observers and most logical expounders of progressive agriculture. Of the Assouan dam Mr. Tuohy says that it is 1¼ miles long and about 20 to 24 feet wide. At the highest stage, when the water flows over the dam, it is about 80 feet deep and the water is backed up the river 120 miles. The dam has already cost the government of Egypt over $15,000,000 and it is not yet complete. The dam is intended for storage purposes only, storing when the river has its floods in the months of July, August and September, and holding until the following spring, March, April and May, when it is let down, causing overflows twice a year instead of once.



Assouan on the Nile, Egypt—Site of the Great Dam.



The Temple of Phillae, Showing Marks of Inundation



Looking North from Absciel—An Arid District.

Except the river bottom lands of the Nile, Egypt is absolutely mountainous, sterile, without a sign of vegetation and an utter desert. Perhaps 80 to 100 miles above its mouth the Nile forms a delta and there is perhaps as much distance between the mouths where the waters are discharged into the Mediterranean. It is 600 or more miles from the forking of the river to Assouan with an average width of bottom land of 8 miles.

The bottom land and the delta is rich, fertile and productive. It is cultivated to the water's edge and made, by cultivation and irrigation, to produce two and three crops a year, each crop being abundant. It is one of the greatest wonders of the world that no mortal knows how long this intensive cultivation has been going on, for Egyptian history, civilization and agriculture are the oldest known in the world, and its oldest record goes back to 7000 years before Christ.



A Desert Express Fit for Sand Travel.



Amid the Rocks at El Hudi, Egypt.



Three Sheiks of Egypt.



A Desert Resting Place on the Road to Absciel, Egypt.

PACIFIC RURAL PRESS.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, NOVEMBER 18, 1905.

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The Week.

Southern California takes the lead this year. They have had a grand rain and the winter season has opened to the delight of the farmers. A correspondent writes us that the storm in Orange county was severe enough to shake off many walnuts, and they will have to scurry around to pick them up before the mold discolors them. But this is only the farmers' usual luck. He is so exposed in his operations that he is apt to be hit two ways at once, and it takes him some time to tell which way to fall. There is probably but little doubt, however, that the good soaking at the south will many thousand times compensate for the walnuts, and even that may yield to a little bleaching. The rest of the State rejoices with the south, and expects the same thing to come other ways before long.

Wheat values have naturally reacted a little from the rush of last week, in sympathy with a similar condition in distant markets. Barley sympathized with wheat on spot, but futures held up well, which shows confidence, but coming weather will have much to do with that phase of it. Oats and corn are about as before. Beans have continued to improve and limas and blackeyes are still strong, with less gain in other sorts. Feedstuffs are unchanged. Hay holds up well. Beef and pork are in ample supply and steady, but mutton and lamb are scarce and firm. Butter, cheese and eggs are doing well. Poultry is in freer receipt and rather weak. Potatoes and onions continue strong. Oranges and lemons are unchanged and good apples still sell well. Dried apples and prunes are continuing an upward course. Nuts and honey are quiet. Hops are no better and wool is quiet.

In connection with the comments credited to Mr. A. B. Sprague concerning the increase of fruit shipments from all supply points, it must be added that Mr. Sprague desires a correction made as to the Sacramento river district where the shortage of pears reduced the season's total, and this fact was lost some way in the working up of the interview.

We have a public opinion that the action credited to the California State Veterinary Medical Association, which opposes the work of educated veterinarians in the way of answering inquiries in the columns of agricultural journals, is unfortunate and unwise. It is important to educate the people to the desirability of rational treatment of animal diseases. Unless this can be done the educated veterinary profession will make very slow progress in differentiating itself from the old "cow doctor" class. The suggestion of intelligent conception and treatment of diseases is certainly a strong force in popularizing the profession, and to disregard it on the ground that the public will pay for good work before they have a chance to learn what is goodness in such matters, is certainly a mistake. We have labored continually to help this profession to a better place in the public mind, but the present position seems to be that it is better to stay in the dark and to sacrifice the general advancement of the profession rather than lose the chance of a fee. It is the right of the Association to do this, of course, but it is our belief that in the effort to gain a fee they lose the chance to secure a competence—for public recognition of the standing of the profession would mean that to every skillful practitioner.

Our next State excitement is certainly to be education. The State Teachers' Association is to meet at Christmas in Berkeley, and the attendance of ten thousand teachers is probably to be reached, because half that number is included in the counties which have arranged to hold their county institutes this year at the University. The State Farmers' Institute will participate in the meeting, because the chief topic is to be nature study and the elements of agriculture in the curricula of the public schools. But this great meeting at Berkeley is only going to be the beginning of the educational display. It is now announced that the executive committee of the National Educational Association, through its president, N. C. Schaeffer, superintendent of public instruction of Pennsylvania, has accepted the invitation from California to hold the next annual convention of the Association in San Francisco, July 9 to July 13, 1906. This means that anywhere from twenty thousand upwards of the teachers of the nation will come to this State next summer, and think of the California stories which will entertain wide-eyed children all over the country for years to come! It will be an advertisement of the State than which no other can reach so far and sink so deep.

It is quite a drop in topic, but we must insist that there is great outlook for this winter's movement of California cabbage. The Eastern crop is short and the Orange Judd Farmer says the outlook for prices is much more favorable to producers than a year ago. This is evident from the present attitude of buyers who are giving more money for cabbage than they did last fall. The yield then was very generous and quotations below the average for the past few years. Our contemporary is receiving reports from leading cabbage producing sections of New York and Wisconsin and for the most part state that the tonnage of cabbage this season is not running as large as last year. In the foremost cabbage counties of Wisconsin the probable acreage to be harvested may show up somewhat larger than last year according to advices, but the yield is reported to be promising only two-thirds to three-fourths of 1904. California often has to help out the sauerkraut factories of the great West when their supplies run low and it looks that way this year.

We have often spoken of the activity in shipping fruits and in dried fruits this year. It is interesting in the same connection to emphasize the fact that the canners have been active. It is stated by those in the trade that canned fruit market is reported in a very healthy condition, with constant inquiries. Goods are cleaning up closely on the staple lines. Jobbers are buying again to replenish the stocks laid in early this season, and the shortage in the Eastern apple crop has increased the demand for California canned fruits. The foreign export trade, especially with England, fell off this season, but the great increase in the domestic demand for canned goods more than offset the deficiency. The total business for the season is the largest that the association has ever had. These facts will be encouraging to those who propose to plant canning fruits this winter.

This is what will happen for us when the Panama canal is finished. Consul-General Guenther, of Frankfort, writes on authority of German newspapers that hereafter freight for 110 pounds of butter from Melbourne to London will be only about 90 cents. Three large steamship companies have now reduced the freight rates on this article, and it is therefore expected that the exports on Australian butter will increase considerably. Modern means for preserving food articles have resulted in now shipping over long distances such articles as are especially scrutinized by the public as to freshness. Eggs are being shipped in barrels so prepared that they keep for almost any time. Butter is also rendered to keep fresh for a long time, and at London butter is now sold which comes from Canada, Siberia, Australia, and even from New Zealand. The exports of butter from Melbourne to London commenced a few years ago, and last year amounted to 12,000 tons.

QUERIES AND REPLIES.

The Bearing of the Winter Nelis.

To the Editor:—I have about 500 Winter Nelis pear trees now growing in Ignacio valley, Contra Costa county. The trees are about eighteen years old, good healthy trees, well pruned and cultivated, but the fruit is small and the tree is a shy bearer. Will you please inform me what to do to make them bear good large fruit. I thought they might need some good fertilizer. If this is your opinion please advise me what kind of fertilizer to use and how much and when to use it.—Grower.

We wish we could tell you something that would make your Winter Nelis behave better. This variety is, unfortunately, given to just such disappointments. There is no particular fertilizer which would produce the specific change which you desire. You can, of course, stimulate growth by using any "complete fertilizer;" nothing is better than stable manure for that purpose, or in the absence of that, any of the mixtures furnished for fruit trees by fertilizer dealers would also be effective, but even the most thrifty growing Winter Nelis trees are often so shy in bearing as to be unprofitable, and a great many orchards have been cut out after trying all the experiments in fertilization and pollenization that could be thought of. The size of the fruit could probably be much improved by good mid-summer irrigation, unless you are sure that the land is quite moist, but stimulating the growth of the tree and reaching a better size with those fruits which do set, does not reach the worst difficulty, and that is the exceedingly shy bearing of the variety in some locations.

The Sugar Prune.

To the Editor:—An objection is being raised to the Sugar prune, after so much has been said in its favor by those who have had it under cultivation. One writer asserts that its only recommendation would seem to be its great productiveness. What is wrong with the Sugar prune? Is it true that shippers do not want it? If the Sugar prune is a failure, then the startling creations from the magic horticultural laboratory of Luther Burbank have failed to evolve a single thing of any important commercial value up to date. It would be interesting to hear the opinions of those who have had experience in growing and marketing the Sugar prune, and through these columns, with your permission, I would invite every one interested to tell us what they know about it, for many of us have been led to believe that it is "the prune," and would wish to know why our confidence has been misplaced. The question is: Shall the growing of Sugar prunes be abandoned or not?—A. Kamp, Sunol Glen.

That is just what we wish to know, and have frequently invited statements involving candid judgment based upon adequate experience. We hope they will come in quantity. Of course, the writer reaches a very hasty conclusion as to the value of Burbank's varieties. The Sugar prune is not the only thing, by any means, and a demonstration of its unsuitability would not wreck his fame. But that does not matter. Burbank's fame will take care of itself. What we want to know is this: Is the Sugar prune worth growing, and for what?

Opium Growing.

To the Editor:—Please let me know if in the soil of Ross valley I might make a success in poppy raising for the production of morphine from the poppy plant. If the Ross valley soil is not suited, what other would be more suitable to the growth of the poppy plant?—Amateur, Marin county.

The soil which you mention would be suitable for the growing of poppy, provided you use enough water and cultivate well. The poppy is not particularly exacting in its choice of soils and will succeed in a

great variety of them. Your success in poppy raising for opium, however, does not depend upon the soil, nor upon the growth of the plant, but upon whether you can do a great amount of hand work in the preparation of opium at a cost to compete with the cheap labor of Asiatic countries. Opium has been successfully produced in California from time to time for the last thirty years, but no one can make a commercial success of it with wages as they now are in California, unless some plan of machine extraction can be successfully applied.

Storing Almond Seed.

TO THE EDITOR:—I have some bitter almonds which I wish to plant, and when the seedlings are large enough I wish to bud them to the varieties that I want. I have had much disappointment and loss from purchased trees, and I concluded to grow my own seedlings. As I have had no experience in growing nursery stock, I bought California fruits. It is practically impossible for me to plant the nuts now where I will want the trees to grow, so I must put them in and as you suggest on page 71 of your book. How shall I keep the nuts until planting time? You say that in three or four weeks after putting them in sand they will sprout out, and yet I infer that if they are not bedded in wet sand they will become so dry that they will not germinate. I do not want to lose the few bitter almonds I have, for I had a good deal of trouble to get them.—BEGINNER, Sacramento county.

You can delay the sprouting of seed almonds by keeping them in damp sand at a low temperature; that is, for instance, on the north side of a building or fence where the sun cannot reach them. If we have usual winter temperature, it is probable that the seeds will not start until February, and by that time the grain ought to be in good conditon for planting out. If you find that the seeds are not sprouting as soon as you desire, move the box into the sun. Be sure and provide drainage, so that the box does not hold water and the sand is merely moist, and not wet. We have not much sympathy with the plan of planting nuts in place and working over the seedlings in the field, but you can get good trees that way if you are willing to take the trouble.

That Squirrel Disease.

TO THE EDITOR:—I would like to call your attention to the inclosed clipping from the Livermore Herald concerning the squirrel disease. The idea that there is a disease seems to be scoffed at by the University people. I had this disease on my place last fall and it killed off nearly all the squirrels on my land. If this disease could only be studied, so that it could be started again if it should die out, it would mean thousands of dollars saved to the farmers. I calculate that the disease has saved me from $50 to $60 in poison and labor alone, and in the saving of the crop there can be no estimate made. The squirrels came in one year and destroyed about sixty tons of hay out of ninety tons.—CHESTER YOUNG, Livermore.

Oh, no; the University does not scoff at the existence of a squirrel disease. It simply protests against being endowed with a reputation which it does not deserve. People are constantly writing for the University squirrel disease germ, and the plain statement has to be made that the University never had any, never distributed any, and therefore cannot claim credit for any and cannot now furnish any. That is about as plain as we can make it. The University has no objection to a squirrel disease and would propagate one if it had anything promising. It would also take up the study of such a thing if satisfied of its existence.

Fertilizers and Orange Splitting.

TO THE EDITOR:—Our oranges are splitting badly. Can you not suggest a fertilizer or application that will feed the skin or rind heavier, making it more elastic and capable of expanding with the growth of the pulp? Upon slitting a ripening orange now with a knife it will bulge out considerably, showing that the rind does not grow as fast as the pulp, and so must split.—GROWER, San Bernardino county.

Growers of oranges have for a number of years endeavored to overcome the splitting of the fruit by the use of different fertilizers, and no definite results have been attained, although the restrictive use of potash in the fall has some support. It is very doubtful, however, whether the trouble can be reached through fertilization and we can not make any recommendation in which we have any confidence, because of the contradictory results reported by various growers. It is very likely that this exceedingly important question will be taken up for investigation at the pathological laboratory which the University is about to establish in southern California, and it is hoped that some escape can be had from the serious losses which are now caused by this fruit splitting.

Those Mexican Peas.

TO THE EDITOR:—In the PACIFIC RURAL PRESS of Oct. 21 I have been reading with great interest the piece about Mexican peas. I should like to know a little more about them. Would they do for a horse and cow feed? How are they harvested for hay, and about what time? Do they do as well if planted with oats or some other grain? Could they be broadcasted and get a good crop? I am not thinking of getting rich quick, but of utilizing some forty acres of land I have that would otherwise have to lie fallow this year.—FARMER, Stanislaus county.

These are the so-called Mexican peas which are used for lamb feeding, and which should be tried in California to see whether we could get summer or winter growth, or both. Our San Francisco seed men can doubtless get orders filled from Denver, if they have not already taken the hint. Most assuredly they would do for cow feed, and could be grown broadcast with oats to advantage for cutting if they are hardy enough to make a winter growth. But, until we know the plant more definitely, we cannot say just how it can be best grown in California.

Unthrifty Arbor Vines.

TO THE EDITOR:—I have a few vines which I planted two or three years ago for an arbor, therefore have not trimmed them much. They bore some fruit this year, but it was considerably mildewed and the leaves tended to curl and not thrifty looking. The vines are planted at the foot of a bank, therefore cannot be cultivated as well as if they stood out in the open.—GARDENER, Oakland.

In order to secure grapes and healthy foliage on your arbor vines it will be necessary to be sure that they have moisture and fertilizers, as they need them; also to practice a certain amount of pruning every winter, in order to secure a growth of good, new healthy canes. After this is done and you are sure that the vine has good conditions for growth you must fight the mildew by frequent applications of sulphur, dusting the sulphur upon the foliage at intervals of three or four weeks, and beginning to sulphur as soon as the shoots appear in the spring. There is considerable difference in the liability of different vines to mildew, and if such treatment as has been described does not give you good foliage you will have to plant some other more resistant variety.

The Grateful Gaillardia.

TO THE EDITOR:—I send you with this a flower that I wish to get the name of. It commenced to bloom early in September and is still blooming. Frost, so far, has not hurt it in the least, though the temperature has been down several times lately to 30°, and this morning it was 27°. While I do not consider it a very beautiful flower, I certainly think it is a very attractive one. The plants have not had a single drop of water since they commenced to bloom and the soil is perfectly dry.—IRA W. ADAMS, Calistoga.

The flower is Gaillardia, and if the root is perennial it is Gaillardia aristata. It should be more widely grown because of its gay coloring and decorative value; also because it is one of the most grateful and contented plants we have, willing to make a grand display under conditions which place most other plants into the sulks.

Small Olive Mill.

TO THE EDITOR:—Do you know of any machine that can be used to grind olives for a small oil plant, with capacity of 200 to 300 gallons per season. Would the grinding machines made for grinding corn and cob, and operated by a sweep, answer the purpose?—READER, Pt. Loma, San Diego county.

Almost any small grinder can be used if adjustable so as to bring out a product that looks about like blackberry jam. The small cider mills are generally used because they furnish both mill and press.

Plenty of Rain Coming.

TO THE EDITOR:—I have not the least fear of a dry season. I arrived at Sacramento City December 4, 1851, and took the stage next day for Mud Springs in El Dorado county. Such dust I never saw before nor since; it fairly rolled into the deep ruts after the stage wheels. When I arrived at Mud Springs I remarked that I thought Dust Springs would be a more appropriate name. Three days later I changed my mind, for the "winds blew, the rains drenched and the floods came" in great earnest, and the miners who were anxiously awaiting a downpour were made happy. If I remember rightly I mined in the rain most of the time for thirty-three consecutive days. So let us not despair.—IRA W. ADAMS, Calistoga.

The fact is pertinent and the final exhortation should be helpful in all affairs of life.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 13, 1905.

ALEXANDER MCADIE, Forecast Offical and Section Director.

Sacramento Valley.

Clear weather prevailed during the week, with warm days and cool nights. Light frosts occurred in some sections, but caused no damage. The drought is causing a scarcity of feed, and in some places stock are beginning to suffer. In the mining districts the situation has become quite serious, as the reservoirs are nearly empty and many of the large mines have been compelled to suspend operations. Dry seeding is still in progress. The sixth crop of alfalfa hay has been harvested in Yuba county. All late crops have been secured and fruit drying is completed. Oranges have been benefited by the favorable weather and are coloring rapidly. Orange picking is progressing, and the prospect is good for a large crop of superior quality.

Coast and Bay Sections.

Clear weather continued most of the week, with occasional fogs along the coast, warm days and cool, frosty nights in the interior. Temperature as low as 32° occurred in the Sonoma valley, but no damage was done to Cloverdale oranges or other crops. Forest fires caused considerable damage in Sonoma county. The long drought is causing much anxiety to farmers, dairymen and stock raisers. The soil is too dry for profitable cultivation, and the rapid failure of pasturage is having a serious effect on livestock and dairy products. It is feared that grass will not get well started before cold weather commences. Grapes are all picked, fruit drying is completed and most of the late crops have been secured. Oranges at Cloverdale continue in excellent condition and are maturing rapidly.

San Joaquin Valley.

Clear weather, with warm days and cool nights, prevailed during the past week. Light frosts occurred generally several nights, but caused no damage. The grape crop has been harvested and was good. Lemon and orange picking are progressing and shipments continue to Eastern points. Large crops of excellent quality will be harvested. Large shipments of potatoes continue from the Stockton district to Colorado and Southern points. One train of thirty-five cars of potatoes was shipped Friday from Stockton. Dry plowing and seeding continue. Some orchards are being pruned. Rain is badly needed for green feed and farming operations. Dry feed is failing, but stock continue healthy and in fair condition.

Southern California.

The rain at the close of the preceding week continued at intervals until Wednesday, and was followed by fair, warm weather. The precipitation varied from about 2 inches in the coast region to over 5 inches in the foothills and mountains. As the run-off was very light, the rain was of incalculable benefit to ranchers and orchardists. The water supply in the great reservoirs was largely increased. Plowing and seeding are progressing rapidly, and a large acreage of grain will be planted. Citrus and olive orchards are reported in better condition than for several years. Olives and late apples were greatly improved by the rain, and there was very little damage except to peanuts and walnuts. Beans and other late crops had been secured before the rain. Oranges are coloring rapidly and picking is progressing; prospects are good for a large crop.

EUREKA SUMMARY.—Long-continued drought decidedly unfavorable for dairy interests; ground too dry to plow; feed too short to do stock much good; water wells and creeks very low.

LOS ANGELES SUMMARY.—Last week's rain was unusually heavy in the southern section and much lighter in the northern. It started vegetation, and the first-sown grain is coming up; also put ground in condition for working, except in some places where too wet.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 15, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.00	1.89	6 79	7.24	70	44
Red Bluff	.00	.18	9.48	3.65	74	36
Sacramento	.00	.03	6.31	2.68	68	38
San Francisco	.00	T	7 86	3.12	70	48
San Jose	.00	T	3.14	.....	76	38
Fresno	.00	T	5.07	1.46	70	38
Independence	.00	T	45	79	68	36
San Luis Obispo	.00	.03	4.71	2.98	84	44
Los Angeles	.00	1.18	1 14	1 66	84	54
San Diego	.00	3 36	.17	.86	80	54
Yuma	00	1.07	.81	1.10	80	50

HORTICULTURE.

Advice on Apple Growing.

The Hood River district, near the Columbia river in northern Oregon, is a famous appple-shipping district, and experience of growers there is suggestive everywhere. Mr. E. H. Shepard gives explicit hints in a local paper from which we take leading portions.

Thinning.—There are but few of us who properly thin. According to experienced people who have made practical tests, and according to expert opinion of our experimental station men who make this business a study, apples should be thoroughly thinned. The general rule may be covered in one sentence: Apples should be thinned so that they do not hang closer together than 4 to 6 inches, and no two apples touch.

The Spraying.—In reference to spraying, I think I may be justified in saying that all those who have used the arsenate of lead, otherwise known as disparene, this year have secured better results than they had in the past with either the Paris green or the white arsenic; and, furthermore, I think I am justified in saying that those who have used the disparene have cleaner crops of apples than their neighbors who have used white arsenic this season. While I do not assume to be an authority on spraying, it is my opinion, from the practical tests made by Chris Dethman, that five sprayings, if properly applied and at the right time, are all that are necessary. However, the man who sprays every two weeks is certainly playing a safe game.

The most important spraying is when the blossoms just begin to fall, which should be followed with another spraying in about ten days to two weeks. At this time it is necessary to apply a very high pressure in order that the poison may be forced into the blossom end of the apple, for the reason that this is the point where the first brood begins its attack. Some people suggest the Bordeaux nozzle or Vermorel for this spraying, as you can secure more force than with a nozzle making the mist spray. For the latter spraying when the apple attains its size it is necessary to thoroughly coat the apple, and the mist spray does this most perfectly.

The general rule that some people follow is to spray a tree until it drips. The proper idea is to spray a tree until the apples are thoroughly coated, and to avoid the dripping. If too much spray is applied, it collects in drops, and the drops in forming pull the spray off from the surface of the apple surrounding the drop, leaving a part of the surface of the apple exposed. There is another feature in connection with spraying so as to form drops, and that is in reference to the red apple. This is especially true where considerable time is used in the white arsenic spray. These drops form a thick chunk of spray material which prevents the sun from reaching the surface of the red apple, making the apple when wiped show light spots where a drop of spray has collected. Endeavor to thoroughly cover the apple, forming as few drops as possible.

Methods of Pruning.—There are three general styles of pruning—the vase shape, the crotch and a training to a central shoot—all of which have advocates. The vase shape certainly makes a pretty tree, and I do not know of a prettier looking 9-year-old orchard than A. I. Mason's. The crotch shape does not seem to me to be a very desirable method, for the reason that it necessitates props, and if a man does not get his props up when a tree is thoroughly loaded, one-third or one-half of his tree may split down and spoil the tree. If you prune to a single shoot, running the branches out so as to hang down all around when you have a crop, should a limb break you will not lose half of your tree. The tree can be built up into what is known sometimes as the two-and-three-story tree. A tree should be branched as near the ground as possible and so as to permit cultivation.

The best part of a tree on which to grow apples is down near the ground, for two reasons. In the first place, you will have better apples and larger, and, in the second place, they will be easier to pick; and I might add a third reason, and say that your trees are less likely to break down from the weight of the crop.

Cultivation and Irrigation.—In reference to cultivation, there is little to be said with regard to improving our condition, as we already do excellent work along this line. Usually our best cultivators use a disk or cutaway in the spring, keeping up a dust mulch later in the season with either a Kimball or an Acme. By this method a man can conserve moisture so that it will not be necessary to irrigate until sometime later in July, or possibly the first of August.

I am a firm believer in irrigation; at the same time I believe in as little irrigation as possible, and am an earnest advocate of conserving moisture by cultivation.

Picking and Packing.—In reference to picking apples, I want to call the attention of the growers, and particularly of the newcomers, to the fact that a great many apples of the next year's crop are lost this year. I noticed some boys picking apples who were raised in the valley, and after they had finished a tree I picked up from the ground thirty-four fruit spurs, which would have meant $1 worth of apples next year. The time saved was about 5 cents, therefore there was 95 cents lost by this haste in picking. Do not allow a picker to knock off a fruit spur or twig.

Another cause of serious loss to the grower, perhaps the most serious loss of any, is the bruising of the apples. I had an extreme case last year, where a man had apples that were worth $2.10 per box so badly bruised that the packers refused to pack until they were all sorted. These bruised apples brought him less than one-half of what he could have got if they had not been bruised. His loss by this bruising in picking and wiping was $1 per box. No picker or wiper should be allowed to handle apples so that they can be heard to drop in the picking basket or heard to drop in the box when they are being wiped.

Apple Houses.—I sincerely hope that all of our growers will endeavor to build packing houses as rapidly as their means will permit. Last year apples after being picked were stored in all kinds of sheds and barns, which afforded no protection against the cold weather, and some apples were lost by being frozen and others had to be packed out before they were ready to be shipped. An apple should not be packed until it is ready to be shipped, for the reason that this is the only way in which we can feel sure of delivering the buyer a perfect box of apples, and by delivering perfect apples is the only way that we can maintain our reputation and secure the high prices which we are getting. Along this line of bruising I would suggest that it is advisable for all growers in wiping and sorting their apples to put all apples that run 4-tier and larger in boxes by themselves, and all apples that run 4½-tier and 5-tier in boxes by themselves also. If this method is followed, when the apples are poured on the table for the packer, the grower is saved a great deal of money by the apples not being pawed over, for the reason that this pawing over naturally bruises more or less. While some of these table bruises may not show when they are packed, they will certainly show up in the box later after being packed and affect our reputation, and if our reputation is affected it affects the price and our pocket, and we are the loser.

Packing.—Every grower certainly should have a packing table. A nailing machine is equally essential. Some growers nailed their apple boxes last year by hand without a machine. When you try to put a lid on a box in this way it is absolutely impossible to avoid bruising in getting the lid down.

All apples should be nicely wiped, for the reason that they present a much better appearance to the buyer and find a readier sale than if covered with spray, and it is this demand that enables us to get the price. One grower spoke to me about his apples being accepted, and he was an experienced orchardist and thoroughly up to date in every part of his business. I replied that if any of his apples were refused I would consider that he was to blame more than the packer or the inspector, for the reason that he knew what would go and what would not, and it was his duty to himself and everybody else in the valley to place on the packing table only such apples as should go—that is, a first-class apple in every respect. A box of apples after it is nailed up should be placed on the side as they are piled in the packing house, and should be laid on the side in the wagon when loading, as this method prevents bruising. I was very much surprised last year to see quite a number of our growers haul in apples over rocky roads on dead-ax wagons when the apples were worth over $2 per box and a set of springs could be purchased for $12.

One point that I forgot to mention is in reference to soiled boxes. Field boxes are very desirable, but, if yot cannot afford these, be sure not to put your boxes on the ground—place them on the props. Rich people do not want and will not buy nice goods in dirty and soiled packages. Dirty boxes every one should be ashamed to put fruit into. They will not be received this year. Cement nails are certainly the best to use, because if you use four of these on the sides of the top and bottom you will have no burst boxes.

In old orchards where humus is slightly deficient, our best orchardists advise planting a clover crop or vetch for cover and turning in. There is no doubt this would materially improve conditions.

Lemon Growing.

Mr. C. A. Day of Pasadena gives the Los Angeles Cultivator some interesting observation of successful lemon growing in southern California:

Choosing Locations.—One of the mistakes made in the past has been in the planting of lemons in locations totally unfit for successful lemon growing. Lemons require a nearly frostless location in order to produce lemons for the summer market, the only market that gives paying returns. Many of the lemon orchards that were planted in locations unfit for lemon culture have been taken out and budded to oranges.

In some sections a very much better quality of lemons is grown than in others, probably due to the quality of the soil. The process of weeding out the poorer quality of lemons and the survival of the fittest will result in the raising of the general average in the quality of California lemons.

The lemons of the Semi-Tropic District Exchange have during the year past given the highest average net return—$833.71 per car—of any district exchange in southern California.

Mr. Leffingwell's lemons have made net returns during the summer of from $1000 to $2400 per car, the latter price the highest for any car of lemons sold by the Semi-Tropic Exchange.

The writer heard Mr. Leffingwell remark that his average yield would be one car of lemons per acre. We have in this case an instance of a lemon grower with 125 acres, who has by correct methods of culture and handling succeeded in producing a uniform pack of fine quality, and won and established an enviable reputation for his lemons in the Eastern markets.

Fumigation and Fall Blooming.—Mr. Volney Craig of Lamanda, with 60 acres of lemons, holds to the theory that fumigation is a stimulus to the lemon tree, and results in the free blooming in the fall. It is a well-known fact that for a summer crop of lemons we must get the trees in full bloom in the fall of the year. When questioned as to his experience, Mr. Craig stated that he fumigated in the years of 1900, 1901 and 1904, and secured good crops of summer lemons. The fumigation of 1905 has been followed by free blooming of the trees.

Mr. Craig's plan has been to fertilize with blood fertilizer thirty days preceding the fumigation, and follow the fumigation with a thorough irrigation in basins, thoroughly wetting the whole surface, the irrigation for the rest of the year in furrows between the rows. Whatever effect the cyanide may have in stimulating the forces of the tree we do not know. That it destroys the crop of scales and fungi, and opens the pores, which would in this case have the effect of a stimulus to the tree, in connection with the stimulating and forcing effect of the fertillzer and heavy irrigation, would tend to bring out the bloom immediately after. In referring back to the years in which fumigation apparently produced a good effect upon Mr. Craig's orchard, in the years 1901 and 1903, the orchard was not fumigated and the crops in those years were light. As the Craig ranch has its own water plant the supply is always ample, and there is no stinting at any time in the amount of water supplied to the trees. Some of our lemon growers practice pruning early in the fall as a means to force the trees into bloom. With proper culture marketable sized lemons will be produced from eight to twelve months from time of blossoming, the lemons in the interior of the tree maturing first and those near the end of the branches last. The application of fertilizer early in the fall is important and along the line of applying nitrate of soda to orange trees just before the blossoming season.

Lemon trees should not be forced into bloom too late in the fall, as the very small lemons are susceptible to injury from frost, which usually comes in the last of December and in January.

The first quality of lemons are those which come to merchantable size while yet green. The culture, fertilizing and irrigation should be such as to bring the lemons to this size before they begin to change color. The forcing process should be constant and even, in order not to produce coarse, inferior fruit.

Pruning Lemon Trees.—In practice, there are several systems of pruning the lemon, but all agree that it should be headed low, with broad, open top. The low head facilitates picking from the ground, the breadth of top gives space for a large yield of fruit, and the open top gives fruit in the interior of the tree. The latter is an important feature, as the fruit in tue interior of the tree matures first, and with fall bloom will be ready for the early summer market.

With young trees, some growers prune three times in the year, the object being to grow the desired head without unnecessary waste of the vitality of the tree in growing superfluous wood. With old bearing trees, some growers prune throughout the year, removing from time to time the surplus sucker wood and diverting the vitality of the tree to the fruiting wood. There is a class of growers who make a practice of pruning once a year and then have to remove a large quantity of upright sucker growth. To my mind this seems a useless waste of the vital forces of the tree to allow this wood to grow the entire year.

Different varieties of lemons have different habits of growth, and the pruning should be governed accordingly.

THE FIELD.

Crimson Winter Rhubarb.

This variety is coming into great prominence in California. It is true to its name as a fall and winter grower in the coast districts of the State at least; the only drawback we know against free planting in situations where winter temperature is too low for its growth is the danger that there may be too much

of it. Perhaps the long distance shipments may prevent this. We have grown the plant in our garden at Berkeley from roots sent us by Mr. Burbank when he first introduced it, and have never seen it overpraised for growth and good quality. The following account by Mrs. Theodosia B. Shepherd of Ventura, in the California Cultivator, is accurate, according to our observation:

The most valuable plant acquisition in many years is the new ever-bearing crimson winter rhubarb, tested, introduced and recommended by Luther Burbank. It promises to be the most profitable thing the soil produces. Its superiority in every way to the old deciduous rhubarb makes it by far the most desirable variety worth growing in California.

This new variety is ever-bearing, requires no stringing, has a mild acid taste combined with a delicious berry-like flavor, and when properly cooked its sauce is a most beautiful bright strawberry red. There is no fruit offered in the market which, when stewed, excels it, either in delicacy of flavor or in beauty. It is easily grown and comes into bearing the first year, paying all the expenses of plants and cultivation, picking, packing, etc., and a handsome profit besides, while the following years the profit is enormous. From a little over three-quarters of an acre last year the writer gathered and shipped seven tons of stems from January 10th to July 10th, at which last date the plants were seventeen months old. We received 4½ to 5 cents per pound. A much better price could have been realized if we had sought a market outside the State where winter prevails during the height of this fruit's season.

This rhubarb is very easily grown. The roots, instead of being chunky, like the old variety, are long like the parsnip, and grow from 12 to 18 inches in length. Young plants about the size of a penholder, set out as late even as July, if properly cultivated and cared for, will come into bearing by Christmas. The plant usually sends forth from six to ten crowns, but frequently makes many more, and as fast as the stems are pulled others take their places. They are at their best from October to June.

Although the plant is everbearing, it is well to give it a rest during midsummer if a heavy crop is desired during the fall and winter. The stems can be used at all seasons, and the sauce, like that of the apple, possesses the great merit of being always welcome, having a peculiar flavor of which one never tires. It can be used as a stand-by at all seasons of the year. A fruit so highly appreciated in a State like California, where fruits are abundant at all seasons, must be hailed with delight in those regions where winter reigns many months in the year, and where the delicious products of California's sunkissed orchards are hailed as welcome visitors.

Crimson winter rhubarb will grow in any rich soil, and requires no fertilizer. It takes from 3000 to 4000 plants to the acre, and after becoming established requires water but three or four times during the dry season.

How to Learn Seed Testing.

The Arizona Agricultural Experiment Station publishes as timely hints for farmers some practical suggestions by Prof. J. J. Thomber concerning seed testing. It is truly said that the practical planter buys, plants and grows seeds for profit, and hence it is the best economy for him to test them for their percentage of germination, and where desirable, for their purity, before sowing them.

A Simple Device.—For the ordinary planter, the well-known "dinner plate" tester made with two soup or dinner plates, and one or more moist strips of sterilized cotton goods, preferably cotton flannel, will be found to answer all purposes. The cotton strips are sterilized in boiling water to destroy spores of moulds and other fungi present, folded twice upon themselves, and placed in one of the plates, the seeds are now laid between the folds of cloth so as not to touch each other, and the second plate is inverted over the first, thus forming a moist, aerated and more or less sterile chamber. The cotton strips must be kept well moistened, but not saturated, preferably with water that has been sterilized by boiling, and allowed to cool before using. Two or three lots of seeds may be tested in the germinator at one time, but each should be contained in a separate cotton strip and numbered to avoid error.

A More Capacious Apparatus.—When, however, it is desirable to make several germination tests at one time, or when many varieties are to be tested, instead of duplicating the plate germinators already described, the writer found the following germinator, suggested by Dr. Volney Spaulding, formerly of the University of Michigan, to be superior: A deep granite bread pan, six or eight inches wide, was obtained, in which was kept about one-fourth inch of water; cotton flannel strips of any convenient length, two or three yards, and of the width of the pan, were tucked crosswise at intervals of five inches; short galvanized wires about an inch longer than the width of the pan were inserted through these tucks and gathered together, thus forming the cotton strips into numerous folds or loops, which were suspended in the pan above the water by means of the supporting wires. The ends of the strips being left sufficiently long to touch the water in the pan, the entire piece of cloth composing the loops, in which the seeds were placed, is kept uniformly moist. The cloth should be moistened before beginning the experiment, and, it is needless to add, sterilized.

How to Do It.—A definite number of seeds taken as they come from an average sample are counted out for each germination test. For seeds in rather small lots, as garden seeds, fifty to one hundred will answer, while for cereals, grasses, clovers, and others used in extensive cultural operations, about two hundred should be used and the tests duplicated when any doubt exists about the results. The tests should be examined from day to day, and the sprouted ones removed and counted, the number being recorded on a sheet of paper.

The length of time required for germination is dependent upon several factors, chief of which are moisture, temperature, vitality, and varietal differences, six to ten days being sufficient for most kinds. When tests are made during the winter or early spring months, at which time it is usually most convenient, the germination should be conducted in a moderately warm room, so that the temperature will not fall below 50° F. at night and remain between 70% and 80% F. during the day. In the case of alfalfa and certain others of the clover family, a small percentage of the seeds will remain apparently sound at the close of the germination test. Allowance is usually made for these, one-third being counted as viable, i. e., capable of growth.

No test can be made with reference to the stock of seeds. Cauliflower, cabbage, turnip and beet seeds of poor stock—i. e., run out, are just as viable as those of good stock. The only means of remedying this defect is to use selected, home-grown seeds, or to buy the best stock of reliable seed houses.

The Purity Test.—The careful planter will often find it desirable to make the purity test for seeds. For this purpose a definite quantity of seeds by weight is taken from an average sample and separated by hand into the following lots: (1) pure seed of the variety desired; (2) inert matter, including dirt, chaff, injured seeds, etc.; and (3) foreign seeds, including weed seeds. The amount of pure seed in a pound or bushel is now easily estimated, and after its germination test has been made, the planter knows its exact value. By the purity test, also, the introduction of noxious weeds will be lessened, since one will not knowingly sow foul seed, and samples suspected of containing harmful weed seeds should be referred to the Experiment Station for examination.

The following purity and germination tests were taken from a series of experiments in seed testing carried on in the botanical laboratory during the last two years, the samples of seeds used being collected from various markets in southern Arizona:

Samples.	Purity Test.					Germination Test.			
	Seed Used.	Pure Seed	Inert Matter.	Number Weed Seeds.	Percentage Purity.	Seeds Used.	Seeds Sprouted.	Seeds Unchanged.	Percentage Sprouted.
	Gm.	Gm.	Gm.						
Alfalfa No. 1	5	4 53	.46	6	90.6	200	188	10	95
Alfalfa No. 3	.....	4 32	.68	0	86.4	200	190	9	96
Alfalfa No. 4	.....	3.58	1.42	3	71.6	200	187	12	95
Alfalfa No. 6	.....	4.47	.53	0	89.4	200	189	10	96
Alfalfa No 7	.....	3.64	1.36	0	72.8	200	151	33	81
Sorghum No. 1	30	29.18	.82	0	97.2	100	88	0	88
Wheat No. 3	30	28.78	.94	10	95 9	100	92	0	92
Rye No. 1	30	29 55	.45	0	98 5	100	96	0	96
Barley No. 2	30	29 76	.24	0	99.2	100	99	0	99
Oats No. 1	30	28.32	.59	298	94.4	100	94	0	94

It will be noted from the data that the sample labelled "Alfalfa No. 1" contained 90 6% pure seed, of which 95% was viable, or 86% of the total sample, while of sample labelled "Alfalfa No. 7" only 59% is capable of growing—i. e., 81% of the pure seed was viable, and 72.8% of the sample was pure seed. Sample No. 1 sold on the Phœnix market last year at 16 cents a pound, and sample No. 7 sold on the Tucson market at 15 cents a pound. It is quite apparent in this case that the highest priced seed is the cheapest for the planter. Alfalfa samples Nos. 3 and 4 also sold on the Phœnix market at 16 cents a pound, though No. 4 contained 29% inert matter. In every case it is to be noted that the samples of alfalfa seed were remarkably free from weed seeds, though a few have contained seeds of other species of clover. Good alfalfa seed should not contain more than 5% inert matter, and should give a germination test of 95%. With the exception of sample No. 7, the germination test ranged between 95% and 96%. From the above data it is readily seen why poor stands of alfalfa are of common occurrence, though the usual amount of seed may have been sown.

The samples of rye and barley which were tested were practically free from inert matter and weed seed, and gave a good germination test, as the results show, while in the wheat there were of an average ten weed seeds in every thirty grams of wheat, or about 9000 weed seeds for every bushel of wheat. The test for oats is submitted as example of grain foul with weed seeds, there being no less than ten varieties of weeds represented by 298 seeds. It is needless to add that the sample is unfit to sow.

CEREAL CROPS.

Improving Hard Winter Wheats.

At a recent millers' convention Prof. T. L. Lyon of Lincoln, Neb., agriculturist and associate director of the experiment station of the University of Nebraska, gave his views on how to improve hard winter wheat and retain fertility in the soil. He believes hard winter wheat will find a largely increased area for cultivation in spring wheat territory and under irrigation. Unless some effort is made to prevent soil deterioration, he believes it is only a question of time before we will import wheat. He said:

Hard Winter Wheat Improvement.—The wheat raised in this country may be roughly considered as of two kinds, soft and hard. There are degrees of softness and degrees of hardness, which permit of several subdivisions of these classes. There is a demand for soft wheat for certain purposes, and for hard wheat for others, and where the latter can be raised it is desirable to maintain that quality unimpaired.

In tracing the geographical distribution of wheat, it will be observed that soft wheat is produced in the humid States of the East and South and of the Mississippi valley; also on the Pacific coast, and on the irrigated lands of the arid region. Hard wheat is confined to the strip of semi-arid country extending from western Canada south through western Minnesota, the Dakotas, Nebraska, Kansas and Oklahoma.

Hard wheat requires for its production a soil rich in nitrogen, and receiving a limited quantity of moisture, combined with a short growing season and a dry atmosphere. Such conditions limit the production of hard wheat to the territory mentioned because it is only there that they naturally obtain. Certain portions of the irrigated region possess the same conditions with the exception of the water supply, and this can be regulated. It is altogether probable that large amounts of hard wheat will some day be raised under irrigation.

Available Nitrates.—A soil rich in nitrogen and limited in its supply of moisture results in a concentrated solution of nitrates within reach of the plant roots. A dry air insures a rapid transpiration of moisture, thus involving a large absorption of these nitrates. A short growing season prevents a large formation of starch, and the result is inevitably a hard wheat. In irrigated regions, therefore, where the soil is rich in nitrogen, the production of hard wheat is merely a matter of water supply, which is easily regulated.

That a soft wheat is now commonly produced under irrigation is due to the fact that a much larger quantity of water is used on the crop than there is any necessity for, with the results that the nitrates are washed deep into the soil, and the solution so diluted that the supply at the disposal of the plant is much diminished. The production of hard wheat in much of the irrigated region is entirely within the control of the farmer, and the supply from that source is destined to be large.

Wheat Area Extension.—It is also undoubtedly true that hard winter wheat production is to extend farther westward, even where irrigation is not practiced, and that the northern boundary of its production has not been reached. This is to be brought about by the evolution of more hardy and more strongly drouth-resistant varieties of wheat, a work in which several of the State experiment stations of the United States Department of Agriculture are at present engaged, with already visible results.

The prizes to be gained by extension in both directions are alluring. As wheat production proceeds westward, a good quality is assured, provided the fertility of the soil can be maintained. There is the added attraction of cheap land and large interest on the investment.

The northern extension of the winter wheat area means a substitution of spring wheat by winter wheat. Such substitution has been going on actively in Nebraska during the past twenty years, in which time the production has increased from almost nothing to a crop of from 30,000,000 to 40,000,000 bushels annually.

The incentive to substitute winter wheat for spring wheat is found in the larger yields per acre that are to be obtained from the former under the same conditions. In Nebraska, winter wheat yields nearly three times as much as spring wheat, and while this ratio would probably not hold farther north, where the summers are less favorable to late growth, yet judged by results of experiments at the Minnesota experiment station, winter wheat may be expected to increase the yield from 50 to 100%.

Winter Wheat in Cold Regions.—Adaptation of winter wheat to drier and colder regions has been going on for years by a process of natural selection. Crops are constantly being planted farther north and farther west. In dry summers and cold winters some plants are killed, the hardy and the strongly drouth-resistant survive. These furnish seed for the next crop, and the selection is again carried on, perhaps farther north or father west. The experiment sta-

tions by close observation of individual plants are now carrying the selection still farther.

It is not at all unlikely that winter wheat will be pushed northward into Minnesota and the Dakotas, and that to the westward its production will extend into the region of the sagebrush and the cactus. In bringing this about, some of the hardy Russian wheats promise to be of value. A variety known as Kharkof from Russia has shown itself to be wonderfully hardy in northern Nebraska. Beloglina, a variety from the same country, has shown great drouth-resisting qualities. From what has been accomplished so far, however, it seems likely that greater results can be achieved by the careful selection of the well-known Turkish red or Turkey wheat than from any imported varieties.

Durum Wheat Culture.—The so-called macaroni or durum wheats are spring varieties throughout most of the hard winter wheat region, and all of the hard spring wheat country. What the future of this wheat is to be cannot now be foretold. The fact that it is more productive than common spring wheat will make it a formidable rival of the latter, in spite of other objections that may be urged against it. Experiments in Nebraska and Kansas indicate that it does not yield as well as winter wheat, and if this continues to be the case, it can never be expected to be given a large place in the farming operations of that region.

There will be in the future, and, indeed, already is, a strong tendency towards deterioration in the quality and yield of grain throughout the hard wheat region. This arises primarily through a decrease in soil fertility.

Depletion of Soil.—Soil depletion has been universal in regions growing wheat exclusively, and all the great wheat-raising regions of this country have finally resorted to restorative farming. Dairying and other intensive forms of agriculture now dominate the former centers of wheat production. In the Genesee valley of New York, the Miami valley of Ohio, and in northern Illinois, the former great wheat-producing regions, many years of intensive farming have been required to restore soil fertility. Wheat raising in the United States has been in the main a pioneer industry. It has had its greatest activity on unsubdued land in the forefront of civilization, has preceded more general farming, and has been conducted in an extensive and wasteful manner. Either this must change or the United States must import most of the wheat she consumes in the future. New land is no longer to be obtained, except in small amounts. If wheat cannot be produced on old land, we must depend upon Canada for our supply, for there only is virgin soil still to be found.

Soil depletion has already made itself felt in the hard wheat region. The common practice of summer fallowing is an acknowledgment of this. It is not so generally recognized that the quality as well as the yield of grain is affected. There can be no doubt, however, that such is the case. Edgar says in his book, "The Story of a Grain of Wheat:" "Gradually as the Northwestern States have become cultivated, the original hard wheat has grown scarcer. Wheat raised on virgin lands has a peculiar strength lacking in that produced in older fields. It is capable of improving the character of other wheat blended with it when the mixture is made into flour."

Yellow Berry Deterioration.—Dr. Saunders, director of the Canada experimental farms, states that the quality of the Manitoba wheat is not equal to what it was a number of years ago. In the hard winter wheat territory, the increasing occurrence of the so-called "yellow berry" is evidence of incipient deterioration in quality. Yellow berry which takes from the value of hard winter wheat several million dollars annually, is due, primarily, to deteriorated soil, but the time of cutting and exposure of the grain after cutting have much to do with it. Wheat that is left standing after it is ripe always contains more yellow berry than wheat that is cut as soon as matured, but the principal cause of yellow berry is failure to stack grain. Left in the shock, frequently without a cap sheaf, the grain, bleached and dried by the rain, sun and wind, deteriorates until wheat that would, if promptly stacked, have graded as No. 2 is put on the market as No. 3, No. 4, or rejected.

The importation of good seed is of temporary benefit on land that has deteriorated, and the systematic breeding of wheat of high quality is of even greater value, but neither of these can maintain the yield and quality of hard winter wheat, unless soil fertility is conserved.

There can be no doubt that a different problem is to be encountered in the attempt to maintain soil fertility in the hard wheat region. The limited supply of moisture in a portion of that region makes it difficult to decompose barnyard manure or vegetable matter in the soil. These cannot, therefore, be added without care, but their use is by no means prohibited.

Soils That Conserve Fertility.—There is one respect in which most of the hard wheat region has an advantage over all of the earlier wheat-producing regions in this country. This is to be found in the freedom from loss of fertility by leaching. Practically all of the water that falls as rain on the trans-Missouri soils is returned to the air by evaporation from the soil or from the plants; hence, there is little loss of soluble fertility through the underground water, a source of soil deterioration that is very active in States farther east. Loss of fertility is here due largely to removal of fertilizing matter in the crop, and to the loss of nitrogen into the atmosphere.

Commercial fertilizers have had little place in the farm economy of this region, and it is to be hoped that they will never assume the importance here that they have done in the Eastern States. If such is not to be the case, timely attention must be given to the conservation of soil fertility.

Fortunately, all of the winter wheat area is adapted to the growth of alfalfa, than which there is no better plant fertilizer. Alfalfa and barnyard manure can save to posterity the virgin fertility of these prairie soils, and can make perpetual the reputation for high quality that this fertility has gained for Kansas, Nebraska and Oklahoma flour. But to do this, one-crop farming must be replaced by rotation of crops, and a periodical seeding down to alfalfa or grass, and with this must go live stock for the utilization of the forage, and, incidentally, for the production of manure. A system of husbandry based on these fundamentals is sure of success.

The question of moisture to decompose the plowed alfalfa roots and barnyard manure is one that asserts itself in some localities. Alfalfa gives an opportunity to apply manure as a top dressing to the crop instead of plowing it under, and by spreading it in the fall, much of its fertility is leached into the soil by spring. When alfalfa is plowed under, it may be necessary to summer fallow for a season in order to store up moisture, but it will not be necessary to fallow every other year to gather soluble fertilizing material, as is now done in some localities.

A Wasteful Practice.—Fallowing is an extravagant and wasteful practice. It adds nothing to the soil, and only adds to the available fertility by rendering useless a much larger amount. Professor Snyder of Minnesota has shown that for every pound of nitrogen brought into a condition in which the plant can use it, four pounds are rendered useless, and pass off into the air as the result of the summer fallow. The practice should only be tolerated where it is absolutely necessary to store up moisture, and should be resorted to as infrequently as possible.

No one is more vitally interested in maintaining the quality of wheat, and consequently the quality of the soil, than is the miller, and no one is in a better position to influence the farm practice of this region than is he. For that reason he should keep in mind and constantly preach these fundamental principles of farm economy.

In conclusion, let me enumerate the practices that will conduce to improvement in the quality and yield of our now deteriorating hard winter wheat: Early summer plowing preceded by the use of the disk harrow; early seeding, except where the Hessian fly is injurious to the crop; rolling in the late winter when the soil is loose around the plant roots; harrowing in a dry spring, after the plants are well started; cutting as soon as ripe, and stacking as soon as dry; keeping the surface of the soil stirred constantly to retain moisture, when no crop is on the land; above all, a periodical seeding to alfalfa and the use of barnyard manure.

THE IRRIGATOR.

Irrigation Enterprises and Their Achievements.

We find in the Experiment Station Record for October an exceedingly interesting review of irrigation works of the world and what is being accomplished by them:

Among the presidential addresses at the South African meeting of the British Association the past summer was one on irrigation, which is especially worthy of note on account of its treatment of the larger irrigation problems of the world. It brought together, furthermore, a large amount of information regarding the prominent features and conditions of irrigation in the principal irrigated countries. The address was delivered before the section for engineering by Sir C. Scott Moncrieff, president of the section. The speaker was competent to discuss the subject from his extended experience in the principal irrigated countries and the study he has made of it from an economic as well as an engineering standpoint.

Greatness of Irrigation.—The paper served to show anew the enormous proportions which irrigation has attained and the scientific basis which it has been placed upon in some of the countries of the Old World. It brought out in a rather striking way the similarity between the problems which are occupying special attention in other countries and those which are uppermost in this country, such as the pumping of water, utilization of artesian wells and of small reservoirs, the necessity for drainage as an accompaniment of irrigation, and the basis of payment for water. It also gave some striking illustrations of the colonization in India and elsewhere of vast tracts of country which, previous to the installation of irrigation works, were desert wastes.

The speaker characterized the irrigation in India and Egypt as being on the largest scale, that of Italy as having the most highly finished works and careful water distribution, and that of America as exhibiting rapid progress and bold engineering. "It is in India that irrigation on the largest scale is to be found," the Great Plains of northern India being peculiarly well adapted to it, and the teeming population absolutely dependent upon it for maintenance. As shown by the recent report of an irrigation commission, there are now under irrigation in that country something over 44,000,000 acres, or ten times the area at present irrigated in this country.

The greatest of its canals, discharging from 3000 to 10,500 cubic feet of water per second, was built to carry water into a tract entirely desert and unpopulated. It was opened in 1892 and enlarged, and ten years later was irrigating 1,829,000 acres, supporting a population of 800,000 inhabitants, who were brought there from more congested parts of India. The Ganges canal, opened in 1854, "at a time when there was not a mile of railway and hardly a steam engine within a thousand miles," has a length of nearly 10,000 miles, including distributing canals. Supplemented by the lower canal, drawn from the same river, it irrigates 1,700,000 acres annually.

A very bold and successful piece of irrigation engineering in southern India, which was completed a few years ago, diverts the waters of the Periyar river through the mountains to the plains on the other side. The river formerly descended to the sea on the west coast, where its waters could not be utilized, and large expenditures were required periodically to control its furious floods. A dam was built across its course and a tunnel made through the mountains, enabling the reservoir to be discharged into a system of canals to the east and applied to the irrigation of a vast area much in need of water.

In the State of Mysore a reservoir is now under construction which closes a valley containing over 2000 square miles by means of a masonry dam 142 feet high. The reservoir thus formed will contain 30,000 million cubic feet of water when filled, which, however, will rarely occur, the reason for the height of the dam being an engineering one rather than the need of ordinarily impounding such an enormous volume of water.

In Egypt.—Perhaps there are no more familiar examples of the wonders wrought by irrigation than those furnished by Egypt; but to the layman Mr. Moncrieff's statement that purely agricultural land near Cairo, where the average rainfall is only 1.4 inch, is sold as high as $750 an acre, is a revelation of the value which irrigation has placed upon these desert lands.

Here, it will be remembered, is the great Assuan dam, 600 miles below Cairo. This dam holds up a depth of 66 feet of water, forming a lake of more than 100 miles in length, extending up the Nile valley, and containing 38,000 million cubic feet of water. The chief object of this great reservoir is to enable perennial irrigation to be substituted in upper Egypt in place of the basin system of watering the land through the Nile flood only—that is, to enable two crops to be grown every year instead of one, and cotton and sugar cane to take the place of wheat and barley. It is expected that these works on the Nile will be finished in 1908. There will then have been spent on the great dam at Assuan, the minor one at Assuit, and the new canals of distribution in upper Egypt about £6,500,000, or about $31,525,000.

Not only will this undertaking have a far-reaching effect upon the agriculture of the country, the methods of cropping and the handling of water, but it is calculated that it will increase the land rental by over $13,000,000 and its sale value by upward of $130,000,000.

But, in spite of these large enterprises, wells and small reservoirs are employed to a large extent in some countries and have the advantage of placing the control of the water in the hands of the farmer. It was stated that about 13,000,000 acres, or 30% of the lands irrigated in India, are watered by wells. Small reservoirs are also very numerous. In the native State of Mysore there are about 40,000 irrigation reservoirs, or practically three to every 4 square miles, and in southern India no less than 90,000 of these small reservoirs are recorded.

The large volume of water required to be stored for an acre of land is often a matter of surprise to those who have not given the subject attention. Mr. Moncrieff stated that in India the storage of 1,000,000 cubic feet of water does not suffice for more than six or eight acres of rice, while about one-third as much would be required for wheat. He speaks of districts so flat that to store water enough to irrigate an acre requires the drowning of more than an equal area; but as the irrigated acre yields eight or ten times as much as the unirrigated one, the idea is not as impractical as would at first appear. After the storage reservoir has been emptied, it is often possible to raise a good crop on the saturated bed.

Pumping for Irrigation.—Improvement in the means of raising water is one of the most important of recent developments in irrigation. Measured by value, nearly one-tenth of the irrigated products of this country are now grown with water lifted by pumps. In the rice districts of Louisiana one-fourth of the outlay in growing a crop is for pumping; and manifestly the efficiency of the pumping machinery employed, which has been found in our own investigations to vary all the way from 5% to 82%, has much to do with the profits of farming.

(to be continued.)

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THE LAWRENCE-WILLIAMS CO., Cleveland, O.

Agricultural Review.

Los Angeles.

SAN DIMAS LEMON GROWERS.—Pomona Progress, Nov. 9: The annual meeting of the stockholders of the San Dimas Lemon Association was held at the packing house at San Dimas on Saturday. The annual report of the secretary was read; 345 cars of lemons were shipped, which netted the growers 1⅞ cents per pound for all lemons delivered at the packing house. The old board of directors were re-elected as follows: James A. Johnstone, E. W. Hart, L. C. Meredith, E. O. Kennard, C. C. Warren, A. P. Kerckhoff and C. R. Sumner. These later organized by the election of the following officers: E. W. Hart, president; James A. Johnstone, vice-president; Bank of San Dimas, treasurer; Frank Harwood, secretary and manager. P. J. Dreher addressed the growers on the subject of marketing of fruit. The merits of fumigating and spraying called forth lengthy discussion and the sentiment was almost unanimous in favor of fumigation. James A. Johnstone stated that if spraying were continued five years longer the orchards would be destroyed. Spraying was said to be responsible for brown rot and premature dropping of fruit. The report of the secretary showed that the poorest lemons which are delivered at the packing house came from orchards of non-residents.

Sacramento.

ORANGES NOT DISEASED.—Fair Oaks dispatch to Sacramento Union, Nov. 13: The report that has been in print about a new disease among the oranges of this locality is not true. What is now seen had been noticed since the orange tree began to bear, and is due to climatic conditions. Sometimes more decayed fruit is seen than at others. This year the number of oranges is more than double that ever before produced here, and many more have a decayed spot and fall to the ground. The occasional maggot found in the decayed part is not unlike that found in decayed animal substance. This statement is made by the best authority on Fair Oaks oranges. On the other hand, the oranges are better in form and size than ever before, with smooth and soft skin. The culls in former years have run from 20% to 60%, especially the last year's crop. This year the average of culls is 4%, including undersized fruit. Shipping is steadily going on, and olive picking has how begun quite actively. It must be admitted that on many fine tracts there is much fruit, both of the orange and olive, that is inferior and will not sell well. This is due to the lack of water supply during the irrigation season, followed by no rainfall. There will be no difficulty in computing damages on these crops this year. Sufficient summer irrigation will bring good oranges and olives without any rain. Late irrigation has helped some of the fruit, but the size cannot be made up if the early autumn growth has been arrested, as it has been in many cases.

San Diego.

FIGHT DISEASE AMONG LIVE STOCK.—San Diego Union, Nov. 9: The San Diego county board of supervisors has adopted an ordinance which makes it unlawful to ship, drive, transfer, etc., domestic animals afflicted with disease in this county, or to transport any cattle whatever unless the same are accompanied by a certificate from the live stock inspector showing them free from disease. This section, of course, makes it necessary that such an inspector shall be appointed. It is declared that it shall be the duty of the live stock inspector to inspect animals to see if they are free from disease and to quarantine ranches where disease is shown to exist. The owners must report all cases of disease in their herds. It is declared to be unlawful to offer diseased animals for sale or milk or cream which are the product of diseased animals. It is ordered that all cans or other receptacles of milk or cream shall be sterilized and that slaughter houses must be kept clean. It is stipulated that the ordinance shall not apply to cattle transported through the county in cars and which are subjected to State and Federal regulations. Violations of the ordinance are declared to be misdemeanors, with punishment by a fine of not over $500 or imprisonment in the county jail of not over six months, or by both.

LEMONS AND ORANGES.—San Diego Union, Nov. 9: There will be a big output of lemons this year from the orchards of the San Diego Land and Town Co., according to Heman Copeland, manager of the orange and lemon orchards. The fruit is ripening well, and the heavy rains of the last two days have done a wonderful amount of good to the crop. The soil is in splendid condition now, and when the skies clear it will be almost possible to see the fruit changing color. Reports are not so entirely promising for the orange crop. This is an off year for San Diego oranges, droughts of the past year having taken effect at this particular time, and the output will be somewhat short. What there is of the fruit, however, is of good size and is developing well and of good color. The crop here is somewhat later than that of the Riverside section, and there will be no Thanksgiving oranges.

San Joaquin.

BEANS IN DEMAND.—Stockton Independent, Nov. 11: Two or three kinds of beans are in demand at present and the market remains firm. The harvest is about over, although on Roberts island it is said that there are about 6000 sacks not yet threshed. This work is progressing nicely, and it is believed that before the heavy rains the crop will be cleared up without any damage. Thousands of sacks have already been shipped from the islands to Stockton and San Francisco. The yield this year has been especially heavy in pinks and large whites and as high as thirty-five bushels an acre have been secured by growers. A large acreage was planted to pinks and there have been more of them grown than ever in the history of this section. The weather has been most favorable for threshing beans and the farmers have taken advantage of it, but the yield was so large that in many instances they could not begin to finish the work in the usual time, and it will probably be a week or ten days before all of the crop is housed. While there is a big crop, good prices prevail as a rule for most varieties of beans and the growers will make large profits. The demand for all kinds is better than usual and sales are being made at a rapid rate.

POTATOES SHIPPED. — Stockton dispatch to Sacramento Bee, Nov. 11: The biggest shipment of potatoes that ever went East from California left to-day over the Santa Fe route. It consisted of a train of thirty-five cars, containing 9450 sacks of potatoes, the aggregate weight being 1,134,000 pounds. Their destination is Texas, Arkansas and other Missouri river points. The shipment is valued at over $7000 and breaks all previous records.

Santa Barbara.

TREE PLANTING TO BEGIN SOON.—Santa Barbara Press, Nov. 9: Through a lucky stroke, it will be possible to commence work a year ahead of the time expected for the planting of trees on the Santa Barbara watershed in the upper valley of the Santa Ynez. Forester George W. Peavy, who is in charge of the work of the forestry service in Santa Barbara county, heard recently that there was a surplus of pine seedlings at Pasadena, where T. P. Lukens, the pioneer in the reforestation work in this State, has direction of the largest tree planting station in the West. Mr. Peavy, through the proper channels, made application for some of these young trees, and success has attended his efforts. He has been given 30,000 of these seedlings, and will begin work at once on the preliminaries for the transplanting of these pines. It will probably require five or six weeks to complete the necessary survey, and make trails to render accessible the location which has been selected for the experiment. This is a tract of from 2000 to 3000 acres west of the Cold Spring trail on the north slope of the Santa Ynez range, and above the dam site. It is the intention of the government to co-operate with Santa Barbara city in the creation of the natural forest covering for the watershed which is to supply the immense reservoir to be provided by the construction of a dam in the Santa Ynez river basin at an advantageous point known as Gibraltar. All of the work of reforestation to be done during the next few years, at least, will be on territory within the drainage area contiguous and contributory to this reservoir.

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Sierra.

SUGAR BEETS GROWN IN SIERRA COUNTY. — Loyalton special to Sacramento Bee, Nov. 12: W. S. Lewis distributed last spring among the ranchers sugar beet seed, to be used in a practical test of sugar beet growing in this valley. In early October sample beets were collected and forwarded to the Agricultural Experiment Station in Berkeley for analysis. The result of the analysis has just been made public. G. W. Shaw of Berkeley says but five of the thirteen samples sent were fully ripe.

Sonoma.

HOP GROWERS TO MEET.—Santa Rosa dispatch to Sacramento Bee, Nov. 10: An important meeting of the hop growers of Sonoma county will be held in Santa Rosa on Saturday, Nov. 18, under the auspices of the Sonoma County Hop Growers' Association. At the meeting matters relative to the present state of the hop industry and the future prospects will be discussed, and an effort will be made to bring about a plan whereby the growers can sell their hops without the intervention of the middleman. The growers express considerable dissatisfaction at the present condition of prices and other matters. All the hop growers in the county have been invited to be present.

Tulare.

ORANGE SHIPMENTS.—Porterville Enterprise, Nov. 10: Complete report of shipments from Tulare Co., October 28 to November 9, 1905:

FROM PORTERVILLE.

	Oranges.	Lemons.
Porterville Citrus Association	24	13
Zante Citrus Association	2	..
Globe Orange Growers' Packing Co.	..	..
Talbot (Globe)	4	..
Citrus Union	31	1
Totals	61	14

FROM LINDSAY.

Lindsay Fruit Association	..	..
Lindsay Producers' Association	1	..
Lindsay Orange Growers' Ass'n	3	..
Lindsay Citrus Association	5	..
Independent Packing Co.	3	..
John DeMartini	..	..
Citrus Union	22	1
Totals	34	1

FROM EXETER AND LEMON COVE.

Exeter Citrus Association	4	..
Kaweah Lemon Co.	..	19
Citrus Union	47	8
Totals	51	27

TOTAL SHIPMENTS FROM TULARE COUNTY.

	Cars.	Cars.
Porterville	61	14
Lindsay	34	1
Exeter and Lemon Cove	51	27
Totals	146	42

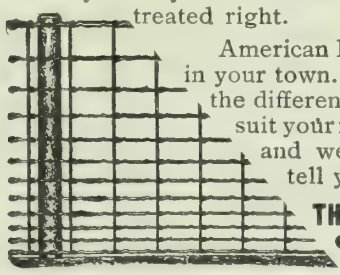
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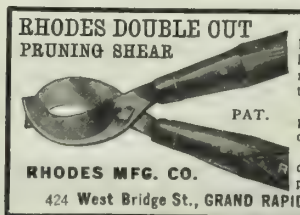
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4-inch screw pipe (2d-hd.), ready for use, 19c

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The Home Circle.

A Thanksgiving Prayer.

In homes that are darksome and dreary,
Where poverty, hunger and cold
Are gnawing the vitals of children
And breaking the hearts of the old,
Where there's never a guest at the table,
Save want and misfortune and care,
In these homes there are notes of Thanksgiving
Today floating out on the air.

For shelter in garret or basement,
For the few scanty pieces of coal,—
For food that we'd think with amazement,
Could scarcely keep body with soul,
That all of the pinched little faces
Are spared—e'en to poverty's curse,
The spirit of gratitude raises
Thanksgiving that life is no worse.

Oh hearts from the bright homes of sunshine,
Reserve to the poor but a share,
Of all that prosperity gives you,
And life will be tenfold more fair.
Dear hearts, from the homes of misfortune,
From poverty, low and obscure,
In return give the wealthy your prayers,
For "blessed are the prayers of the poor."

And the mutual psalm of Thanksgiving,
The incense of gratitude sweet,
Will rise like a vapor to Heaven,
Then shower blessings down at your feet.

A Thanksgiving Turkey.

"Alice! Look out!" But it was too late. Alice had gone too far in her dash after the tennis ball to check herself when she became aware of the turkey in her path, and she tripped and fell while the bird scuttled away scolding volubly in turkey language over the interruption of his meal off the plump chestnuts with which the court was littered. Alice, meanwhile, in language no less wrathful, was calling down maledictions on his offending head and nursing her bruises.

"It's a dirty shame," she sputtered, regardless of feminine proprieties of speech, "that we have to be so tormented by that miserable fowl. I won't put up with it another day for all the Aunt Marias in America. Roy must take his gun and put an end to that gobbler and take it over to Aunt Maria with my compliments. It may teach her to keep her fowls at home and make her realize that other people have some rights even if they do happen to be her relatives."

"There! There! You know you will do nothing of the kind," her sister Mary declared, with exasperating conviction. "If Aunt Maria should show up this minute, not a peep would she hear from you about turkeys."

Silence followed on Alice's part, though her expression denoted uncompromising rebellion.

"It's of no use," continued the philosophic Mary, "to wish that Ma had been an only child. We can't remedy that now. All we can do is to get along as best we may and keep peace in the family."

Having by this time reduced Alice to a proper state of depression over the hopelessness of the situation, she proceeded:

"But," and there was an impressive pause after this connective which caused a gleam of hope to lighten the gloom on her sister's countenance, "I propose to have some returns for all we have put up with this summer from that tramp of a gobbler," and she threw a pebble at the bird which, with mincing, Turveydrop gait and an air of entire unconsciousness of past unpleasantness, was returning to his feast.

"Aunt Maria has been gadding about so much this summer to clubs and domestic science meetings that she has lost all track of her poultry and doesn't know how many turkeys she has or ought to have. Now I propose, inasmuch as that turkey, like the poor, is always with us, waxing fat every day on our chestnuts, that we adopt him and when Thanksgiving day comes—"

She swung an imaginary hatchet with such realistic effect that it was not hard to imagine a turkey's neck beneath a glittering blade.

Alice, visibly cheered, nodded her entire approval of the proposal, promptly forgiving the seeming lack of sympathy from which she had suffered a few minutes before, and without more words the compact was sealed.

It was simply astonishing the proportions to which that turkey attained under even slight encouragement. Nature had given him an ample frame and this he proceeded to pad with layer upon layer of transmogrified chestnuts and grasshoppers. In undisputed possession of the chestnut field he gorged upon the soils, taking no thought of the morrow.

Meanwhile, Thanksgiving day grew near. The air was redolent with appetizing odors issuing from the kitchens of ambitious housewives. But they carried no hint of warning to the pompous turkey who gobbled and strutted and ruffled his plumage in the sunshine of a mild November wholly unconscious of the fate in store for him.

Mary and Alice were well informed, however, and ere this had revealed their intent to their mother. She protested, but what could an indulgent, fun loving mother do with two headstrong girls when her secret sympathies were with them. Of course they had their way, though mother declared she would have nothing to do with the dinner beyond presiding at the tea urn. This was no hindrance to their plans, as both girls were good cooks, especially Alice, who played second fiddle to no one in the kitchen. So preparations went forward merrily in Chestnut Cottage.

How to dispatch the turkey and put a final end to his insolence was the one worry upon the minds of the two conspirators. The only hatchet the cottage could boast was a somewhat rusty tool which displayed a serrate line where the edge should have been, testifying to injudicious use in feminine hands.

"We can never cut with that," judicially remarked Mary.

"Who ever said we could?" Alice retorted, slightly nettled by the challenge in Mary's voice.

"We never could wring his tough neck, either," Mary continued in enumeration of the impossibilities in the path of guilt they had elected to follow.

"There is nothing left but to borrow Aunt Maria's hatchet," she concluded firmly.

"Mary Winchester! Of all the nerve I ever saw yours caps the climax," and Alice tried to assume the scandalized expression she thought the occasion demanded, yet was unable to wholly conceal her admiration of her sister's courage and resources.

"I'm sure we needn't hesitate at that," Mary declared, in the firm tone of one so thoroughly committed that nothing further is to be dreaded.

"Well, anyway," protested Alice, knowing by past experience that it would be Mary's role to command and hers to execute, "I'm not going alone after that hatchet."

A compromise was therefore effected and soon the two girls were walking briskly down the village street enjoying, in spite of their mission, the tingle of the crisp autumn air and the scent of the dry leaves which rustled around their feet.

From Aunt Maria they received their usual cordial welcome, for she was very fond of her two pretty nieces. When she paused to take breath after giving them a resume of her recent doings, Mary the bold, with a hesitation quite foreign to her usual straightforward speech, announced their errand.

"Why, of course you can take the hatchet," their aunt agreed heartily. "Alec has just sharpened it up good. I didn't know you had raised any turkeys this year. My Thanksgiving plans are all upset. You know we have always gone to Silas' on Thanksgiving, but their children have just come down with the measles, so I suppose your uncle and I will have a picked-up dinner here, for I haven't cooked a thing and don't know how I can get time for any extra baking."

The girls exchanged looks, then chorused:

"You'll do nothing of the kind, Aunt Maria. You're coming over to our house. We are to cook the dinner this year and we have loads of things ready now and—and—the biggest turkey you ever saw. The idea of your eating here alone on Thanksgiving day!"

Of course Aunt Maria made the objections and protest that politeness demanded, but was visibly gratified when they were overborne by her impetuous nieces, who presently departed in hilarious spirits not altogether to be accounted for by the prospect of entertaining Aunt Maria and Uncle Alec.

On the way home they stopped at the market to order celery, cranberries and other adjuncts of the feast. Here they found Mrs. Burroughs, the minister's wife, looking much disturbed, and promptly demanded the cause.

"Yes, I am worried," she acknowledged. "I have just discovered that every turkey in stock has been spoken for. I wouldn't care if just ourselves were to be considered, but John (meaning the minister) has invited an old college friend whose home is in New England, to visit us, and what would he think of a Thanksgiving dinner without turkey!"

Aunt Maria's acceptance had revealed to these reckless ones what a good salve hospitality furnishes to an uneasy conscience under some circumstances. This confession of Mrs. Burroughs opened therefore a providential avenue of relief which they did not hesitate to enter.

"How fortunate it is that we met you here!" chirruped Mary. We were on our way to the parsonage to ask you and the domine and the children to dine with us. The turkey we have this year is so much larger than we usually get that we positively must have help in disposing of it. Uncle Alec and Aunt Maria have agreed to come and you must, too."

They were not to be resisted and Mrs. Burroughs finally yielded with manifest relief at being so easily rid of her perplexities. Perhaps she had an eye to the pleasure her guest would have in the society of two such generous, whole-souled girls as these.

That afternoon the doom which had so long threatened the unconscious gobbler descended upon him. Like his many human counterparts, greed had shaped his destiny, and in gaining more than his fellows he lost all.

Mary, in the voluntarily assumed role of executioner, swung the sharp hatchet for a decisive stroke, while Alice, with a pale imitation of her sister's courage, held the victim upon the block. But the blade did not descend, and when Alice's questioning eyes asked the reason Mary confusedly acknowledged a tenderness of heart which had unnerved her for the sacrifice.

"If he wouldn't look at me so I think I could do it," she plaintively explained.

"Why not put a stocking over his head?" suggested Alice, eager to furnish an expedient before her sister should propose an exchange of roles.

And so 'twas done, and the proud gobbler hung limp and unoffending from the woodshed rafters while his life blood drained away.

Now that the worst was over, the girls entered into the final preparations with enthusiasm, and the pantry was made to fairly bulge with its load of pies, cakes and other delicacies.

Thanksgiving day arrived and shone with serene beneficence, as if the dying year would say, "Well done, old earth! Accept my blessing."

The guests came early, with appetites whetted for the royal dinner promised them, and Will Lowe, the minister's guest, as he sniffed the odors which distracted his thoughts from the conversation he was trying to carry on with Aunt Maria, thanked kindly fate for so ordering his steps.

It is needless to speak of the fervent blessing the dinner evoked from the minister, who little dreamed of being an accessory to crime after the fact. It is unnecessary to comment on the tenderness and nutty flavor of the gobbler's flesh or its abundance, which made the two busy and apparently happy girls insist that every guest should be helped twice. But all good things come to an end. At last the serving was done, the minister's children had been dismissed to their games and the grown-ups lingered over the walnuts and coffee.

"I do not believe I ever before tasted a turkey half as good as that one. I want to know just how you fattened and cooked it, Alice," Aunt Maria at length remarked, after a satisfied sigh of repletion had gone around the board. "I want to submit it at the next meeting of the Domestic Science Association."

She could not understand, nor could any one else than their blushing mother, why both girls exploded in mirth, though Mr. Lowe promptly demanded the joke.

"Do you really want to know, Aunt Maria?" Alice finally said, wiping the tears of laughter from her twinkling eyes.

Of course Aunt Maria wanted to know. So did Mr. Lowe, and, encouraged by an expectant audience, and heedless of her mother's silent appeals to stay a confession which would bring them to shame before the minister and his friend, she told the tale. So well did she tell it under the stimulus of Mr. Lowe's admiring gaze that presently all were shouting with her, though the minister looked around to see that his little dears had been beyond earshot of the corrupting narrative.

Aunt Maria dearly loves a good story, and of her enjoyment of this one there could be no doubt. Neither did Mr. Lowe fail to show his appreciation.

All this happened a year ago. This year the same company will dine together, but it is Mrs. Alice Lowe who entertains.—Farmers' Review.

Eye Strain.

An authority on the subject has declared that there is no greater cruelty, no greater crime against humanity, than that of non-recognition and scorn of eye strain. Headache, "sick headache," "dyspepsia," "nervousness," melancholia, insomnia, indescribable suffering—these were some of the more prominent symptoms that, in various mixtures, rendered so miserable the lives of De Quincey, Carlyle, Darwin, Huxley, Browning, Spencer, Wagner and other persons less known to fame.

Eye strain in children should be noticed at once and suitably treated. Many children are met with who blink incessantly, and for this involuntary habit they are often punished by ignorant parents or guardians. The blinking is due to some error or refraction in the eye, and the consequent effort made in accommodation, or, in less technical phrase, focusing on the retina or optic nerve the objects which the child is looking at.

A child kept at near-range ocular work, such as reading, writing, sewing, etc., finds the page become blurred owing to the lens of his eye failing to focus with accuracy. He then blinks and increases his efforts at accommodation, and the letters are again seen clearly. After reading a few more lines the page again becomes blurred, and the blinking process is repeated. It is performed so often in the day that at last it becomes a habit.

It not infrequently happens that a spasmodic closure at the lid is superadded to the winking, and later on the whole face may participate in the act, with the accompanying grimaces peculiar to chorea, or St. Vitus' dance. Thus a habit chorea—which is not the real chorea—is formed, and, although it is often met with, it is seldom treated intelligently. Such patients should be sent to an oculist and no time wasted at first in giving drugs.

Migraine is a painful affliction; sick headache, megrim, hemicrania, nervous headache and billious headache are other names for the same thing. It causes a large number of other symptoms and is itself of a varied type, according to the kind of near work required and the temperament of the patient. Out of one thousand cases of this disease, ninety-nine out of every hundred were cured by spectacles. As one gets older eye strain becomes rarer, hence the frequent disappearance of sick headache at the age of from 50 to 60 years. Seamstresses, typewriters, clerks, students, teachers and mechan-

ics or handicraftsmen who can not stop near range ocular work or limit it without risking starvation, are great sufferers from migraine and all its melancholy miseries. Instead of drugging themselves with dangerous medicines, which in the end make wrecks of their constitutions, all they require to do is to procure a suitable pair of spectacles to correct their eye defects. The cure is so ludicrously simple that it is generally overlooked. In children, especially, all nervous symptoms should excite the suspicion that the eyes may be at fault and lead to their examination by an oculist. Their appropriate treatment may obviate life-long misery.—Atlanta Journal.

Hints to Housekeepers.

Rub kerosene on the zinc under the stove once a day and it will always look bright.

Tea leaves moistened with vinegar remove the discoloration in glass caused by flowers.

Pieces of sponge packed into a mouse hole will induce the rodents to permanently vacate a house.

By covering the bottom of a bureau or chiffonier with a sheet of tin or zinc, protection from mice is secured.

If soot should fall on the carpet cover it with salt before attempting to sweep it up. It will then be removed easily and cleanly.

It is much better not to throw into water immediately spinach, watercresses and lettuce. First shake them well and much of the dirt and bugs will drop off; otherwise if put right into the water all these things will stick and will have to be looked over separately.

The housewife is often troubled by the labels on the tins in her store cupboard coming off and then she has to open tin after tin till she discovers what she wants. The reason is that the labels have been stuck on with ordinary gum or paste. A strong glue for fixing labels to tin is made thus: To a pint of boiling water add one ounce of powdered borax and two ounces of gum shellac and boil all together till dissolved.

Never fold a down quilt in putting it away for the summer. Roll it up rather loosely. If rolled tightly the down will mat. Make a large bag of unbleached muslin in shape like a gigantic bolster cover, sewed up at one end. Put your roll of quilt into this. Secure the open end very firmly. If you want to feel very safe you can put a bit of camphor where your open end is tied together. Unless the quilt contains moth eggs before it is put away this method should keep it perfectly.

Substitutes for napkin rings are oblong envelopes made of good, but not too fine, linen. The shape is an oblong piece of linen, pointed at one end. This can be folded in three, the pointed end forming the flap. The whole is covered with a floral pattern in embroidery. A plain, thin white silk or linen lining is then fitted to the piece of work. Novel additions to the stock of table linen have been introduced from Manila, and are round doilies on a kind of cream grass cloth, very much resembling a fine Irish lawn. The embroidery is light, and the edges are scalloped.

Superfluous hair, that most distressing of all blemishes to a woman, can be entirely removed by a piece of toilet pumice stone. It must be passed firmly but lightly over the skin, care being taken not to chafe it. It is better to do this at bed time, afterward applying a little cream to the parts (without rubbing), which should be left on all night. This is a perfectly harmless remedy, and I hope it will meet the eyes of many who may be tempted to try depilatories, which only promote the growth of hair and too often injure the skin.

Lines and wrinkles can be accounted for. If they come from worry or grief they will remain until the cause is removed. If the worry is not very serious the wrinkles can be effaced with a little care. People who perspire easily do not wrinkle, and generally have a fine, clear skin; it is, therefore, a good thing to induce free perspiration by exercise and hot baths. The face should be steamed, to soften the skin and smooth out the lines; it must then be bathed in cold water. This will act as a tonic and make the flesh firm and pink. A muddy complexion will be greatly benefited by a course of mineral waters. Too much uric acid in the system is responsible very often for a coarse, sallow skin. This may be entirely remedied by taking a dose of Rochelle salts (one to three teaspoonfuls, as necessary), every morning for a few weeks. This treatment is also good for any one with a rheumatic tendency.

Cranberry Pie.

Stew a quart of berries in very little more than a half pint of water. When they become soft rub them through a colander to free them from the skins, then add sugar to taste. Line your pie plates with thin paste, fill them and lay strips of paste across the top. Bake in a moderate oven.

Cranberry Jelly.

Boil a quart of cranberries with just enough water to keep from burning. Strain, add sugar to taste, and again boil till thick, when it can be poured into a mould and set aside till cold enough to turn out. If it will not jell, a quarter teaspoonful of gelatine, soaked soft in cold water, will set it.



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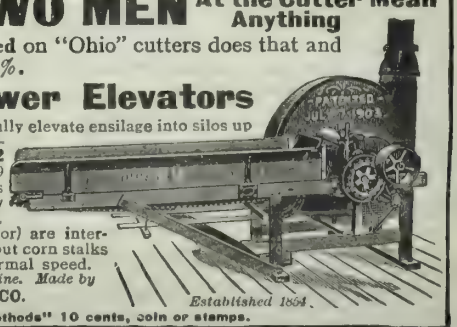
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The Markets.

San Francisco Produce Report.

San Francisco, Nov. 15, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 88⅞@89¼	90¼@90½
Thursday	87¾@87⅞	89 @90½
Friday	86⅝@87⅛	88⅛@88⅜
Saturday	86⅝@86⅞	88 @87⅞
Monday	85 @86⅛	87⅛@88⅛
Tuesday	86⅞@86⅝	88⅛@88¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	46¼@46¾	47 @47⅜
Thursday	46¼@47⅛	46½@47⅜
Friday	44½@45	45⅞@47
Saturday	—@—	—@—
Monday	44 @44¾	44⅞@45¾
Tuesday	44⅜@44⅞	45¼@45½

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 45 @1 45⅝	$1 40¼@1 40½
Thursday	1 43½@1 44	$1 38½@1 38¾
Friday	1 43½@1 43½	$1 39 @1 3 9
Saturday	1 43 @1 43	$1 38½@1 38¼
Monday	1 42½@1 42½	$1 37½@1 37¾
Tuesday	1 43 @1 43	$1 37½@1 37¾

Wheat.

Trading in the local market has been rather quiet, though there is considerable interest attached to the question of futures, owing to the prediction of prominent authorities that the chief center to which Europe must look for her wheat supplies will change shortly from Russia to America. The local market being but a reflex of the big Eastern markets, was for a time quite strong and it looked like a revival of interest in wheat. California wheat raising sections need rain quite badly and unless it comes soon the prospects for the next crop will show no improvement over the last. In the vicinity of Redlands the grain harvest has been completed and reports show a fair crop to have been secured. The total amount of grain threshed in the Redlands district is estimated at 228,100 sacks. Chicago advices say: "Some of the big handlers of cash grain in this market think that enough wheat is headed for Chicago to make liberal receipts to the end of the year, and there are some estimates that there will be as much as 10,000,000 bushels in the local stocks by December 31. This has been the highest market in the West, and a good deal of grain has undoubtedly been sold to come here, although any estimate as to the quantity which will be here at the end of the year is mere conjecture."

California Milling	$1 45 @1 50
Cal. No. 1 shipping	1 40 @1 45
Northern Club	1 40 @1 42½
Northern Bluestem	1 45 @1 47½
Northern Red	1 35 @1 37½

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.45⅝@1.45.

Flour.

The local demand continues good and there is just enough demand for export shipment to keep prices firmly at their present level. The difficulty which is being experienced in securing Northern wheat cargoes is also something of a factor in the flour market. Several vessels have sailed from Northern ports during the current week with cargoes of wheat for Japan. Many California millers are now grinding exclusively on Northern wheat, and the quality of the flour turned out makes a very fine baker's grade. Some mills are using a blend of California and Northern wheat which seems to give excellent results. The boycott situation in China does not improve so rapidly as some of the more sanguine had hoped it would. Barring one or two small shipments, there have been no exportations of flour to China since last June.

Superfine, lower grades	$3 05 @3 30
Superfine, good to choice	3 30 @3 55
Country grades, extras	4 05 @4 30
Choice and extra choice	4 30 @4 80
Fancy brands, jobbing	4 80 @5 00
Oregon, Bakers' extra	3 75 @4 25
Washington, Bakers' extra	3 75 @4 40

Barley.

Heavier receipts of barley have had a tendency to deflect the course of prices, and a slight decline is noted. Buyers predict, however, that prices will be back to their former level next week. They say that the talk that there are some longs out with heavy holdings is all a myth, and that there is actually very little barley in the market. Considerable trading has been done on the decline, and good bright lots of feed barley have brought advances from time to time over these quotations, though they represent the fair average price at this writing. Off-grade barley is being neglected and is moving rather slowly at these figures. Trading in futures has been fairly brisk, and values have been better sustained than were spot values. December barley is now selling on 'Change at figures ranging around $1.18 per cental. The trade is now getting out of December and into May. A trading market is looked for during the coming week.

Feed, No. 1 good to choice spot	$1 17½@1 20
Feed, fair to good	1 13 @1 15
Chevalier, No. 1 to choice	1 30 @1 35
Chevalier, common to fair	1 15 @1 25

Oats.

The oat market is holding steady at about top prices. White oats are in good demand and selling readily at quotations. Northern oat prices continue to advance, and it is probable that an extremely high level will be reached before the close of the year. The black oats now held in the local market are not of a very good quality and the receipts do not promise well as to quantity. A good choice lot of either black or red seed oats will easily bring the top quotations, but the off grades are moving rather slowly at much lower prices.

White oats	$1 42½@1 45
Black oats	— @1 75
Red, choice new	1 35 @1 60
Red, fair	1 20 @1 30

Corn

Arrivals from the West have been light during the past week, but there seems to be plenty on hand to supply the demand. Millers are holding off for the new crop, which will doubtless be sold at lower prices. However, should any especial export demand spring up, present stocks would quickly be exhausted. Large white is selling slowly. The small round variety is plentiful and shows a decline. Both white and brown Egyptian corn are moving rather slowly at appearing quotations. It is said that very little interest was displayed all over the country in the semi-annual report of the Government made last week on the stocks of old corn in farmers' hands. The excellence of the new crop makes the old corn in small demand unless quoted at the same price as that asked for new. It is probable, therefore, that the old corn will come to market with the new, melting into the new crop in a way that will make it impossible for anybody to tell how nearly the old supply is cleaned up.

Large White, good to choice	$1 35 @1 37½
Large Yellow	1 37½@1 40
Small Yellow	1 50 @1 55
Egyptian White	1 37½@1 40
Egyptian Brown	1 22½@1 25

Rye.

Local millers have good-sized stocks of rye on hand and do not seem disposed to attempt to handle more than sufficient to insure them against running short, as they are mainly of the opinion that prices will be considerably lower before they are any higher. Receipts have been very light, being mostly from Utah and containing very little which would bring the top quotation of $1.50. In fact, this quotation is only for the strictly choice grades.

Good to choice	$1 45 @1 50

Buckwheat.

Receipts have been heavier the past few days and consequently prices have been depressed. The outside figure now paid is $1.75 and millers are talking $1.50.

Good to choice	1 50 @1 75

Beans.

Limas have attracted a good deal of attention during the past few days, as a marked advance has taken place in price at primary points. The market to-day may be considered $3.75. In the South a still further advance is talked of. Shipments have been exceptionally heavy during the past six weeks, and consequently a large amount of the crop has already been absorbed. Some estimates have placed the total crop this year at 800,000 bags, with estimates of only about 200,000 bags remaining in growers' hands. This difference of 600,000 bags has not already been shipped, but, if these estimates are correct, that part of the crop has been purchased from the growers. Jobbers on the street are now asking $3.85 to $4 per cental for limas. Small whites are quiet, but large whites are being firmly held. The condition on bayos and blackeyes is strong, while pinks are changing hands at figures around $1.75.

Small White, good to choice	$2 75 @2 85
Large White	2 00 @2 40
Pinks	1 75 @1 90
Pinks, damaged	1 00 @1 25
Bayos, good to choice	— @3 60
Red Kidneys	3 00 @3 50
Reds	3 00 @3 10
Limas, good to choice	3 75 @3 85
Black-eye Beans	4 50 @4 60

Dried Peas.

There is little change in the local market for dried peas. The strength of the market seems to rather astonish some of the milling concerns, who had been expecting to secure stock at a figure around $1.50. There has been a good local demand and the rising Eastern market has also assisted in making the situation here a very strong one. Most of the arrivals are from Humboldt county, and so far they have contained very little stock which was not of more than average quality. Very few Salinas peas have shown up in this market this year.

Green Peas, California	$2 25 @2 40
Niles	1 90 @2 10

Hops.

The situation remains practically unchanged so far as jobbers here are concerned. They are still unwilling to pay more than 7c to 9c for hops and are buying at these figures only in sufficient quantities to cover deliveries. Local concerns claim that they are having no difficulty in securing plenty of hops at these figures. The Sonoma County Hop Growers' Exchange was organized Saturday afternoon at a largely attended meeting of growers. The principal object of the organization is to deal direct with the brewers without paying a commission to the middlemen and promote better prices generally. Over forty growers signed the memebrship roll. Another meeting will be held next Saturday. This would indicate that growers do not concur with jobbers in the opinion that, owing to enormous crops this year and overproduction last year, prices will go even lower than they are at present and that the bulk of the crop will be sold at a figure under 10c.

Good to choice 1905 crop	7 @ 10

Wool.

The prevailing opinion among wool jobbers on this Coast is that growers are holding their wools too high and that unless they modify their ideas somewhat they will come into competition with Australian wools landed here. Eastern operators are thoroughly conversant with the situation here and they express the opinion that growers are looking for prices which are entirely too high. A small amount of trading was done during the current week at appearing quotations for fall wools.

FALL	
Humboldt and Mendocino	15 @16½
Northern, free	14½@16
Northern, defective	12 @14
Middle County, free	14 @16
Middle County, defective	12 @14
San Joaquin and Southern, free	10 @14
San Joaquin and Southern, defective	9 @11
SPRING.	
Oregon, valley	23 @25
Eastern Oregon	15 @17
Nevada	16 @20

Hay and Straw.

Arrivals of hay at San Francisco are heavier this week, the total amonnting to 2950 tons, as compared with 2600 tons last week. The continued dry weather causes a growing uneasiness, and unless rain comes soon, hay prices will undoubtedly be marked up. The San Francisco Hay Association reports that there is now in San Francisco and in the tributary country 157,000 tons of hay available for this market, as compared with 142,000 tons a year ago. The daily consumption in San Francisco is estimated at 500 tons. There is no export business.

Wheat, choice	$14 00 @ 16 50
Wheat, other grades	8 00 @ 13 50
Wheat and Oat	9 00 @ 12 50
Tame Oat, fair to choice	8 00 @ 12 00
Wild Oat	6 00 @ 9 00
Barley	7 00 @ 9 50
Clover	6 00 @ 9 00
Alfalfa	6 00 @ 9 50
Stock hay	5 50 @ 7 00
Compressed	10 00 @ 13 00
Straw, ₱ bale	35 @ 55

Millstuffs.

The market for millstuffs is ruling steady with the only exception being rolled barley, which shows a decline of 50c per ton in sympathy with the weaker feeling in the barley market. Bran is plentiful at the moment, but prices are being well maintained.

Alfalfa Meal, ₱ ton	$18 00 @ 20 00
Bran, ₱ ton	23 50 @ 24 00
Middlings	28 00 @ 30 00
Shorts, Oregon	23 00 @ 24 00
Barley, Rolled, choice	25 50 @ 26 00
Cornmeal	30 50 @ 31 00
Cracked Corn	31 00 @ —
Oilcake Meal	— @ —
Cocoanut cake or meal	21 00 @ 22 00

Seeds.

The seed market is well supplied with all kinds of seeds and prices on all varieties are being well maintained. A good rain would doubtless cause an advance on some varieties. Flax seed is nominal.

Alfalfa	$13 00 @14 00
Flax	— @ —
Mustard, Yellow	3 25 @ 3 50
Mustard, Trieste	4 25 @ 4 50
	Per lb.
Canary	6¼@—
Rape	2½@ 3
Hemp	3¾@ 4
Timothy	5½@ 6

Honey.

The situation remains about as reported before, with very little disposition on the part of dealers to stock up at the present prices. The regular handlers of honey are now busy with other lines and for that reason honey is being neglected. The present asking price is not attractive enough to induce buying from a speculative point of view.

Extracted, Water White	4¾@ 5
Extracted, White	4½@ 4¾
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	8 @ 9
Amber Comb	6 @ 7

Beeswax.

Receipts continue to cover the wants of the trade and prices are being firmly held as quoted. Dark wax sells slowly at quotations, owing to the large amount of choice stock purchasable.

Good to choice, light ₱ lb	26 @27
Dark	24 @25

Live Stock and Meats.

The live stock and meat market has firmed somewhat during the week. The advances are mainly on sheep and lambs. Veal is also firmer in price and beef is steady. It is probable that the extremely high price reached by eggs is limiting consumption and creating a better demand for meats.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4¾@ 5½
Beef, 2nd quality	4 @ 4½
Beef, 3rd quality	3 @ 4
Mutton—ewes, 8@9c; wethers	9½@10
Hogs, hard grain, 150 to 250 lbs	5⅝@—
Hogs, large, hard, over 250 pounds	5⅜@—
Hogs, small, fat, under 150 lbs	5⅝@—
Veal, large, ₱ lb	5½@ 7
Veal, small, ₱ lb	6 @ 8½
Lamb, spring, ₱ lb	9 @10

Hides, Skins and Tallow.

The quality of hides now coming into San Francisco shows a falling off, and as the supply is ample for all demands, it is expected that prices will soon begin to recede a little. As yet, however, everything is still held at former quotations, and dealers report that there are no accumulations.

Bags and Bagging.

The situation remains practically unchanged. The season when any considerable demand for bags might be expected has closed, and beyond the regular small demand there is no particular activity. Dealers report that this year their stocks were cleaned up better on all varieties than for some time heretofore.

Bean Bags	$ 6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7¼@7¾
Fruit Sacks, jute, as to quality	6½@7¼
Grain Bags, Calcutta, 22x36, spot	7⅛@7¾
Wool Sacks, 4-lb	33 @ 34
Wool Sacks, 3¼lb	30 @ 31

Poultry.

The market seems to have a slightly better feeling, but cannot be considered as steady or likely to advance unless receipts of Eastern poultry drop off. If no more Eastern arrives this week an advance may be looked for, while on the other hand should Eastern arrivals continue prices will undoubtedly shade off again. Although there is a good inquiry for turkeys and some of the larger retailers are already buying, there is not that feeling of assurance so necessary to a steady and high market. Both live and dressed turkeys are lower to-day than a week ago. The question puzzling most dealers is will the market remain low or will it advance 3c or 4c a pound. The common belief is that it will advance.

Turkeys, choice Young, ₱ lb	$ 20 @ 22
Turkeys, live gobblers, ₱ lb	20 @ 22
Turkeys, live hens ₱ lb	20 @ 22
Hens, California, ₱ dozen	4 00 @ 4 50
Hens, large	5 50 @ 6 50
Roosters, old	4 50 @ 5 00
Roosters, young (full-grown)	5 00 @ 6 00
Fryers	4 50 @ 5 00
Broilers, large	3 50 @ 4 00
Broilers, small to medium	2 00 @ 2 50
Ducks, old, ₱ dozen	4 00 @ 5 00
Ducks, young, ₱ dozen	4 00 @ 6 00
Geese, ₱ pair	2 00 @ 2 25
Goslings, ₱ pair	2 00 @ 2 50
Pigeons, old, ₱ dozen	1 00 @ 1 25
Pigeons, young	2 00 @ 2 25

Butter.

The butter market is temporarily a shade weaker than last week, but this condition will not continue, say the dealers. This condition applies mainly to the extra and choice stock, which has suffered from the large amount of storage stock which has flooded the market lately.

Creamery, extras, ₱ lb	25½@26
Creamery, firsts	— @25
Creamery, seconds	20 @24
Dairy, select	20 @25
Dairy, firsts	22 @—
Dairy, seconds	20 @—
California storage	24 @25
Mixed Store	— @20

Cheese.

The market on cheese is stronger. Prices on nearly all grades have advanced from ½c to 1c, with an especially good request for new fancy flat California and Eastern cheese.

California, fancy flat, new	12½@14

California, good to choice	—	@12½
California, fair to good	10	@12
California, "Young Americas"	12	@14
Eastern, new	16	@17

Eggs.

The advance in the price of eggs continues. California select large white and fresh stock is now bringing 51c, while other grades are correspondingly high and in good demand.

California, select, large, white and fresh.	48	@51
California, select, irregular color & size.	—	@46
California, good to choice store	25	@31
Eastern firsts	23	@26
Eastern seconds	20	@21

Potatoes.

The potato market continues to advance and has almost reached the sensational stage. Growers are jubilant over the fact that this year's crop—one of the largest on record—is bringing the highest prices ever paid at this time in the year. River Burbanks are selling at $1 per cental, which is nearer the price usually paid for Salinas Burbanks. The enormous shipping demand is largely accountable for the strong situation. The biggest shipment of potatoes that ever went East from California left yesterday over the Santa Fe route. It consisted of a solid train of thirty-five cars, containing 9450 sacks of potatoes, the aggregate weight being 1,134,000 pounds. Their destination is Texas, Arkansas and Missouri river points. The shipment is valued at over $7000, and breaks all previous records.

River Burbanks, ₱ cental	85	@	1 00
Salinas Burbanks	1 25	@	1 35
Oregon Burbanks	1 10	@	1 15
Tomales	80	@	90
Sweet Potatoes	1 60	@	1 85

Vegetables.

There is a good demand for all kinds of vegetables now appearing in the local market. Prices on nearly all varieties have advanced and many kinds are not to be had now at any price. Last week saw the end of the green corn crop and the last of the green lima beans practically cleaned up. There may be one or two scattered lots, but they are very scarce and are unquotable. Onions are ruling firmer owing to a good demand for both export and local shipment. Peppers are very high, bell peppers selling at $1.50 and green peppers at $1.25 per box.

Beans, String, ₱ lb	6	@	7
Cabbage, choice garden, ₱ 100 lbs	65	@	75
Egg Plant, ₱ box	60	@	70
Garlic, ₱ lb	4½	@	6
Onions, New Yellow Danvers, ₱ ctl.	1 10	@	1 25
Onions, Australian Brown, ₱ ctl	1 15	@	1 30
Peas, Green, ₱ lb	6	@	8
Peppers, Bell, ₱ box	1 50	@	—
Peppers, Green, ₱ box	1 25	@	—
Tomatoes, ₱ box or crate	15	@	65
Artichokes, ₱ doz	15	@	60

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

So many California and other Western apples have been dried this year and sold to the packers and so much of the crop was shipped to the Eastern market that prices here are very high and the fruit extremely scarce. All the other varieties of deciduous fruits are in good demand and prices have in nearly every case advanced owing to short supplies. Grapes especially are firmer in price, large boxes being quoted at $2. No more plums of any variety are to be had and only one kind of strawberries, viz., the large varieties now appearing in the market.

Apples, choice to select, ₱ 50-lb box	1 00	@	1 50
Apples, good to choice, ₱ 50-lb. box	75	@	1 00
Apples, fair to good, ₱ 40-lb box	50	@	75
Figs, ₱ two layer	85	@	1 00
Grapes, Tokay, large box	1 50	@	2 00
Grapes, Tokay, ₱ crate	1 10	@	1 25
Grapes, Muscat, large box	1 75	@	2 00
Grapes, Muscat, ₱ crate	1 10	@	2 00
Grapes, Black, large box	1 50	@	2 00
Grapes, Black, ₱ crate	1 10	@	1 25
Huckleberries, ₱ lb	7	@	8
Plums, Late Coes Red, ₱ crate	60	@	85
Raspberries, ₱ chest	8 00	@	10 00
Strawberries, large var., ₱ chest	5 00	@	6 00
Whortleberries, ₱ lb	9	@	10

Dried Fruits.

The prune market is at the moment in a fairly active state. A prominent representative of packers' interests reports that during the past week most of the prunes left in growers' hands were taken by the packers. He says: "Not in many years have stocks been so well cleaned out of growers so early in the year as at the present time." Apples remain firm, the strong Eastern situation being reflected in the local market. Other kinds of dried fruits are ruling steady at quotations.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice		—	@ 7¾
Apples, extra choice to fancy, 50-lb boxes.	8	@	9
Apricots, Royal, good to choice, ₱ lb	6½	@	7
Apricots, Royal, fancy	7½	@	8
Figs, 10-lb box, 1-lb cartons	55	@	62½
Nectarines, White and Stanwick, ₱ lb	7	@	7½
Nectarines, red, ₱ lb		—	@ 6
Peaches, unpeeled, good to choice	7	@	7½
Peaches, unpeeled, fancy to extra fancy	7½	@	8
Pears, standard, ₱ lb	7	@	7½
Pears, choice to fancy	8	@	10
Plums, Black, pitted	5	@	6
Plums, Red, pitted	6	@	7½
Plums, Yellow, pitted	5½	@	7½
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 4¾@5c; 50-60s, 4@4¼c; 60-70s, 3½@3¾c; 70-80s, 3@3¼c; 80-90s, 2½@2¾c; 90-100s, 2¼@2½c; small, 2@2¼c.

COMMON SUN-DRIED.

Apples, sliced	4½	@	5
Apples, quartered	4½	@	4¾
Figs, White, in bulk	2	@	2½
Figs, Black	2	@	2½

Raisins.

Locally the situation remains much the same as it has been since the Growers' Association discontinued the tentative reduction made in prices several days ago. Dealers here do not seem inclined to take hold of association raisins at 8c when outside raisins can be procured at a 7c basis. The Eastern situation is much the same in regard to buying as that in existence here. Jobbers in the East are now seeding old raisins, and it is claimed that stocks will be almost sufficient to supply the holiday demand. One New York concern has a capacity for turning out six carloads per day, and one in Philadelphia claims to be able to send two carloads daily. If this be the case, and if they have enough old stock and can secure enough foreign stock to supply the demand during the month of December and the latter part of November, the Growers' Association will be compelled to modify its prices somewhat.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40	@	—
London Layers, 3-crown, 20-lb box	1 50	@	—
Fancy Clusters, 4-crown, 20-lb box	2 00	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	3 00	@	—
2-Crown Standard loose Muscatel	5¾	@	—c
3-Crown Standard	6	@	—c
4-Crown Standard	6½	@	—c
Seedless Thompsons, 50-lb boxes	6½	@	—c
Seedless Sultanas	5	@	—c
Fancy, 16-oz. Seeded	8¼	@	—c
Choice, 16-oz. Seeded	8		c
Fancy, 12-oz. Seeded	6⅝		c
Choice, 12-oz. Seeded	6⅜		c

Citrus Fruits.

Navel oranges are now arriving freely and Valencias are practically out of the market. Three grades of navels are now being quoted and show a range of from $1.25 to $2.75. Seedlings are also coming in and are selling at $1 to $1.50 per box according to quality. Lemons are firmer, and limes and grape fruit remain steady at former quotations.

Oranges, fancy	2 25	@	2 75
Oranges, choice	1 75	@	2 25
Oranges, standard	1 25	@	1 50
Oranges, Seedlings	1 00	@	1 50
Lemons, California, fancy, ₱ box	2 75	@	3 50
Lemons, California, good to choice	1 75	@	2 25
Lemons, California, fair to good	1 00	@	1 25
Grape Fruit, ₱ box	2 00	@	3 00
Limes, ₱ box	3 50	@	4 00

Nuts.

The Almond market continues generally dull, with stocks in the hands of dealers ample to supply all requirements for some time to come. There is, however, a great shortage of walnuts, and people who have contracted for walnuts from the various growers' associations are clamoring for deliveries, with small prospect of their being made fast enough to prevent a walnut famine. The following prices represent the ideas of dealers in this market:

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ₱ lb	11	@	12
Almonds, Ne Plus Ultra, ₱ lb	11	@	12
Almonds, Nonpareil, ₱ lb	11	@	13
Almonds, Languedoc, ₱ lb	7½	@	—
Almonds, Golden State, ₱ lb	7	@	—
Hard Shell, ₱ lb	5	@	—

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That is what investments in stock in SMITHS' CASH STORE are paying **in earnings and discounts** on purchases. You are not reading a fabulous prophecy of what may happen if—. This is a story of what is happening right now. A guarantee that the earnings shall not be less than six per cent a year goes with each share of stock.

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very shortly. This may be your last chance to buy stock in this big Cash Store at $10.00 a share. When you consider that your stock will pay for itself from the money you save on household necessities alone, you must realize the profit of this investment. Hundreds of new customers are buying here every month. The reputation of this big money saving Cash Store is reaching every part of the West. Take advantage of this opportunity to share its prosperity and become a partner now. If you know what a big thing this is and you want to get into it, just make draft, check or money order payable to Smiths' Cash Store, Inc., or Harper A. Smith, President. If you would like to know more of the Cash Store, call and see us or mail this coupon to-day—it in no way obligates you.

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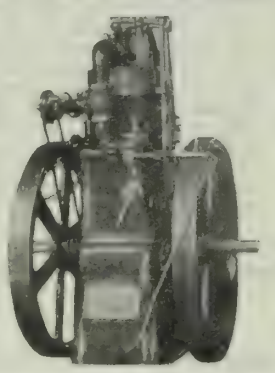
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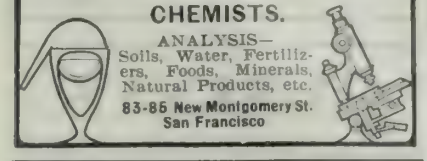
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THE DAIRY.

San Francisco Standards for Dairy Products.

There is a new Dairy Exchange in San Francisco now in good working order under the presidency of Mr. W. H. Roussel, who is well known from the prominent place he has occupied in the trade for many years. Many of our dairy and poultry readers will be interested in the rules just adopted by the Dairy Exchange for the classification and grading of butter, eggs and cheese.

BUTTER.—The classes of butter are as follows: First—Fresh, which is butter that is made and packed in creamery or dairy from fresh cream. Second—Sweet butter, or unsalted. Third—Sweet cream butter—made from unripened cream. Fourth—Ladles, or butter made by mixing and reworking different lots of butter so as to secure a uniform product.

The grades of butter are determined by score and certain requirements as flavor, body, salt, color and package. Space does not permit giving these in full. The different grades are: Extras—Score shall average 93 points or better for creamery or dairy. Firsts—This is the grade just below extras, scoring 87 points or better. Seconds—A grade just below firsts, and score must be 80 points or better. Thirds—Thirds shall consist of a grade just below seconds; score must average 70 points or better. Fourths—Fourths shall be a grade below thirds and may consist of promiscuous lots. Grease butter shall consist of all grades of poor or rancid stock below fourths free from adulteration. Ladles are divided into three grades—extras, firsts and seconds. Packing stock shall be original butter, without additional moisture or salt, sweet and sound, packed in large, new barrels. There are three grades of packing stock—Nos. 1, 2 and 3.

The basis for points for scoring of butter is as follows: Flavor 40, body 30, color 15, salt 10, package and packing 5.

EGGS.—Eggs shall be classed as follows: California ranch, California store, Eastern, and shall be graded as follows: California—Selected, firsts, seconds and thirds. Eastern—Selected, firsts and seconds.

Fresh California selected shall come up to the following requirements: Color, entirely white, and clean; size, large and uniform; quality, good, sound, sweet and full.

California firsts may be of mixed colors, but clean, large and uniform; 85% must be good, sound, sweet and full.

California seconds must be clean, but may be irregular in size and color; 70% must be good quality.

California thirds shall include dirties, checks, washed eggs, pullet's eggs, and 50% must be reasonably full, sweet eggs.

Fresh Eastern selected may be irregular in color, but clean; large uniform size; 90% fresh, sound, sweet and full.

Eastern firsts must be clean; may be irregular in color, but large and uniform in size; 85% must be fresh, sound, full and sweet.

Eastern seconds shall include dirties, checks, small, irregular color and size, and 50% must be reasonably full, sweet eggs.

CHEESE.—The classes of cheese shall be: Flats, 22 to 25 pounds in weight; Young Americas, 5 to 8 pounds in weight. This cheese shall be offered under designation of California new cheese, California held cheese and California refrigerator.

Fancy shall be the highest grade of cheese, and for the purposes of inspection flavor shall be mild, clean, full and quick; make, sound; rind, good texture, reasonably close; color, uniform, full straw color; appearance, bright, clean, regular shape and even surface.

Firsts differ from fancy in that the flavor need not be full and quick. Otherwise it shall be the same as fancy.

Seconds shall be good, useful stock, mild and fairly clean in flavor; fairly well made, color and salt irregular.

Thirds constitute all grades below seconds, including all defective, gassy cheese, etc.

Eastern cheese includes Cheddars (60–65 pounds), Twins (35 pounds, two in a drum), Singles (35 pounds, packed one in a drum), Daisies (20–25 pounds), Longhorns (10–12 pounds, four in a drum), Young Americas (6–8 pounds, three or more in a drum). The grades are the same as for California cheese.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the PACIFIC RURAL PRESS by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

COWS.

Half Mourning, R. M. Hotaling, Thomas Pollard, San Francisco.

BULLS.

Young Piebe De Kol Burke, J. H. Williams, John T. Smith, Tulare.

SALE REPORTED BY PIERCE LAND & STOCK CO.

One of the most important recent sales was the great bull, Fidessa Korndyke of Riverside, No. 38,344, to Mr. A. W. Foster, San Francisco, to be placed at the head of his fine herd located in Mendocino county. Fidessa Korndyke of Riverside is a son of the great cow, Fidessa, who has a 4-year-old record of over 25 pounds in 7 days and 91 pounds 5 ounces butter in 30 consecutive days and 170 pounds 1 ounce in 60 consecutive days. Fidessa was Sweepstakes and Grand Champion Cow at the California State Fair at Sacramento this year, and the dam of Fidessa Butter Boy whom we sold to Mr. R. M. Hotaling last year to be placed at the head of his great herd of Holsteins. The sire of Fidessa Korndyke of Riverside was Beryl Wayne Korndyke of Riverside, whose dam, both grand-dams and two great-grand-dams all have official butter records averaging over 25½ pounds each in 7 days, and in this respect the sire of Mr. Foster's son of Fidessa has no equal in all America's dairy world.

The Worm Pest.

Hogs will begin to cough, drag hind parts, go off their feed, and do no good if wormy. Horses no better. Use Security Worm Powder. **Guaranteed.** Dealers everywhere.

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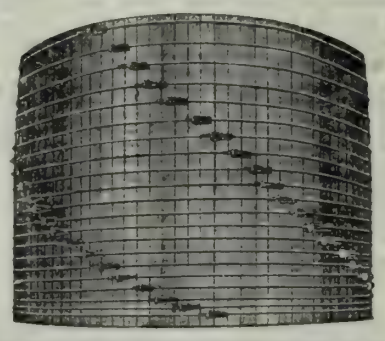
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THE SWINE YARD.

Home Slaughtering of Hogs.

Although California farmers do not do as much home butchering as the farmers in the older States, because they do not practice mixed farming as much as they, still hints of how to do it may be helpful to some readers. Colon C. Lillie of Michigan gives the Orange Judd Farmer some very definite suggestions:

The Art of Butchering.—The art of slaughtering and dressing hogs for market is one easily acquired. In pioneer days every farmer and farmer's boy understood this business and could do it handily. Later years, however, many of the younger farmers have not taken pains to acquire the art, and, consequently, they are compelled to sell their hogs many times at a lower price.

A hog pen is not complete without a slaughtering room. There should be one room suitably arranged so that hogs could be scalded and dressed to some advantage. The equipment need not be elaborate. For the purpose of heating water it is very convenient to have a small agricultural boiler with a short steam hose. For scalding it is better to have a trough of the proper dimensions to hold a good-sized hog, then a platform on which to lay them when the hair is being removed is practically all that is necessary. The butchering can be done with practically none of these conveniences. The water can be heated in a common cauldron kettle out of doors. The platform can be a temporary one placed upon benches for the purpose, and the hogs can be strung upon a pole or a number of poles. This is a very common practice in Michigan and surrounding States.

Instead of sticking the hog out of doors, so that the blood is spattered over everything and lost, it is much better to do this job in a pen with a cement floor, which is heavily bedded with straw or horse manure. There is not as much labor involved in catching the hog, and the absorbents will save all the blood, so that the farmer gets the full benefit of the blood for fertilizer when these absorbents are scattered upon his fields.

In sticking the hog, care should be taken to run the knife straight in, so as to sever one of the jugular veins. If the point is allowed to project sidewise, it is apt to penetrate the shoulder and leave a blood clot there, which destroys its value largely. One does not need a long knife for this purpose, as there is no necessity of penetrating into the vital organs. Simply sever the jugular veins.

Have the Water Just Right.—In scalding the hog some experience comes in play in getting the water just the right temperature. The practical man pays no attention to a thermometer. He does by his sense of feeling. He has learned by experience that water can be too hot as well as too cold. As a matter of fact, if the water is too hot and the hair is "set," harm has been done which cannot be remedied, while if the water is too cold, no harm is done, and the water can then be raised to the proper temperature. A little experience is really better than a thermometer here. A successful scald is the all-important thing in properly dressing the hog. If this operation has been successful, the hair can be removed with a common candlestick scraper with very little difficulty. With a poor scald, one has to resort to the practice of shaving, which is not desirable.

After the hair has been removed from the hog, it should then be thoroughly washed to remove all dirt. The operation of removing the intestines is one that can hardly be explained on paper. One should receive an object lesson in the part before attempting to do it.

The Time of Year to Butcher.—The custom and practices of people are constantly changing. It was only a few years ago that it was very unusual to butcher a hog in the country except in the fall or during cold weather. Then there is no danger of the meat spoiling. In the fall the hogs were slaughtered and the meat packed, and mess pork and salt pork were consumed during the warmer months. Now, however, mess pork is not very popular, even among farmers themselves. Fresh meat is demanded every day, and hogs must be slaughtered to meet this demand in warm weather as well as in cold. However, farmers and string butchers have no particular difficulty in handling hogs, even in warm weather, but the butchering and marketing must be done during the cool of the day.

A farmer who lives near by a good thriving city can just as well keep posted with regard to the demands of the market, butcher his own hogs at times when the market demands are urgent, and save the middleman's profit for himself.

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It is hoped that the time will never come when the art of the home butchering of swine will become extinct on the average farm. It tends to make the farmer independent in one of his products at least. Of course the same argument does not hold with beef cattle as with hogs, because it requires better facilities for the butchering of beeves and the care of the meat than it does for hogs. The hog is the one meat animal that is close to the people in every way, and one which the meat trust cannot hope to get control over.

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Tulare Grange Meeting.

TO THE EDITOR:—Tulare Grange held its regular meeting on Saturday, Nov. 4. After electing one candidate for the degrees and conferring them on another, the literary programme for the day was taken up—"What State Legislation Is of Most Importance to the Farmers of the State, and What Can We Do to Promote It?"

It was admitted that there are so many subjects of legislation, each of so much importance to the farmers of California, it is hard to single out the one of "most importance." Some of those mentioned were: Legislation providing for a better system of agricultural education, on working lines—schools in locations strictly agricultural, where the surrounding sentiment is in full sympathy with agricultural interests and of a practical agricultural education, and where experiments in scientific agriculture can be carried on which will determine what products are most suited to the several soil and climatic conditions and locations of the State, and for which there is a market demand in that location; legislation which will promote the destruction of noxious animals and insects so destructive of farmers' crops; legislation which will provide a more equitable system of State, county and municipal revenues, and which will relieve farmers from having to pay taxes so greatly burdensome to the farmers and so all out of proportion to the amount of taxes paid by other classes of citizens of equal or greater ability to pay; legislation which will encourage and provide for better co-operative methods for farmers; legislation which will provide for a more equitable, just and economical distribution of the waters of the State, now so essential to intensive and successful agriculture; legislation which will provide co-operative or State insurance against fire and against the exactions of unscrupulous fire insurance combinations. Insurance against fire is a necessity of our civilized condition of society. All property should be insured so that unavoidable misfortune may not be disastrous to the sufferer; in this way all losses will be mutual, and funds to pay losses should be at the lowest assessment rates the loss and the collection will permit. To secure this end, the State should do the insuring. Assessments on insurance should be made at the time assessments for other taxes are made, and collections for insurance losses should, also, be made when other tax collections are made. Insurance against loss by fire should be an incident of our State government. The Grange stands for this principle. When it is adopted in our government, the details of enforcing it will appear.

Some consideration was given to variations in the butter fat yield of milk, which was interesting. It was agreed that cleanliness assisted in getting higher percentages of yield of butter fat.

Under the head of Good of the Order, it was agreed that there should be a larger membership of farmers; that the Order, having, as it has, national, State, county and subordinate organizations, for the purpose of carrying out their definite principles and their interests, as they arise, can do and is doing more than it is possible for any local club or organization to do; that, for these reasons, farmers need the Order of Patrons of Husbandry, and the Order needs every farmer in the State in its ranks. It was agreed that the time is now opportune for extending the Order in this State, and a committee of three was appointed, who drew up and reported resolutions to the officers of the State Grange, urging that efforts should now be made to increase the membership in California. J. T.

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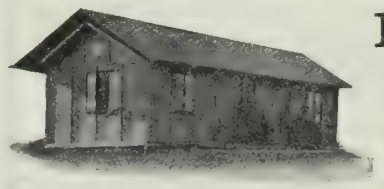
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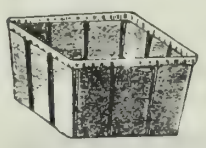
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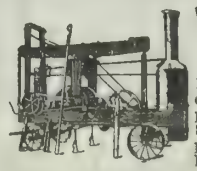
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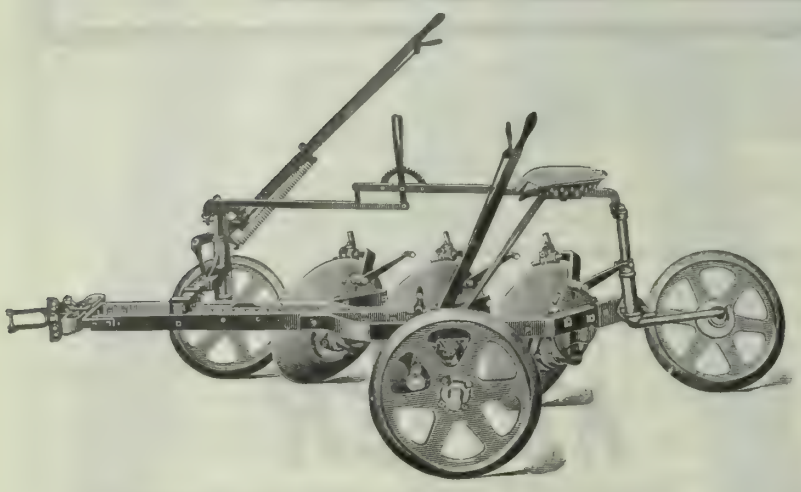
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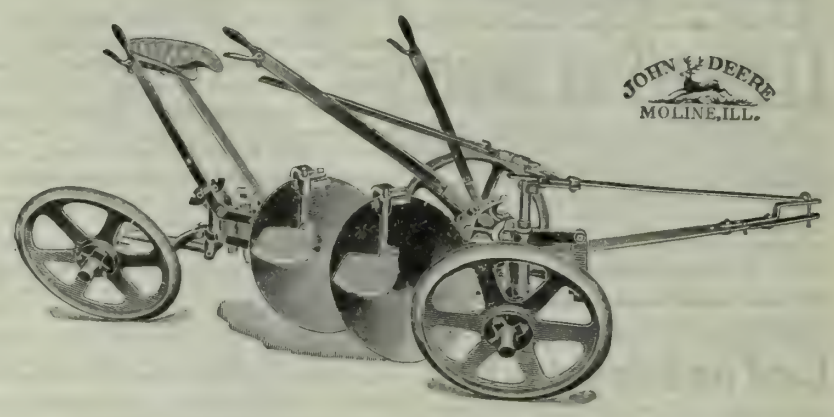
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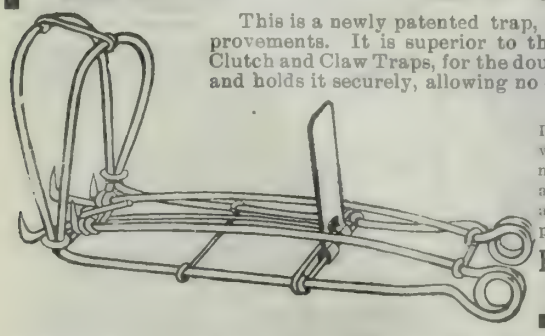
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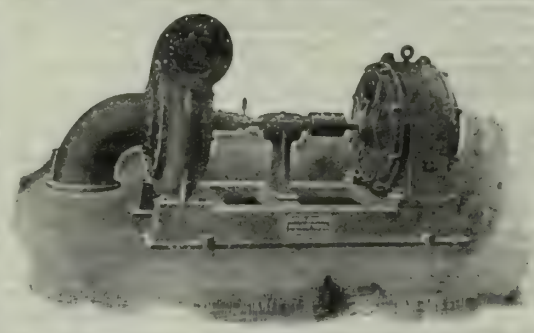
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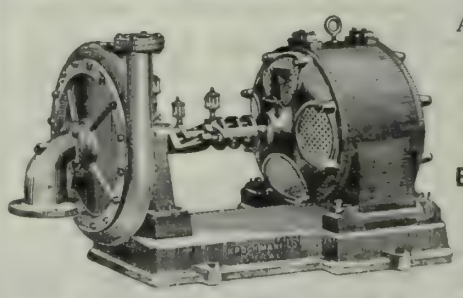
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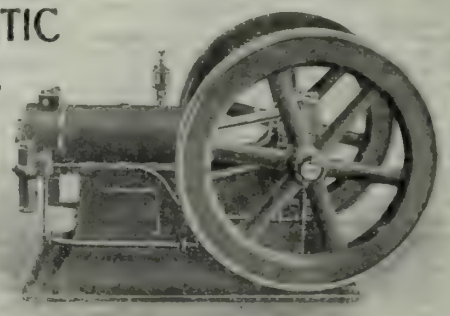
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THE PACIFIC RURAL PRESS
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Vol. LXX. No. 22. SAN FRANCISCO, SATURDAY, NOVEMBER 25, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Lemon Washing.

In the PACIFIC RURAL PRESS of November 4 we had some general remarks upon lemon growing and handling as one of the highest horticultural arts of California, and we illustrated the point by reference to lemon picking at the Limoneira ranch in Ventura county as practiced under supervision of the manager, Mr. C. C. Teague. Last week we had an interesting statement by Mr. Day of Pasadena, showing how easy it is to make mistakes in lemon growing, and, by inference, that it requires much intelligence and effort to succeed. We continue along the same line by reference to other exact operations which successful lemon handling requires. The view on this page shows the washing machine in operation in the Limoneira packing house near Santa Paula.



The Lemon Washer in Operation on the Limoneira Ranch, Santa Paula, Ventura County.

Lemons require washing to cleanse the skin from the impurities which collect upon it during the half year of its growth upon the tree. There is the hard washing which is necessary to dislodge smut where as much rubbing as can be done without breaking the oil cells of the rind is often required. Even where insects depositing honey dew for this smut to grow upon are banished there is on the skin much dust lodged from the cloud which rises from the cultivation of the dry earth surface or which is blown into the trees from adjacent roadways. As the lemons are carefully picked and brought to the storage and packing house they are first given a good bath, and while floating in the water they pass between moving brushes, which remove all foreign matter from the skin. This washing is done at minimum cost and with maximum gentleness with such a machine as is shown in the engraving. The large circular tank is the washer and the lemons are gently rolled from the lug boxes as they come from the orchard into a chute, down which they gently pass into the water. In the center of the tank there is a revolving circular frame clad with brushes, and the movement carries the lemons against the inside of the circumference of the tank, which is also covered with brushes. In this way fruit is pushed and rolled along between brushing surfaces until it reaches the projecting jaws of the tank which are seen on the right near the top. At this point the fruit escapes from the brushes and floats in the still water until it is gently caught up by the slowly revolving fingers which are seen at the top of the machine on the right.

These fingers are covered with leather, so that no hard surface injures the fruit as it is lifted out of the bath. The fruit then rolls down the ways, which are set at the right incline to keep it moving at just the right speed. These ways are subdivided by slats, which have gates at proper distances, so that the fruit can be diverted into the shallow boxes or trays which are seen in the foreground of the picture. These are about deep enough for two layers of lemons. The operators at the side gently spread the fruit as it rolls into these trays, and as a tray is filled the gate is closed and the fruit sent along to another tray. This gives time enough to carry away filled trays and replace them with empty ones. As the fruit comes from the washer it is also possible to pick out bad specimens, as is apparently being done by the two men who are working at the upper end of the grade, opposite the revolving fingers. The whole arrangement gives very speedy and yet gentle washing, rubbing, picking over and spreading in the trays in which the fruit remains during the curing process, which will be described at another time.

It is an interesting fact, as shown by recent investigation by Prof. Smith of the University and his assistants in their work in southern California, that the lemon washer, whose prime object is to clean the fruit, may also contaminate it with germs of decay. A diseased lemon may leave such germs in the bath, or on the brushes, to be deposited upon other lemons as they go by. But this is apparently susceptible of correction, as other experiments now in progress indicate.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, NOVEMBER 25, 1905.

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The Week.

We have had the pleasure of a run through southern California since last week's rain, and the beauty of the country and the delight of the people are just what we hope soon to see in other parts of the State. The Mexican weather system has done for the extreme south what the North Pacific weather system has never done, and that is to bring an early rain in San Diego which is nearly four times greater than the seasonal average, and though the amount rapidly decreased within two counties north, there has been everywhere south of San Fernando tunnel enough rain to start the green and to keep it going for some time—long enough, we hope, to enable the south to catch on to its share of the northern-born storms, to which we are looking for our own refreshment. Everything at the south is active and hopeful, and the outlook for a busy winter could not be better.

Wheat has continued to droop fromthe high perch of two weeks ago, and abundance of northern coast wheat depresses the local situation. Barley holds up well, though supplies are larger, and bright barley brings top prices. Corn and oats are doing well. Rye is a small affair at present. Beans have improved, Limas and large whites scoring a notable advance. Dry peas are high and firmly held. Bran is easier because of free supply from the north. Hay is steady. Meats are quiet and veal doing better. Butter is selling well at old prices; cheese is in light supply and looking upward, while eggs have advanced again. Poultry is doing well and turkeys starting the Thanksgiving season at a high rate. Potatoes are holding up unusually and there is a great shipping prospect. Onions are unchanged. Oranges are lower because of free receipts and lemons high for the opposite reason. Good apples are selling well, but the mass of wormy stock is having a hard time. All kinds of dried fruit except raisins have advanced and visible supplies are very short. Almonds are slow, but walnuts are high and late. Honey is offering at concessions, but buyers not yet active. Hops are selling better, but are still actively talked down by the buying interest. Wool is quiet and local trade small.

Talking of trade, it does appear that producers can do a thing for themselves when they go right at it. And this is the way they do it, according to a New York dispatch received as we go to press on Wednesday:

In five minutes to-day $50,000,000 was added to the market value of this year's cotton crop, which caused a panic among Wall street speculators, who had sold hundreds of thousands of bales they did not own. Joseph H. Hoadley and a syndicate of farmers reaped a fortune in those terrific five minutes, estimated by some authorities to be as much as $8,000,000. Hoadley's personal profit for the five minutes was estimated at more than $1,000,000 by a close personal friend.

This shows that it can be done if growers can hold together against bear pressure, providing the facts warrant such action. In this case the facts were right and the demonstration brought the denouement. The rise was caused by the Government's census bureau report of the amount of cotton ginned up to November 14th. Wall Street has been expecting the report to show at least 8,500,000 bales. The figures were only 7,498,167. Thus the Department of Agriculture made it possible for the farmers to quickly win. Had it not been for such demonstration of fact as to the coming supply, the bears would have probably been able to hang on and tire out the bulls. There is a danger, however, of this experience being given too much weight in exhortations for farmers' combinations. The outcome was the result of strength in combination with knowledge or wisdom. Let it be remembered that this combination cannot be dispensed with.

Fruit growers should not forget the convention at Santa Rosa beginning on December 5th and continuing four days. An exceptionally rich and varied programme has been prepared by Mr. Elwood Cooper, State Horticultural Commissioner, which we received just too late for presentation in this issue. It will appear next week, and meantime let every fruit grower and his wife prepare to attend. Santa Rosa is a delightful little city located in one of the richest counties in the State, and should be better known to the State at large. No doubt opportunity will be afforded to see something of Mr. Burbank's gardens, though the season is, of course, not right for wide observation of his achievements. Mr. Burbank has consented to address the convention, and this fact will add greatly to the attractiveness of the meeting. Many other prominent speakers will also participate, as the programme in our next issue will show.

The California Promotion Committee has done a number of very excellent and effective things, but its latest announcement appeals very strongly to our sense of what is promising. The committee has secured the Academy of Sciences hall, one of the best in the city, and will furnish stereopticon and operator free to the counties taking advantage of the offer. All the expenses of the lectures, which will be free to the public, will be borne by the Promotion Committee, except the individual lecturers representing the various counties, and the slides of the counties. The committee has entered upon a most comprehensive plan of advertising these lectures, not only through the public press, but also by means of cards posted in hotel offices, and in all public places. It is designed by these free lectures to give tourists, homeseekers, and investors an opportunity of learning something about every part of the State. The lectures will be given every afternoon, except Sundays, from 2 to 4, there being four lectures each day. The time will be divided according to the number of counties taking advantage of the chance to show the beauties and adaptations of their localities. If the counties will exercise due judgment in selecting men who understand the pictures and will tell nothing but the truth about them, it will result in wide edification and satisfaction.

California has not grapes enough this year to meet the Eastern demand. The season has been very favorable for late shipping grapes and all available have been sent, but the East wants more. It really looks as though the Eastern fruit demand is a largely expansive affair, for, although we have shipped about 2000 cars more than last year, at better prices than last year, the opportunity to increase still exists.

QUERIES AND REPLIES.

The Tap Root Question in Walnuts.

To the Editor:—I have the following varieties all grown from seed: Bijou, Mayette, Franquette, Chaberte, Parisienne and Santa Barbara softshell. I also have Santa Rosa softshell nursery trees two years old. The Santa Rosa leads by a long way in growth, with Mayette and Bijou next. I cut off the tap root in walnuts in putting out. What do you think of its effect on the bearing of the tree? What effect will the alkali have upon these trees? Rabbits bit them nearly all back at first, taking nearly all the new growth. The sun and north wind caused the leaves to drop a couple of times. Will either of these be apt to prevent future bearing? I am going to put out some Santa Rosa softshell nuts and grow my own trees this season. Would they not develop better than stock brought from elsewhere?

I am putting out twenty acres of alfalfa and am going to use some nitrogen, fixing bacteria in same. Do you believe that alkali is apt to prevent the development of the nodules? — Farmer, Stanislaus county.

The removal of the tap root of a walnut is not injurious. Almost all the walnut trees which are now producing a surplus for export of about 1000 carloads are transplanted trees, and every transplanted tree loses its tap root. You need not apprehend, therefore, that the transplanting of yours will have any effect upon the bearing. The walnut tree does not enjoy the presence of alkali, and the effect will depend on how much alkali the soil contains, and, if too strong to satisfy its taste, the branches will die back and the tree be unprofitable. The injury by the rabbits would be overcome by subsequent growth; but injuries by sun are more likely to be troublesome, because the walnut in the interior valley is rather subject to sunburn and in some places is rendered unprofitable thereby. The California black walnut root is more enduring than seedlings of the English walnut, and there is reason to believe that the Santa Rosa softshell will give you less satisfaction on its own roots than if it were grafted on the black walnut seedling. You can only tell by experience what the effect of the alkali upon the development of the nodules on alfalfa will be. Alfalfa is sensitive to alkali and a considerable acreage in the San Joaquin valley has already been destroyed by it.

Grass for North Slope—Sorghum.

To the Editor:—I have 320 acres of foothill land 6 miles southeast of San Jose. Soil, ranging from black adobe to clayey loam. Rainfall, 14 to 20 inches per annum. A gulch on the north slope containing forty acres dipping to the north; well shaded on account of its dip and rich with humus. Problem: What grass can I sow on this slope suitable for calves and hogs? The place at present is nearly destitute of sod and unprofitable. I have in mind Bermuda grass, but I do not know whether it will grow under the conditions or whether it is valuable when grown.

I also have forty acres of comparatively flat land on a hilltop on which I desire to raise the most possible tons per acre for fodder. Will sorghum grow in California under the above conditions? Has it any food value when grown? Will Hungarian millet grow in California? How about Manchurian millet? Is there any other plant food for calves and hogs likely to be profitable for me to raise? I have no agricultural traditions. I would raise skunks if there were dollars and cents in it. — Beginner, Santa Clara county.

It is exceedingly difficult to get a catch of perennial grasses on uplands; but from what you say of the exposures of your 320 acres and the character of the soil, we are inclined to think that you can do it. We would advise you to sow a mixture of Australian rye grass, Tall Oat grass and Orchard grass. These will give you at least a good winter growth, which Bermuda grass would not; and, because of this and other considerations, we are not disposed to recommend Bermuda grass except on low lands where there is too much alkali to promote the growth of less objectionable grasses.

You can grow sorghum on the flat hill top, providing you break up the land during the rainy season, harrow well to retain moisture and then allow the land to lie until the danger of frost is over; then run a disc to kill the weeds and put in sorghum in about the same way you would rows of fodder corn and cultivate occasionally. In this way you ought to retain moisture enough to get a very satisfactory growth of sorghum, and its value for stock feeding is well demonstrated by the experience in the San Joaquin valley and elsewhere. Hungarian millet is not a suc-

cess in California and we are not aware that the Manchuria millet has been sufficiently tried to demonstrate its usefulness.

Microbes, Corn and Castors.

TO THE EDITOR: — Concerning the new mode of treating leguminous plants with bacteria, where can I get those micro-organisms? What time of the year would you suggest planting corn for fodder and chicken feed? Also what time shall I plant Canada or Niles peas for a fertilizer? Should the ground be plowed both before and after, or only after they are ready to plow under? What would you suggest to keep ground from washing on side hill where olives are grown?

What about the enclosed castor beans—are they poisonous? What varieties are these?—ORCHARD OWNER, San Diego county.

You can get micro-organisms for leguminous plants from the seedsmen. They are not furnished by the Government, as the material is now in the trade. Planting corn for any purpose must be done after the danger of frost is over, and the date of course differs in different localities. Canadian and Niles peas can be grown at any time in the winter, because they are hardy against ordinary California frost. The ground, of course, must be plowed before planting the peas, just as it would have to be prepared for any other crop. The plowing under of the green stuff is another operation. There is probably nothing more available to prevent soil washing from winter rains than to get a good cover of peas, burr clover, or some other hardy legume by planting the seed as early as possible in the rainy season.

The castor beans which you send are not the ones used for the manufacture of castor oil. They are some ornamental species, but are not to be considered poisonous, because it is not likely that anything will eat them.

Summer Pruning of Apples.

TO THE EDITOR:—I have a young two-year-old apple orchard. I have pruned this winter and want to give them a summer pruning, so that the wind won't blow them around so much, and also to get a crop the following season. Please tell me how much of the new season's growth I should remove, and whether the pruning should be done in midsummer, or at the latter end of that season. My trees grow from 3 to 3½ feet each year.—GROWER, Hawkes Bay, New Zealand.

We would not summer prune at all, unless it is clearly a necessity. The growth you speak of is not large for a young tree—in fact, it is quite moderate, or even small—and throwing such a young apple tree into fruit by summer pruning means a loss later in the thrift and capacity of the tree. If you wish to get shorter and more compact growth to avoid wind injuries, pinch the ends of the shoots when they are out about a foot, and then thin out shoots the following winter, so the tree will not become too brushy. If you must shorten-in longer growth in the growing season, do it late in the season, after the greatest activity of the leaves is over. But we would certainly prefer to shorten-in young apple trees in the dormant season, after leaf service in the building up of stem and root is over for the year.

Citrus Fruits for Family Use.

TO THE EDITOR:——I am wanting to know of a good way to care for oranges and lemons for family use during the winter and spring. I have an abundance of these fruits for my own use, and do not like to let them remain on the trees too long, fearing a frost may injure them. I have a good, dry and well-ventilated cellar to store in if necessary.—A SUBSCRIBER, Corning.

We would prefer to take our chances on the tree for family use. You can, however, keep them some time in the cellar if you are careful to keep the ventilation good, and can close up when very dry winds are blowing. Store in shallow trays or boxes, so they can be quickly looked over and bad ones removed. Keep the cellar dark as you can without interfering with ventilation.

Starting Fig Trees.

TO THE EDITOR:—Can I whitewash year-old fig trees at time of planting without detriment to the tree? I have planted several acres of figs the past two years and find they have a tendency to make their most vigorous growth in branches from 6 inches to 1 foot from the ground; they act as though they were hide-bound above that height and make a weak growth from the point where they were cut back, that is, about 18 inches to 24 inches above the ground. Fig trees start to grow very late the year they are planted and the bark seems to dry out some. Would the whitewash prevent this to some extent? Has the Jordan almond been planted in California in orchard form, or is it yet in the experimental stage?—H. W., Fresno county.

Yes, you can whitewash all right, but we would not use it too sharp — that is, whitewash from too fresh lime. Partly slaked lime is less caustic, and by using a little salt in the wash it will hold on well enough. We would not cut back a fig or walnut at planting as a rule. They do not stand it as harder wood trees do and are very apt to dry back for some distance. If necessary to cut back do it after the growth starts and the sap up—never mind the bleeding, that will soon stop. Jordan almonds are to some extent in orchard now, but it is too soon to reach definite conclusions about them.

Treatment of Olive Pits.

TO THE EDITOR:—How long should olive seed remain in the alkali solution before planting? The formula is given in Wickson's book on California fruits, but nothing about how long it should be applied.—READER, Arizona.

The use of the alkaline wash for olive pits is merely to saponify the oil remaining on the pit when it is taken from the pulp. The reason for this treatment is to remove the oil so that it shall not prevent the penetration of moisture. One can not prescribe definite length of time to remain in the alkaline solution, because it depends upon the strength of the alkali. If you use a solution of concentrated lye —about one pound to six gallons—it would not be necessary to leave the pits in longer than five minutes, stirring them vigorously from time to time to facilitate the action of the alkali. You should at first crack some of the pits which you propose to grow, to see whether they contain a good kernel or not, because some olive pits are defective in this respect, and you might have a lot of trouble for nothing.

Eastern Buckeye and Johnson Grass.

TO THE EDITOR:—I send you leaves and fruit of a tree which I am told is a Japanese chestnut. Can I use it as a grafting stock for other chestnuts? Is Johnson grass worth growing?—NEWCOMER, Placer county.

The tree of which you send specimens is not a Japanese chestnut, but is the common horse chestnut, largely grown as a street shade tree in the Eastern States. It is a buckeye, but not the same species that grows wild in California. It will not serve as a grafting stock for chestnuts.

Johnson grass is not a bad feed for stock when young, but Johnson grass does not like to grow on dry land, and if it gets into a good, moist land, it is almost impossible to eradicate it. In most situations it is a bad weed, and there are special laws in California against maintaining it on ditch banks, or property lines where it may spread to the property of others.

Olive Oil Making.

TO THE EDITOR:—Where can I find how to make olive oil? What treatment, if any, is required to remove the bitterness of the fruit? Probably you can refer me to some standard authority treating the subject in detail.—READER, San Francisco.

There is no necessity for removing bitterness from the flesh of the olive in the making of oil. We have given the process of oil making a number of times, and you can get pamphlets on the subject by applying to the Agricultural Experiment Station at Berkeley. Our book on "California Fruits" also discusses olive products.

Is It Bermuda?

TO THE EDITOR:—I have sent a piece of grass. I would like you to tell me what it is. I am told it is Bermuda grass and very bad if it gets on your land. I have some growing in the ditch. I am a young beginner in California, so would like to know what it is and how I can get rid of it.—SUBSCRIBER, Colony Center.

We are not sure that it is Bermuda from the specimen, which is a short piece of jointed stem. There are other grasses which have such a stem. A grass specimen should have the seed, head, stem and root, and if you find these we will tell you whether it is Bermuda or not; but if it is Bermuda we are not going to tell how you can get rid of it. That is too hard for us.

Eucalyptus Planting.

TO THE EDITOR:—For shade, general appearance and utility, what kind of eucalyptus trees would you plant? How far apart and what time would you plant them?—SUBSCRIBER, Hollister.

It is impossible to state in a paragraph all that is important in this connection. Turn back in your files to our issues of October 22, 1904, and March 11 and April 1, 1905, and you will find very interesting discussions. You can grow all the species of eucalyptus successfully at Hollister.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 20, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cool and clear weather prevailed most of this week, with frequent light frosts. The rain on Sunday was too light to be of much benefit in the valleys, but was heavier in the foothill and mountain districts, and in some sections was sufficient to start pasturage. Forest fires, which have been destroying valuable property in the foothills for some time, were extinguished by the rain. The long-continued drought has left the soil in poor condition for cultivation and caused a scarcity of feed for cattle. Dry seeding continues in some places, but farm work generally is at a standstill. Oranges are in excellent condition and picking is progressing; prospects are good for a large crop. Olive picking is in progress. Grape shipments are being made from Sacramento.

Coast and Bay Sections.

Cool weather prevailed during the week, with light showers in some sections Thursday and general light rain Sunday. The rain was beneficial in many ways, but hardly sufficient to moisten the soil or start feed except in a few places. Cool north wind followed the rain at the close of the week. Plowing and dry seeding are progressing in some sections, but most farmers are waiting for more rain. Dry feed is very scarce in most places and cattle are in poor condition. Orange and lemon trees in Santa Clara valley have suffered from the long drought, but are in good condition in the Cloverdale district, and give promise of a large crop.

San Joaquin Valley.

Clear weather with cool nights prevailed during the fore part of the week, and cloudy weather with foggy mornings the latter part. Light showers occurred in some portions of the valley on Thursday, and light general rain Sunday and Sunday night. The rain was too light to be of much benefit except to lay the dust. Dry plowing and seeding are progressing in the northern portion of the valley. Orange and lemon picking are progressing, and large crops of excellent quality will be harvested. Shipments of dried fruit continue to Eastern markets. Large shipments of potatoes continue to Southern points from Stockton. Stock are healthy, but losing flesh, owing to lack of pasture. Rain is badly needed in all sections for green feed and farm work.

Southern California.

Warm and generally clear weather prevailed during the week, with light rains in some sections Nov. 17. The warm weather was beneficial to oranges and range grass. The soil is in very good condition, and plowing and seeding are progressing rapidly. Pasturage has made a good start since the recent heavy rains, and some of the early sown grain is showing green. Walnuts were not seriously damaged by the rain and harvest continues. Oranges are ripening rapidly and some shipments will be made for the Thanksgiving trade. The outlook is good for an excellent crop of oranges and lemons in nearly all sections, and it is expected several carloads will be shipped East for the Christmas holiday trade.

EUREKA SUMMARY.—Grass is very short. Dairy interests suffered during the long-continued drought and many stock raisers are feeding hay. Rain in the latter portion of the week will enable farmers to resume plowing.

LOS ANGELES SUMMARY.—The warm days and cool nights following the rain are coloring oranges nicely, but generally slowly. Some holiday shipments have been made. Vegetation is well started; good green feed already in some of the lowlands. Much plowing and seeding in progress.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, November 22, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.78	2.67	7 91	8 73	60	40
Red Bluff	.02	.20	9 48	4.39	68	40
Sacramento	.04	.07	6 31	3.24	68	38
San Francisco	.03	.03	7 86	3.80	66	46
San Jose	.16	.16	4.19		68	36
Fresno	.18	.18	5.07	1.66	70	32
Independence	.38	.38	.45	91	66	28
San Luis Obispo	.04	.04	4.71	3 41	78	44
Los Angeles	.40	1.58	1 14	2 01	80	46
San Diego	.46	3 82	.17	1.03	76	44
Yuma	T	1.07	.81	1.16	80	40

THE FIELD.

Notes Concerning Seed Wheat.

From a Circular of the University of California Experiment Station, by Dr. G. W. Shaw, in Charge of Cereal Investigations.

While farmers, grain dealers, and especially millers, have generally lamented the occasion of such unusual havoc to the grain crop as characterized that of the past season, yet it may not be without some compensating advantages, if growers will but take the very auspicious occasion to rid themselves of undesirable seed. It is hoped that the damage to the crop of 1905 may be more than compensated by the greater attention given to the selection and adaptation of seed, so that the ultimate result will make for profit to all parties interested in cereal culture.

Many of the conditions on which success in wheat growing depends are beyond the control of the farmer. Other conditions, particularly the variety, purity and quality of the seed sown, are so entirely within his control that he alone must be responsible for the results dependent upon these factors.

Manifestly one of the main elements in the production of a strong seedling is a strong, sound seed. With cereal crops this is an ever-recurring question, and, unfortunately, is one frequently neglected by the parties most interested. Further, it is highly prejudicial to the highest results that there are numerous erroneous ideas, held very tenaciously, as to several points concerning seed wheat. There is little doubt but that much of the present condition of low yield is due to the lack of attention to the rational selection of first-class seed. This fact is being constantly emphasized by the inquiries made of the Station as to the quantity of inferior seed which should be used to make up for its admitted deficiencies.

On account of the extreme conditions which obtain in most parts of the State with reference to seed wheat, as a result of the damage from the rust attack of 1905, it is deemed best to set forth some of the facts which seem to have been quite thoroughly demonstrated with reference to the matter of seed wheat. No apology is offered for thus presenting the work of other stations touching upon the points herein covered, inasmuch as the special cereal work inaugurated in this State by the California Experiment Station in co-operation with the United States Department of Agriculture has only been in operation for a single season, a period entirely too short to yield results at all conclusive from its own experience. The circular serves but as an introduction to the work, to call the attention of farmers to certain results which have been obtained elsewhere.

In the light of the positive evidence secured by numerous investigations it may be said that it is certainly possible to add to the vitality of our wheat crop through more careful and rational attention to the seed.

Effect of Change of Seed.—There is a very widespread belief among grain growers that there is a necessity for frequent change of seed because of actual deterioration due to continued culture under the same soil conditions. This idea is held to such an extent as to be well nigh universal. Yet, the most carefully conducted investigations, without a single exception, go to show that not only is there no benefit to be derived from the mere change of seed, but that actual loss occurs, except only when there is a change to a better type of wheat, or to a more vigorous grain of the same type, But this is not the main object usually in the mind of the grower. Farmers are continually changing seed; the one having a stiff soil must have seed from a sandy soil, and he with a sandy soil must buy seed from a heavy soil. Then again, seed is frequently brought long distances and often from regions of very different climatic conditions, with the hope that some immediate increase will be obtained in the yield.

Such indiscriminate change of seed is a most potent factor against proper seed improvement, and there will be little hope of improvement if one must give up a desirable strain every few years for one grown on some one else's land.

The North Dakota Experiment Station conducted some extensive experiments to thoroughly test this idea, "embracing thirty-nine different samples of wheat of known history, representing the varied soils of the State." These samples were grown at the Station under conditions which "make such comparative test of great certainty as to equality of condition. * * * Wheat grown for a number of years on widely varying types of soils were then planted in direct and similar soil association." It was found that standard types of wheat of the same variety brought from different soils and grown side by side at the Station, no matter how marked was the difference in the appearance of the original seed, all gave approximately the same results. "In those in which slight variations did occur it was found that other elements constituted the matter of cause. That is to say, seed grain from a special type of soil has not been found to vary in the product because of the fact that it came from a peculiar soil."

These results were further corroborated by similar tests of injured wheats, the only apparent difference in these samples being that the product from weak seed was very inferior in quantity.

To further test the idea of grain from a change of soil, seed was sent from the station to various types of land in other portions of the State.

The result of these and other experiments indicates that varieties of wheat do not generate per se, at least within any reasonable length of time, by being grown continually upon any one soil. In other words, that a given type of soil seems to produce certain well-defined characteristics in the kernel of whatever variety may be grown upon it.

That Darwin, the great observer of nature's laws. did not share in the idea of degeneracy is indicated from his statement: "I never have seen grain which has either been improved or degenerated by cultivation so as to convey the change to the succeeding crop." He also cites Dalbret as having cultivated 160 kinds for a period of thirty years, all of which kept true.

Results obtained at the Ohio Experiment Station further confirm this idea. Velvet Chaff and Silver Chaff have been grown continuously without change of seed for twelve years; no loss of quantity or capacity to yield is noted.

At the Indiana Station, Fultz, Michigan Amber and Velvet Chaff have been grown eleven consecutive years. The average yield for the first ten years was 27.3, 29.4 and 29.8 bushels. The eleventh year (1894) the yields were 39.67, 35.66 and 27 bushels, from which Professor Latta says: "It is high time that the farmer everywhere should abandon the notion that wheat will 'run out.'"

Prof. T. L. Lyon of the Nebraska Experiment Station, in experiments continued from 1899 to 1904, comes to the following conclusion: "That a variety brought from a more humid to a drier climate will not do as well for a number of years as the same variety which has been grown in the dry climate continuously."

In the light of these carefully conducted experiments we may safely lay down the principle that unless the change be for the purpose of obtaining a better variety or a stronger seed there can be no advantage resulting from a change of seed wheat, and in case seed be purchased from a portion of the country where climatic conditions are quite unlike those of California the seed is not likely to be at its best for several years.

If seed shows signs of running out it simply means that proper care has not been taken in the selection of the seed to remove small, shriveled, and light weight kernels, and to use only plump kernels. With proper care in the selection of seed, wheat does not deteriorate from any change within itself. But to maintain the standard of yield care must be taken in the selection of the best seed and to practice rational methods of rotation, manuring and tillage to maintain the fertility of the soil.

Large vs. Small Kernels for Seed.—This is another of the mooted questions among growers, and the evidence presented below is respectfully submitted for their consideration.

The Nebraska Experiment Station presents the following average yield for each of two years as follows:

	1900. Bushels.	1901. Bushels.
From heavy seed	27 3	28 5
From ordinary seed	26.7	25.9
From light seed	21.8	23 9

The Tennessee Experiment Station presents the following data:

	Weight of Grains. Pounds.
Large Heads.	
Large grains	2,418.7
Small grains	2,375 0
Medium Heads.	
Large grains	2,300.0
Small grains	2,175.0
Small Heads.	
Large grains	1,850 0
Small grains	1,868 7
General Selection.	
Large grains	2,087.5
Commercial sample	2,068 7
Small grains	1,887.5

The results given below were obtained by Dr. N. A. Cobb, New South Wales, the experiments covering three years, and were far too exhaustive to consider each separately. Suffice it to say that with numerous check plots the investigation embraced twenty-four varieties of wheat, separated into large, medium and small grains, as in the above-named experiment, and the average results obtained were as follows:

	Bushels Per Acre. 1st Year.	2d Year.
From large plump grain	32.02	10.34
From medium plump grain	26 77	8 66
From small plump grain	24.86	6.50

Large and Plump vs. Small and Shriveled Seed.—For the present season the results presented under this head should have special application, since there are so many farmers, as a result of the extreme rust conditions of 1905, who have on hand nothing but badly shriveled (pinched) seed. The question is being constantly put to the station authorities as to the value of pinched grain for seed purposes, and it is hoped that the following results secured by Dr. N. A. Cobb in New South Wales in a most painstaking investigation may prove suggestive. These experiments covered five varieties, which gave the following average results, they being uniformly in favor of the plump seed:

	Bushels.
From plump seed	20.18
From shrunken seed	18 52

That the germination of such seeds is fair is indicated by a test made by the writer of this circular, which showed 92% of the grain actually germinated; but the plantlets were very weak and undoubtedly their vitality would always remain low.

The results are in entire harmony with what we know as to the necessity of securing vigorous, plump seed in the case of alfalfa and other crops. The same fact is recognized by the farmer with reference to the parentage of his animals; but, unfortunately, the idea holds that the case is different with wheat. It is to be hoped that grain growers will take advantage of the condition of much of the local supply of wheat to secure new seed and start with a good type of seed wheat.

In this connection it may be mentioned that there will be no more favorable time than this to make a trial of some of the harder winter wheats, especially that desirable bread variety known as "Turkey Red," which gave so much promise last season when grown alongside of our more common varieties.

Growing and Curing Sorghum Seed.

Although it is unquestionably easier to grow and cure sorghum seed in the interior valley of California than in Ohio, because of the abundance of dry heat, there are places nearer the coast where Ohio experience may be more applicable. It is, however, interesting everywhere. Mr. Waldo F. Brown gives the Breeders' Gazette a detailed review of Ohio practice with the plant:

Shocking Experience.—About saving, curing and threshing sorghum seed, I think I have learned the best plan of managing it. When I first began I lost some seed by bulking it and having it heat, and I have had seed brought to me where the bundles had been shocked as soon as cut and had heated so as to spoil the seed in a few days. Sorghum seed should not be cut until it is thoroughly ripe. We cut it at the ground with the corn binder, let it lie a few days for the blades to wilt and then put it up in large shocks. Our sorghum this year will run about thirty shocks to the acre. We cut it the last week in September, put it up in large shocks containing twenty or twenty-five bundles which are very heavy, weighing with the seed on about forty pounds each. When we first began this plan we found difficulty, as the weight of the seed was so great that the shocks would twist and fall down, and in less than a week two-thirds of the shocks would be on the ground. In case of continued wet weather, the seed will deteriorate greatly and in some cases it would be entirely ruined. I studied out the following plan to prevent this by placing a support in the middle of the shock, to prevent the shocks from twisting and falling. My first idea was to place a box or barrel in the center to support the bundles as we built up the shock; but the lucky thought struck me that, as we had an abundance of bound corn fodder, four or five bundles could be placed in a pile, laying them one across the other, so as to build up a good center. The plan proved entirely satisfactory and our sorghum, with the exception of half a dozen shocks, stood up all right. We found it paid to make two ties in setting up the shock—one when it was about half made and the other when completed.

Our plan is to cut down the shocks, cut off the heads with only an inch or two of stem, put the seed in bushel baskets and carry to the wagon until we have it filled. Then we replace the topped sorghum over the fodder foundation, placing it so it will shed water, and tie the tops and let it stand until thoroughly cured, ready for storing away for winter use.

Handling the Heads.—If your seed is put in bulk, it is necessary to watch it to see that it does not begin to heat, as this soon destroys its vitality. We spread the cut heads of seed about 8 inches deep on the floor, then make a false floor with open cracks above the first floor, and put in a second, if needed. When the seed is thoroughly dry, we thresh it with the wheat thresher. If the man running the machine has had no experience with sorghum, he should be cautioned to remove part of the concaves to prevent cutting the seed. I have had seed cut so a pound or two to the bushel would be spoiled; but if the machine is run at a high rate of speed and part of the concaves removed, we have no difficulty on this point. The seed should be so dry when threshed that it will be safe to bulk it. We pay $1 an acre for cutting, and furnish the twine. We find our shocks will average about two bushels of seed to the shock, and the cost of topping is about 8 cents per bushel. Sometimes the machine can be gauged to thresh it so it will not have to be run through the fanning mill; but unless it is well cleaned so it will not give trouble about feeding in the drill, it should be finished with the fanning mill.

It must be remembered that, although the cost of growing and saving sorghum seed is quite heavy, the value of the fodder is such as to pay for the entire cost. I believe it is fully equal to the best of hay, and

as the yield is rarely less than eight and sometimes twelve tons of cured fodder, taking both seed and fodder into consideration, it is a very profitable crop. The bundles when cured weigh from fifteen to twenty pounds each, and three or four tons of it can stand in the space required for a ton of hay or corn fodder; a bundle of it will be enough for a day's ration for a work horse.

Cement Work on the Farm.

An esteemed correspondent of the Pacific Rural Press recently suggested the desirability of more cement structures on the farm, and we invited contributions on that subject. While they are being prepared we will give two descriptions of cement construction from the Breeders' Gazette, which seem thoroughly practicable:

A Cement Tank or Watering Trough.—Select the site and level the ground on a circle the diameter of which is 12 inches larger than the tank. Remove the surface dirt. Set a stake in the center and drain a circle the size of the tank. Take a tile spade and follow the line marked and go down to good yellow clay or other soil that will probably hold water—16 inches will usually do. Begin in the bottom of your trench with a mixture of cement and gravel or coarse sand mixed 3 or 4 to 1, and tamp every ounce of it to the top of the ground. Mix thin so it will pour like mortar, or thinner; the thinner the better. At top of ground set up forms proper height and proceed in the same manner to the top of them. Work in a few pounds of old barb wire. Be sure to tamp well all the way. Three and one-half barrels of cement make a tank 10 feet in diameter and 2½ feet 16 inches in the ground.

When done, let the form stand two days, then remove the inside one and turn in a barrel or so of water and mix the mud in bottom of tank to a perfect "loblolly." Do this again the next day with more water. After another day turn on the mill and let it fill half full or so. Do not get excited if it leaks a little for a while. If it leaks too much, dip the water out and mix the bottom up again until it stops. That muddy water filtering out will surely stop the leaks finally. Leave the outside form on for ten days or until it rots off.

A Cement Floor or Sidewalk.—The Wisconsin College of Agriculture, at Madison, is having considerable experience in building cement sidewalks, and the work thus far has been a decided success. The plan pursued is as follows: Excavations are made to such a depth as to allow for from 8 inches to 18 inches of cinders under the walk. Gravel or sand can be substituted for cinders. This prevents the heaving of the ground and cracking and otherwise injuring the cement. The amount of cinders varies with the locations of the walks. On moist, seepy and level soils there should be at least 18 inches of cinders. Where the walks are on a slope and the soil is well drained, 18 inches of cinders is sufficient. In all circumstances the cinders are well packed.

On top of the cinders is placed concrete (1 part cement, 3 parts sand and 5 parts crushed rock) ¾ inch thick, and on top of this is put a covering of 1 part cement, 1 part sand and 1 part granite screenings ¾ inch thick. This gives a very neat, substantial and durable walk. Where walk is constructed on a steep incline, Farm Superintendent Adams, who has this work in charge, has hit upon a very excellent idea of placing boards upon the cement when it is in the right consistency to stick to the boards sufficiently to leave a rough or wavy surface as the boards are removed. This wavy appearance gives a pleasing effect to the eye and at the same time serves a useful purpose in preventing one's feet from slipping from under him. This roughened surface is preferred to grooves, the ordinary method of roughening cement surfaces.

The material required for 100 square feet of sidewalk is as follows: Two and one-half cubic yards of cinders or gravel (or sand and gravel) for foundation, when the latter is 8 inches thick, 1 cubic yard of crushed stone or clean gravel, ¾ yard of coarse, sharp sand, ¼ cubic yard granite screenings (or sand), 1¾ barrel (4 sacks to the barrel) of Portland cement.

AGRICULTURAL SCIENCE.

Training in Agriculture.

Mr. J. F. Wojta of Minnesota writes to the Breeder's Gazette of facts and tendencies which are clearly discernible in this State.

There never was a time in the history of our country when the desire for agricultural training was greater than it is at present. Every industrious person interested in the business of farming desires a knowledge of the fundamental principles which underlie the art and which explain and reconcile differences in practice and procedure. Such knowledge is to be sought in order that our modern system of farming may be carried out successfully. The chief reasons for this desire may be summed up in the following:

Agricultural knowledge as affording means for closer study of practical farming; the rapid settlement and the development of new agricultural areas; agricultural economic importance as resulting from the present industrial activity throughout the country; and the excellent facilities for study now offered at the different colleges.

Agriculture is said to be the most fundamental and useful of occupations, since it supplies the world with food. From a theoretical point of view this may be true, but a high degree of civilization is possible only with diversification of interests. The relative importance of one occupation depends upon the other to the extent and with the degree of advancement of civilization. Manufacture or commerce is therefore impossible without highly developed agriculture.

What the Modern Farmer Must Do.—It may be truly said, from the educational point of view, that no other occupation brings the study of Nature nearer to man than does practical agriculture. The farmer who, without much thought, seriously busies himself with the ordinary routine of farm work, cannot always understandingly or satisfactorily attempt to give solutions to the many problems arising out of his work. On the other hand, the farmer who analyzes and combines reason with the doings of his hands soon realizes that fundamental knowledge of science is more important to successful farming than mere physical labor.

New and fertile agricultural districts in this and adjoining States are being rapidly settled. The employes, particularly those of abandoned sawmills, tanneries and even the factories, are steadily taking up their homes on farms. The pioneer farmer who once devoted a part of his time to the peeling of bark and chopping of wood and ties, is now entirely absorbed in the improvement of his farm and the farm home. Wooded lands are gradually giving way to productive fields. The farmer whose fields have steadily been under cultivation for a number of years must know the principles of how to restore fertility to the soil, so as to produce crops commensurate with his effort. A good farmer should not only grow crops successfully and economically, but should harvest his crops securely and market them advantageously.

Heretofore scientific knowledge has been considered extremely expensive, and in a new country, with insufficient capital, there were better inducements for enterprise in other directions. Agricultural areas of virgin soil then enabled us to make money while employing wasteful methods. It is also true that the rapid increase in population leads to greater growth in agricultural areas, and their resulting complexities of business transactions make great and increasing demands for specialization along particular lines of work. Whenever produce sells low for a considerable time the fact is usually evidence that some are employing cheaper methods than others, and their product is supplying the market. Those who do not employ as good methods are crowded out. The desire to produce the best quality and the greatest quantity of marketable goods is a question of economic consideration with the farmer.

Education in Agriculture.—It is true that the education which the country boy and girl are to receive should put them in touch with their environments and should awaken a keen and an intelligent interest in things immediately about them and make clear to them the possibilities for intellectual activity and development for the individual who lives in the country. It should make evident to them that a trained intelligence brought to bear upon the different problems of farm life is a necessity for the highest success, and if coupled with industry and economy will produce financial returns proportionate to the effort. Agricultural training will bring to the country boys and girls an opportunity for a more pactical and a higher grade of education than they have been able to secure heretofore, and some of this may be had in their own localities at small expense.

The fact that such a large number of young men seek technical training in agriculture in the different colleges cannot but have a wholesome effect. A study of rural life under existing conditions has caused the preparation of an ideal course of training in the science of agriculture. Greatest improvements have been made in the extension of laboratory work, in analyses of soils and fertilizers, in selection of seed grains and work in practical animal husbandry. A few years ago there was no demand for technical training for those engaged in agriculture, but to-day the demand in this and other countries is constantly increasing.

There is need for more training and knowledge among people who farm, with regard to the managing of natural forces in accordance with the laws that govern all animal and plant growth. There is a wide difference between soil physics and practical knowledge and ability. The person who understands soil physics can manage land and crops better than if he did not understand the principles. Knowledge obtained through a course of training stands for power, the power to see, the power to do, the power to understand, and therefore the power to know.

What the College Can Do.—What of the disciplinary value to the student in taking a course of such training at the college? (1) It teaches the student to analyze carefully the nature of that which he intends to perform and to master in detail the difficulties it presents. (2) It teaches him to study conditions with a view to employing means suitable to their requirements. (3) It teaches him to be methodical and logical in all his operations so that the efforts made will have direction toward the end sought. (4) It inculcates habits of honesty in thought, word and deed. It breeds friendship.

The work planned for the student by the teacher in the college will give him quite a course in scientific study. The information acquired through such study will furnish the foundation for his successful career as a farmer. Many a boy will be led to see the rare possibilities for the practical man in agriculture—the trained man. The day is at hand when the successful farmer must have a special training in his own special business. In the near future the man with the old-time methods will be completely outclassed by the man with training in his pursuit. The day is not far distant when the bright boys and girls will not leave the farm for the more active life of the cities of to-day. The doings on the farm will require the close, careful and shrewd thought that is demanded by the complex lines of business to-day. Head-work as well as hand-work will find such a happy combination that many a bright fellow will be drawn from the city and rush to the more tranquil country atmosphere.

THE STABLE.

The Outlook for California Horses.

Mr. W. G. Layng is, perhaps, the best informed man on the commercial side of the California horse industry, and his points as given to the Live Stock Journal are of wide interest to our readers:

The Present.—Horse breeders and farmers have had a most profitable season in selling horses to the governments of the United States, Germany and Great Britain. The Hawaiian Islands, Mexico and Alaska have also made large inroads on the supply, while the hundreds of thousands of people who have come to California to engage in farming, mining and contracting for railroad work and grading have scoured the country purchasing suitable horses. Naturally, valuations increased and are doing so daily. The supply has been limited, and with the settling of the vast tracts of government lands, over which thousands of horses formerly roamed; the cutting up of the big stock farms and the dispersal of the large studs of horses; the natural decrease by death and accident among horses, and the curtailment of all large breeding operations during the past ten years, make it almost imperative for every man who has a farm—be it devoted to agriculture or to dairying—to start in at once and begin the breeding of good horses. Buyers will always be found willing to pay good prices for horses. They are searching everywhere for them now. Nevada, Wyoming, Idaho and Montana have been searched as with a fine-tooth comb to get horses, not only for California, but for the vast country east of the Rocky mountains, and the report is that nothing is left in these States but "furze tails" and "scrubs," all the good ones having been shipped away.

The Outlook.—It does not take one gifted with foresight to see that fortunes are to be made within the next five years in this industry. A glance at the prices obtained for serviceable horses is convincing and should appeal to the reason of every reader, for at no time in the history of this State has there been such a prospect to realize a splendid annual income from the raising of horses of all breeds as at present.

Every farmer and dairyman should understand the situation and endeavor to furnish horses to meet this demand, for to them buyers must go. The era of the big stock farm has passed and in its stead the small ones must suffice. The aim of every owner of a good mare should be to breed her next spring to the best stallion procurable. If there are no thoroughbred representatives of the Belgian, Percheron, Clyde, Shire or Suffolk Punch breeds in the vicinity, then there should be a meeting called of all interested in the industry for the purpose of forming a joint stock company to purchase a suitable stallion, and negotiations to that effect could be immediately opened with some of the importers or breeders with a view to purchase.

The breeding problem will then be solved and the patronage of owners who are not shareholders will pay handsomely on the investment, and in a few years the stallion will be paid for and a class of horses will be seen roaming over the hills and across the valleys for which high prices will be obtained, and the reputation for raising such fine horses will be a splendid advertisement for that portion of the country. This method is being pursued in nearly every State in the Union, and, notwithstanding the introduction of automobiles and the abolishment of horse cars, the demand for good horses for draft, carriage, business, track and saddle purposes is on the increase.

It is not necessary to depend upon buyers from all parts of the Pacific coast. Scores of men from Chicago, Kansas City, St. Louis and New Orleans have been inquiring for horses, and if there are any to be

sold they will be here to pay the very highest prices. Three-year-olds will bring from $150 to $210 each, if they have size and quality. Higher prices for well-matched teams will be paid. A team of five-year-old geldings weighing 3800 pounds recently sold in Chicago for $1300, and $700 and $800 are not considered too much for good teams of well-matched horses there to-day. California has earned a reputation second to no other in the world for the raising and development of horses of all kinds, and the intelligent farmer and dairyman who wishes to increase his profits yearly, and who has studied the situation, should not hesitate a day. Time is valuable and this is the best season of the year to buy stallions and have everything ready when the season opens.

THE POULTRY YARD.

The Poultry Business.

Our regular contributor, Mr. A. Warren Robinson of Petaluma, discusses the business aspects of poultry growing in the Petaluma Journal in an interesting way:

Requirements.—To successfully conduct a poultry business requires close application and due regard to numerous details. There must needs be many steps and much labor, which, while it is not as hard or tedious as that of some other avocations, is, nevertheless, irksome to a greater or less degree.

But it is not all machine work. Far from that. Here the successful person must, withal, exercise the powers of mind, as well as of the body. In the matter of observation, experiment, study, devising means to accomplish certain ends; in the exercise of patience, continuity; in the determination to overcome all obstacles and in the endeavor to do one's level best, both in hard work and in mental effort—all this serves to develop the man and robs the business of the drudgery that, to many, seems to be a part, and a very prominent part of this avocation.

The careful observer learns by experience. He experiments along this or that line that he may attain coveted results. It may be the matter of breeding or in the mating of his fowls; or it may be as regards the most profitable foods, also as regards the housing of fowls and the warding off of disease.

In this connection there opens up a broad field of great interest, for with the care of the youngest chick, through the succeeding steps of the life of the fowl, one's love for nature strengthens. To note the gradual development of the chick into the beautiful six-months-old pullet is far from being without interest. The success which attends this progress robs the requisite labor, which we often think very slow and hum-drum and tedious, of much of its irksomeness.

Mental development and the culture of the finer elements of our natures may, and should, accompany all our efforts to succeed in the struggle of life.

Many brainy men are engaged in this interesting and profitable business—the raising of poultry. Some of our deep thinkers, who have put their energies into this vocation, have attained more than national reputations. And why not? He who makes it possible for the public at large to add to life's success is certainly a benefactor to the race. Thousands of poultrymen to-day owe untold benefits to those who have given their time, money and talents to the development, the expansion of this wonderful business.

Against Exaggeration.—The following quotation from a recent article from the pen of an Eastern poultryman will be found interesting reading: "Those who have succeeded with poultry are those who have overcome obstacles and battled against and battered down oppositions, unless there has been an odd genius or so in the country, who has grasped the details and mastered the difficulties of the business in a marvelously short time. One hears of such and occasionally reads of one such, but never sees one. They are as evasive as ghosts, and perhaps as substantial.

"I think a protest against the false inducement offered by these glaring and sensational statements of immense gains from a small outlay of money should appear once in a while in substantial agricultural papers, and the truth indicated that there is profit in poultry, as in other things, when the business is handled properly and when good, honest work and thought are expended upon it. Get-rich-quick schemes are elusive and delusive. If one person gets rich quick in some scheme or business put him down as a genius, or the results of one of the 'happens' of life. It is not the rule with chickens, or oil, or railroads, or newspapers, or even farming. Hard work and hard thought, and plenty of it, both, are the foundation of success. That is the price of it and many pay the price without getting it. If one gets it without paying the price he is in a class by himself and no guide to us ordinary mortals.

"Chickens certainly pay good profit, and invite culture from scores and hundreds who can raise a few on a small piece of land. More persons than are now in the business can advantageously undertake it. There is much of pleasure in it, and plenty of work and abundant opportunity to think. When one has acquired the knowledge and the faculty of feeding and caring for 200 hens he will be in receipt of a modest income which will make the way of life easier. The road to this desirable result is that of slow, steady and continuous progress; and he who attains possession of 200 hens and knows how to take care of them will have learned of some things that are not in the pages of book or newspaper, but which have been worn into him by the hard rubbing of every-day facts. He will know that he will get rich from a few hens, for one thing. For another he will know that he cannot get rich in the poultry business otherwise than as other men get rich in other business, namely, by doing a great deal of it successfully. For another thing, he will know that there is a good profit, and much satisfaction, in doing even a little of the business."

Protection.—When the heated season is approaching the poultryman needs to be on the watch for inroads of red mites which so cunningly, and persistently, take up their abode in hen houses. It is not always fair sailing on this voyage on which we are embarked, as many have found. There are battles to wage and that against insect life is one the poultrier has on hand much of the time. At the risk of repetition it may be stated that one pound of naphthalene flakes dissolved in one gallon of coal oil, with one or two tablespoonsful of chloro-naphthalene added, make a very good, effective paint for roosts where mites play hide and seek.

Also for a good disinfectant, a powder one may use in the house and yards, is air-slaked lime, sulphur and a liberal quantity of chloro-naphthalene.

THE IRRIGATOR.

Irrigation Enterprises and Their Achievements.

[CONCLUDED FROM LAST ISSUE.]

The centrifugal pump is rapidly coming into use in connection with irrigation and is being extensively installed in this country where pumping is required. It is interesting to learn that these pumps are taking the place of the primitive shadoof, which has been for ages the method employed for raising water along the Nile. As the cotton and sugarcane crops in that country yield from $30 to $40 an acre, or even $50, the well-to-do farmer can afford a centrifugal pump run by steam power. There are now many hundreds of these pumps, fixed or portable, working on the Nile banks of Egypt.

Drainage.—Mr. Moncrieff was very strongly of the opinion that irrigation should be accompanied by drainage, a view which is coming to be widely held in this country. Speaking specifically upon the subject, he said: "In the great irrigation systems which I have been describing, for a long time little or no attention was paid to drainage. It was taken for granted that the water should be absorbed or evaporated, and get away somehow without doing any harm. This may hold good for high-lying lands, but alongside of these are low-lying lands into which the irrigation water from above will percolate and produce water logging and marsh."

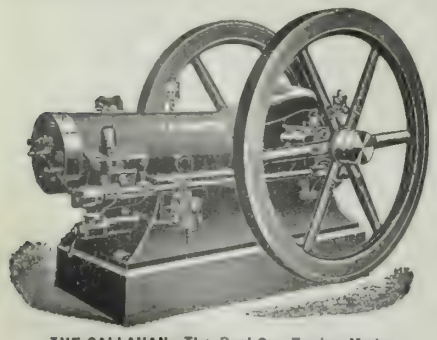
This is exactly what has happened in many places in our own country, rendering land practically useless and often causing it to be abandoned for cultivation. Where the evil has not progressed so far as this, alkali has taken possession of vast tracts of land, greatly restricting its value and the uses to which it can be put, and even rendering it unfit for any crops.

The speaker advised that the drainage canal should be constructed along with the irrigation canal, and he quoted no less an authority than Sir W. Willcocks in support of this. The latter states that the capacity of the drain should be one-third of that of the canal. "The two should be kept carefully apart—the canal following the ridges, the drain following the hollows of the country, and one in no case obstructing the other. This subject of drainage early occupied the attention of the English engineers in Egypt. In the last twenty years many hundred miles of drains have been excavated, some as large as 50 feet width of bed and 10 feet deep."

What America Can Do.—A survey like the above shows that in this country we are, relatively speaking, only at the beginning of irrigation development. A large proportion of our first efforts have been little more than temporary makeshifts and have lacked that degree of stability and permanency which characterizes the works of the Old World, and which is so important when we consider the dependence of arid agriculture upon irrigation. This dependence is not temporary, as are some conditions of agriculture, but is to be reckoned with as a permanent requirement of farming. Mr. Moncrieff, while mentioning some of our larger and better works, comments upon them as a whole as "often rude and of a temporary nature, the extensive use of timber striking a foreigner from the Old World." He also refers to the lack of a well-devised scheme of water control, such as exists in Italy and elsewhere.

It required time, of course, to convince capital of the possibilities of irrigated agriculture and to bring about a faith which warranted more permanent works; and as the experiments had all to be made by private enterprise, the surprise is not at the imperfect character of these works, but at the public spirit and enterprise which have made some of our larger and more difficult works possible. Sir W. Willcocks has said that "if private enterprise can not succeed in irrigation works of magnitude in America, it will surely not succeed in any other country in the world."

Our progress now, both in the development work and the investigation of irrigation problems, is in line with that in other countries, as judged by the above survey. With the Federal Government supplementing private enterprise in the construction of large projects and carrying on extensive investigations upon the use and economy of water, this important branch of agricultural development is placed upon a rational and intelligent basis which will make for greater permanency and stability.


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Agricultural Review.

Butte.

BUYS OLIVE CROP.—Chico special to Sacramento Bee, Nov. 17: The Ehman Olive Co. of Oroville has purchased the bulk of the olive crop in this vicinity, securing the output of the Bidwell, Cussick, Luck, Fitzgerald and other orchards. Picking has been commenced and the product is estimated at about fifty tons.

Humboldt.

FIRES MENACE LIVE STOCK.—Eureka Correspondence to Sacramento Bee, Nov. 17: Humboldt county is suffering from drouth. Stock on the ranges are dying for want of feed, and grass is exceedingly short. In many places fires have swept the ground perfectly bare, destroyed small trees and damaged large timber. The fires which recently raged along the Mad River, near the Humboldt-Trinity line, burning off many square miles of ranges, continued to the top of South Fork mountain and descended on the Trinity side. Stock which sought refuge in canyons and escaped the flames may die of hunger before they can be removed to other pastures, which are short of grass and unable to provide feed for the cattle now depending upon them.

Mendocino.

THIRD CROP OF JUNE APPLES.—Ukiah Press, Nov. 17: Frank Albertson reports that Ed Stipp has a third crop of June apples to report, and brought some of the apples to this office to prove the statement. While not as large as the first and second crops, the apples are fairly good tasting.

Placer.

EXPERIMENTAL VINEYARD. — Sacramento dispatch to Call, Nov. 17: George C. Husmann, pomologist in charge of viticultural investigations of the Department of Agriculture, and G. H. Hecke, expert in viticulture, Department of Agriculture, have gone to Auburn in connection with the experimental vineyard which it is proposed to locate in the foothills near that city. In case a tract is secured that is entirely satisfactory, and the owner undertakes to carry out the requirements of the department, the station will be established.

Sacramento.

OLIVES IN THE SACRAMENTO VALLEY.—Sacramento Union, The efforts of the Sacramento Valley Development Association to stimulate the olive industry are taking some definite form, and a meeting of growers and manufacturers is to be held on November 18. There is no doubt that olive growing has fallen short of what it should be in the Sacramento valley and throughout the State, and short of the expectations that were reasonably entertained in regard to it. In 1897 the Hon. Ellwood Cooper expressed the opinion that the culture of the olive for commercial purposes formed an industry that with proper protection should be regarded as one of the safest in California, and under favorable conditions the most profitable of all branches of horticulture. His estimate of what the crop ought to be was then 250,000,000 pounds. Allowing one-half for picking and drying, there would be 400,000 barrels of fifty gallons each, or 6000 carloads. The other half, made into oil, would give 1,000,000 cases of twelve bottles each, or 2000 carloads. Mr. Cooper asked if such a quantity could be sold under present conditions, and he seemed to be somewhat in doubt as to the answer. He said that a great missionary work lies before us in educating the human family up to the realization of the importance of consuming the product of the olive tree. Sooner or later such knowledge would become universal, but not without hard work. The great drawback to the sale of the olive was then, as it is now, the adulterations and substitutions put on the market with fraudulent labels and fraudulent statements, while the difficulty in selling the pickled olives is due to improper processing and to want of care. If the Valley Development Association can succeed in bringing together a number of the growers and manufacturers some good results must certainly ensue from the exchange of ideas and of experiences The olive crop ought to be as successful and as profitable as the orange crop, and it can certainly be made so by effort.

OLIVE GROWERS ORGANIZE.—Union, Nov. 19: The meeting of the Sacramento olive growers called by the Sacramento Valley Development Association convened Nov. 18 in Pioneer Hall, Senator M. Diggs, president of the Valley Association, presiding. President Diggs stated in opening the meeting that it had been called for the purpose of endeavoring to benefit the olive industry, and that the action to be taken rested wholly with the olive growers and handlers present. Fred Martin of Sacramento spoke for immediate organization, and moved that the president appoint a committee of eleven on organization. President Diggs named as members of this committee C. W. Bolles of Oroville, W. H. Samson of Corning, C. F. Aaron of Marysville, Fred Martin of Sacramento, H. A. Buffum of Fair Oaks, Herman Berg of Marysville, J. W. Kearth of Colusa, L. D. Butts of Placer county, R. H. Taber of Corning, W. W. Chapin of Sacramento, George Thresher of Gridley. The committee submitted the following report: "We respectfully recommend that in view of the unsettled condition of the olive industry in the Sacramento valley a permanent organization of the olive growers of the Sacramento valley be formed; that the name of the organization be the Sacramento Valley Olive Growers' Association, the membership to be composed of persons actually growing olives in the Sacramento valley; that the control of the business of the Association be vested in a board of seven directors and a president, who shall be an ex-officio member and presiding officer of the board of directors."

San Diego.

HEAVY OLIVE CROP. — San Diego Union, Nov. 16: Everything points to a record olive crop this year, according to W. R. Gunnis, former horticultural commissioner, who is out among the ranchers and orchardists all the time. As a general rule, the olives will be small this year, possibly owing to the great number on the trees, but the yield of the orchards will be tremendous. There is a large acreage planted to olives. The long succession of dry years was very hard on the trees, but only a very few orchards were abandoned. Last year we had plenty of rain, and it did the trees good. This last storm has also done its share of good, though, of course, it came too late to affect the crop this season, but the rain washed off the trees and fruit.

San Joaquin.

PROFIT IN GRAPES.—Lodi special to Sacramento Bee, From a 30-acre vineyard of 15-year-old Tokays this season nearly $10,000 was cleared. In the entire tract are thirty-six acres, a few acres being set out to almonds. From the thirty acres 16,270 tons of grapes were shipped. These netted $13,223.19. The cost of cultivation, picking, packing and material was $3677.47. The almonds on the place brought $321.

Solano.

FRUIT SEASON PROSPEROUS.—Suisun special to Sacramento Bee, Nov. 12: The fruit season that has just closed has been one of the most profitable in the history of fruit growing in the Suisun and Vaca valleys. Although the season did not open auspiciously, at the time the most important stage of shipping arrived prices were good and all varieties of fruit yielded highly satisfactory returns until the season ended. In Suisun valley the cherry crop came nearer being a failure than was ever known and in Vaca valley the crop was an exceptionally short one. Heavy rains in May also caused great damage and the shipments to Eastern markets showed a marked decrease compared with those of an average year. The apricot crop was a very heavy one, especially in Suisun valley, and a larger quantity than usual was shipped East. The dried product was also a large one. The most remunerative returns in both Suisun and Vacaville Valleys were from pears. In Suisun valley $1.25 per box was paid for the first shipments and over 150,000 boxes were afterwards purchased for $1 per box. Peaches realized good prices both for yellow and the dried product. Plums were a good crop and sold for remunerative prices, especially the Tragedy variety. In Vaca valley grapes brought in handsome returns. About 500 carloads of green fruit were shipped from Suisun. The total shipment for the season from Vacaville was 850 cars against 558 for last year. The dried fruit establishments in Suisun and Vacaville started earlier than usual, and have shipped extensively. Over 100 carloads of dried apricots have been shipped from Suisun. Dried pears have commanded the highest prices. Although prices have since weakened, the first dryings brought record-breaking prices. With the exception of the rains in May, the climatic conditions during the season have been ideal. It is a well-known fact that the "red-ink" returns so familiar to growers under the old method of shipping are now almost things of the past and that the new method of shipping, with the diversion of cars and wider and more intelligent distribution of green fruit, has placed the fruit industry on a remunerative basis never previously enjoyed.

Sonoma.

HOP GROWERS INCORPORATE.—Press-Democrat, Nov. 19: At the meeting of the hop growers Saturday afternoon it was decided to incorporate as a co-operative association. Articles of incorporation, which had been prepared by the committee on organization, were presented and adopted. The name remains the "Sonoma County Hop Growers' Exchange," with the principal place of business in Santa Rosa. The term of incorporation is fifty years and the membership fee $5. There are five directors who were elected, as follows: H. Finley, J. W. Clark and J. L. Peterson of Santa Rosa; J. M. Laughlin, Fulton, and J. A. Petray, Healdsburg. The purposes for which the corporation was formed are to assist each and all of its members in advantageously disposing of the crop of hops grown by them each year, and for that purpose to obtain for the use of itself and its members, information and to keep itself and its members continuously informed as to the conditions of the world's supply of hops, and of the demand and probable demand therefor, and like information, to act as agent in securing sales and making sales, and marketing hops, and assisting its members in making sales of their hops, and in finding purchasers therefor; also to act as agent in the purchase of trellis materials, wire, hop cloth, sulphur and all other supplies useful or necessary in the growth and preparation for sale of hops; said corporation is also organized for the purpose of buying, holding and selling, leasing, pledging or mortgaging real and personal property, to give and receive evidences of debt and to execute all instruments, papers, contracts and agreements necessary or usual in order to carry out the purposes of this corporation; to buy and sell hops on commission, to encourage the production of better hops, and in general to do, perform and take any and all steps and proceedings necessary and proper to fully carry out each and all the provisions of this article according to their true intent and meaning, and to the same purpose and extent as a natural person.

Stanislaus.

GRAIN SEEDING. — Oakdale Leader, Nov. 17: The continued dry weather is giving a backset to many farmers in seeding their lands, while others are not waiting for rain but are putting in their grain crops by the dry process. In some soils this cannot be done, especially where lands were plowed before the heavy rains of last spring, thus baking the soil too hard to admit of seeding. One of the most successful grain growers of this locality stated to a Leader reporter recently that if it never rained he would never seed any more land, it mattered not whether the ground was soft or hard, and he believed the farmer who was prevented from seeding his lands by the soil being baked was in good luck; that grain sown in a moist soil would yield three sacks more per acre than that seeded in a dry soil.

Sutter.

WAR AGAINST PEAR BLIGHT.—Yuba City special to Sacramento Bee, Nov. 17: Prof. M. B. Waite of the United States Agricultural Department, and Horticultural Commissioners H. P. Stabler and R. C. Kells are looking over the pear orchards of this county for pear blight, with a view of continuing the work of exterminating the dreaded enemy of the fruit industry through the winter and spring. The Harkey orchard near Yuba City shows a much healthier condition.



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The old earth lies,
And bares her bosom to the tempered glow
Of autumn skies.

With dreamy eyes she marks the southward flight
Of migrant bird,
The slow descent of the reluctant leaves,
By soft winds spurred.

With brooding tenderness the sentinel trees
Her couch have spread,
And from their shivering branches stripped the leaves
To deck her bed.

Soon she will sleep, unheeding, cold, beneath
A shroud of snow,
But deep within her breast she still will keep
A heart aglow.

—Gertrude Gibbs.

A Parent's Plea.

My little boy is eight years old,
He goes to school each day;
He doesn't mind the tasks they set—
They seem to him but play.
He heads his class at raffia work,
And also takes the lead
At making dinky paper boats—
But I wish that he could read.

They teach him physiology,
And, oh, it chills our hearts
To hear our prattling innocent
Mix up his inward parts.
He also learns astronomy
And names the stars by night—
Of course, he's very up to date,
But I wish that he could write.

They teach him things botanical,
They teach him how to draw,
He babbles of mythology
And gravitation's law,
And the discoveries of science
With him are quite a fad.
They tell me he's a clever boy,
But I wish that he could add.

—Life.

The Tables Turned.

"Oh, dear!" sighed Mildred, "I don't see any fun in having to spend Thanksgiving with Grandma Mouse! Silverfield is such a lonesome place, and grandma gets older and more wrinkled every day!"

Papa looked grave and mamma troubled, and Master Hugh, who was a year and a half older than Mildred and who always thought it was his duty to assist his mother and father in correcting the other children, cried out:

"I don't believe Grandma Mouse's wrinkles are half so deep as yours, Miss Mildred. Ain't you ashamed of yourself, when she's done such oceans for you, more'n for any of the rest of us?"

Mildred's eyes shot dangerous glances.

"Shame on yourself!" she retorted, "it's all very well for you to talk, you'll all stay home and have a good time, and I shall be cooped up in the house with an old woman; great fun, I suppose you think!"

"Mildred! Mildred!" said mamma, sternly, and four-year-old Lilian burst out with:

"My Dranma isn't a wrinkled old woman! You're wrinkled this very minit, you'self."

"Hugh told you to say that, you little silly," exclaimed Mildred, as she left the room.

"Did not—" began Hugh, but stopped suddenly as he caught his mother's look, for Hugh was never wilfully disrespectful to his parents.

"I must tell mother that Mildred doesn't wish to spend her holiday at Silverfield," said Mr. Mouse somewhat sadly. "I am sorry, for mother loves her so much."

"Hugh might go," suggested mamma.

"Yes, but mother doesn't care so much for boys. Lilian and Jack are too small, so I think it must be Mabel."

"Perhaps Mildred will feel better tomorrow. It's her birthday, you know."

"Yes, I know," answered her husband, "but, if she doesn't go for love of her grandmother, I wouldn't urge it upon her."

Mildred went slowly up stairs in the pretty white room she occupied with her sister Mabel. The set of white furniture in it had been a gift from Grandma Mouse, so, too, were most of the pretty books in the low book shelves, for Papa Mouse was not yet rich enough to afford many luxuries for his little brood.

"It is very beautiful, papa, and very kind of you to give it to me."

"Do you remember the old cradle in the attic?" continued Mr. Mouse. "She was not more than four or five years older than you before she began to rock that cradle with the first of her twelve children. She alone can tell you how many nights in her long life she has rocked it for her own and her children's children. The lines in her face that you spoke of this morning mark long nights of watching over sick beds, long days of planning and anxiety, long years of work and trouble. Still, this picture here is as fresh looking as you are, Mildred. If you live, you will some day be as old as she is."

Mildred was silent.

"I have told her," went on her father, "that you had rather spend Thanksgiving at home."

"You didn't tell her what I said?" asked Mildred, in remorse.

"No, dear; I am not needlessly cruel. She was much disappointed, for you are her favorite grandchild, but I presume Mabel will do as well."

Mildred crept softly down stairs and peeped into the back parlor, where grandma sat knitting mittens in the sunshine. There was a tear stealing feebly down the wrinkled cheek and Mildred, seeing it, fled to hide her own.

"I am a heartless granddaughter," she said to herself; "supposing grandma should die!"

That night she nestled close to the old lady's feet upon the rug before the fireplace, watching Hugh whittle industriously at a long, thin stick.

"What are you making, Hugh?" she asked, drowsily.

"A coffin," said Hugh.

"A what?"

"A coffin for Lilian's doll," laughed her brother, and then all at once, while Hugh whittled away, Mildred felt herself getting older.

Older and older she grew, and, strange to say, the cradle in the attic was down before the fireplace, and seemed filled with children.

Mildred rocked away lovingly, and one baby tumbled in as another tumbled out, and then all at once the rocking stopped, and the babies grew up before her eyes like Jack and the Beanstalk, and then other children came and the cradle commenced to rock again, and all this time Mildred kept growing older and more wrinkled, while Hugh, provokingly young as ever, whittled on at his long, thin stick.

"Most ready, Uncle Hugh?" inquired the pertest of the grandchildren, one Thanksgiving night, a little girl aged twelve, who looked much as Mildred remembered to have looked when she gazed into her white, ruffle-trimmed mirror many years past.

"What is that for?" asked Mildred, in a high, weak voice that quavered at times.

Mildred was a very pretty little girl and the reflection of her face in the muslin-draped oval mirror was wont to give her much satisfaction. What it showed her usually was a pair of beautiful brown eyes and rippling chestnut hair, a clear pale face and lips like a scarlet rosebud, but to-day she noticed a deep furrow that had plowed its way resolutely over the fair young brows and taken up its abode as if to say:

"I shall soon belong here, so I might as well make myself at home." "How ugly!" thought Mildred, "that is Hugh's fault, boys are such torments."

But she straightened out her face and the sweet natural expression of childhood came back with the smiling eyes.

Just then her father entered, bearing in his arms a large oil painting in a heavy rich old-fashioned frame. He stood it carefully against the bed while he arranged to hang it, Mildred looking on with surprise.

"I am glad to see you look pleasanter, daughter," he said as he noted her changed expression, "to-morrow is your birthday, isn't it?"

"Yes, papa."

"And how old will you be?"

"Twelve years."

"Just the age of this young lady," said papa, as he placed the portrait to his satisfaction.

Mildred started eagerly.

It was almost as if her own face looked down at her from the painted canvas, there were the same perfect features and creamy complexion, only the dark eyes were larger and softer, the mouth was even more warmly red, and the pale brown wavy hair seemed woven with stray threads of gold.

It was the picture of a little girl more beautiful than Mildred, even in her vainest moods, had ever thought to be.

"Papa Mouse!" she exclaimed, "wherever did this come from?"

"It was taken sixty-five years ago," answered her father.

"Years and years before I was born," broke in Mildred.

"Yes," he continued, "it is your Grandmother Mouse when she was a little girl like you. Your Aunt Mabel gave it to me a few months ago, and I have kept it for your birthday present."

"Papa, papa!" cried Mildred with a burst of self-reproach, "after what I said this morning I don't think I ought to have it."

"I thought it belonged to you by rights," replied her father, "as you are her namesake and the only one of the children who resembles her. All of your good looks, my dear, you have inherited from your grandmother."

"Why, grandma," answered the little girl, "you are so old and wrinkled and fussy that we don't want you any more. You are in your dotage and so disagreeable that we are going to bury you alive."

Hugh approached, dragging the coffin, and poor Mildred strove with wild, frightened screams to rush away from him, but her feet refused to move.

"Now," said Hugh, with a mocking laugh, "we'll get rid of her."

Mildred felt herself drawn toward the terrible object that shone in the firelight, but she determined to make one last attempt to save herself.

Clutching the old cradle firmly, she gave one gasping shriek, and then——

"Mildred, Mildred, dearie, what is the matter?" questioned a loving voice, "Wake up, child, wake up!"

Mildred sat up on the rug and looked stupidly around her.

Papa and mamma were out, but Mabel was hurrying to her with frightened face, and Hugh, the coffin finished, sprawled before the fire playing with the kittens. She had nearly pulled off the rocker of grandmother's chair in that hateful dream. And somehow she had never seen anything kinder or more tender than the wrinkled face bending so anxiously over her.

"Oh, Grandma Mouse!" she cried, snuggling down on the old lady's shoulder as she used to do when a wee child. "I do love you, Grandma Mouse!"

And grandma clasped her to her heart with soothing caress.

Mildred and Mabel both spent Thanksgiving at Silverfield, and it seemed to Mildred that the old place had never been such a storehouse of treasures. Grandma appeared to know just what pleased little girls, and both children agreed that they had never had so good a time.

There were old trunks full of bygone fashions, in which they robed themselves and played at lady; there were wonderful bits of faded silks and brocades and yellowed laces that changed owners; there was plenty of old-fashioned molasses candy and raisins, a long afternoon sleigh ride over crisp country roads, and the evening saw the pretty worsted work for papa's Christmas begun, while grandma told some of her rare stories.

After a time Maria, who had lived with grandma for many a year, went upstairs with the warming-pan, and the children undressed and said their prayers by candle-light and went to bed in the great four-posted bedstead.

"Girls, girls!" called grandma from the foot of the stairs as she had done many a time to her own girls, "go right to sleep, it's awful late!"

"Yes'm," answered Mildred, as they cuddled under the warm sheets, and then she whispered, confidentially:

"Do you know, Mabel, I would love to live here all the time with Grandma Mouse?"

But Mabel was already asleep, and although Mildred tried hard to keep awake and think over the day, in a few moments she had followed her sister's example, while the tall clock in the hallway ticked a lullaby and the November winds chased each other around the old farm house.

The Spirit of Thanksgiving.

Three thousand years ago the Jewish Feast of Tabernacles at the end of the harvest was an important one to the Jews, with its picturesque festivities, magnificent rituals and melodious choirs.

D'Israeli gives a glowing description in his Tancred of the glory of this great Hebrew festival, which suggested our historic holiday of Thanksgiving.

The Feast of Demeter, referred to in Theocritus, was closely allied in spirit to this day; also, the harvest festival of the Romans, called Cerealia, to the rustic ceremonies of which Virgil alludes, also the Merry Harvest Home of the English Fatherland, under the full moon of September, and in the late Indian summer the red men of our forests held a wild-wood carousal of eating and revelry.

The first Thanksgiving service held in North America was observed by religious ceremonies conducted by an English minister named Wolfall, in 1587, on the shores of Newfoundland. This reverend gentleman accompanied the expedition under Frobisher, who brought the first English colony to settle on these shores.

The Puritans rejected Christmas as a relic of Popery, but in its place instituted Thanksgiving. No preaching the whole year was so impressive as that morning's sermon, full of gratitude for blessings received and expected.

Virginia always made much of Christmas, but New England reverences the memories and traditions of Thanksgiving. Its first appointment as a national holiday was made by Washington in 1789; but every day may become a thanksgiving for those who seek out the hungry in body and spirit to feed and the naked to clothe.

The significance of the day is maintained, though from fasting and thanksgiving it has become feasting and thanksgiving. The full storehouses and well-garnered harvests make a day of joy in reality as well as one of seeming; and upon those who can not say they have much to be thankful for, to whom the year has brought hard paths, uphill roads and stony places, Thanksgiving must not be forced. The minor key must have its melody this year, but the future holds for them unknown Thanksgivings.

Life is too great to make it possible for us to judge it from day to day, and God's purposes are too vast for us to trace and read them year by year.

The sting which goads a man into heroic action is worth more to his character than the ease which lures him into idleness. Our times are always in God's hands.

Every blessing we possess is in itself a suggestion of another's privation.

This broadest day of the year is a time for meditation and gratitude; unlike Christmas, it opens its arms and takes in Jews and Mohammedans.

Thank the Lord for all sweet and pleasant passages in the great story of life, and that this year the harvest has been white in those unseen fields where all that is noblest in a people's life comes to flower and fruit.

Varnished paint can be kept looking as bright as though freshly done by soaking in water some time a bag filled with flaxseed, and then using it as a cloth to clean the paint.

Thanksgiving Day Dinner.

On the guest cards have a sketch of a Puritan girl, or a man in a tall pointed hat and long cloak, with a gun over his shoulder.

Consomme a la Royale.
Oysters in ice, with thin slices of Buttered Brown or Graham Bread.
Baked Kennebec Salmon, Lobster Sauce.
Roast Turkey, Giblet Sauce.
Cranberry Jelly.
Chicken Pie.
Mashed Potato, Cauliflower, Celery, Squash, Baked Sweet Potatoes.
Lettuce Salad.
Roast Saddle of Venison, Currant Jelly.
Mince Pie, Apple Pie, Squash Pie.
Apples, Cider,
Nuts, Coffee.

Men's Clothing.

The neck bands of men's white shirts frequently wear out before any other part. Wash the shirt to remove the starch, rip the old band off and press it carefully so it will retain its original shape. Cut a new band of linen interlined with muslin, baste it in place, stitch on the machine and work the usual number of buttonholes. Make other repairs that are needed and the shirt will be ready for the laundry.

If the silk ties are soiled, try cleaning them with gasoline. Pour a little in a cup or bowl, dip a clean cloth in it, and rub the soiled places, dipping frequently. When the gasoline gets dirty, get a fresh supply and proceed as before, until the ties are clean, then hang them up where no dust will fall on them until it has evaporated. This does not fade the colors.

A suit of clothes is often improved in appearance by brushing them. Turn the pockets wrong side out and shake them. The coat collar often requires cleaning. Prepare a cleaning fluid by pouring a quart of boiling water over one-fourth pound of soap shaved fine and adding a heaping teaspoonful of borax. When dissolved, stir together so it will form a strong suds. Dip a small brush in it, lay the collars flat on the table and scour until clean. Rinse with clean water and hang up until half dry, then cover with a cloth and press with a hot iron until dry. The borax is a great help in removing grease or soiled spots of any kind from a woolen garment and is perfectly harmless. Vest and coat buttons may be purchased to replace those that are worn or lost, and, if the binding is worn in places, rebind with new braid. If there are any places to be mended, place a piece like the garment under the worn place. Sew it down firmly, allowing as few stitches as possible to show on the right side, darn back and forth over the broken threads, catching it down to the cloth beneath. Then place a damp cloth on the place and press with a hot iron.

Care of Milk Teeth.

Few persons realize what an important part the teeth play in the preservation of health. We all know that life is maintained by the food we take, and we also know that food must be digested before it can be taken into the system and form new tissue. This digestion is effected within the body by the action of various digestive fluids, but the food must be cut and ground by the teeth before these fluids can come into contact with every part of it and without serviceable teeth this first act of digestion cannot be properly performed.

If the teeth are so important, their preservation is surely a matter for which it is worth while to take a little trouble, but they can be preserved only by beginning early in life and beginning right.

Parents are too apt to neglect their children's first teeth. They know that they are bound to drop out in time, whatever care is taken of them, so it seems foolish to fill them or take any special pains to make them last. But there is many a misshapen mouth that bears witness to the fallacy of that reasoning. The milk teeth are needed to keep a place for the permanent teeth, and if they are lost prematurely the jaw will not grow properly, and the teeth will be so crowded that they must turn sidewise or be forced out of line. Furthermore, the child's food must be masticated as well as the grown person's if he would be saved from a life of dyspepsia. And, finally, for the sake of permanent teeth, the child should early form habits of mouth cleanliness.

When teeth come they should be cleaned regularly with a soft cloth and warm water, and as soon as the child is old enough he should have a little tooth brush and be taught how to use it twice a day. This will help to keep the tender teeth from decay, but more than that, it will inculcate in the child the virtue of mouth cleanliness, and teach him hygienic habits which will stand him in good stead his life long.

If, in spite of care, the milk-teeth begin to decay, they should not be extracted, but should be filled, so as to keep them from falling until the permanent teeth are ready to protrude. The child's mouth should be examined by a dentist once or twice every year so that the tartar may be removed, and any spot of beginning decay may be detected and treated. — Youth's Companion.

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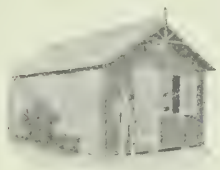
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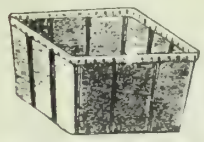


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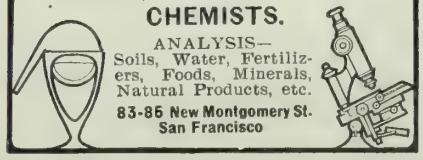
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The Markets.

San Francisco Produce Report.

San Francisco, Nov. 22, 1905

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 86⅛@ 85⅛	88⅝@ 88
Thursday	86⅛@ 85⅜	88⅞@ 88⅛
Friday	86⅜@ 85½	88½@ 87⅝
Saturday	86 @ 85½	88⅛@ 87⅜
Monday	85½@ 84⅝	87⅜@ 86⅞
Tuesday	85 @ 83⅛	87⅜@ 86

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	45⅛@44½	45⅜@44⅞
Thursday	45½@44⅞	45½@45¼
Friday	45⅜@44⅜	45⅜@44⅜
Saturday	45 @44⅜	45 @44⅝
Monday	45⅝@44	44¾@43⅞
Tuesday	44¼@43⅞	43⅞@43½

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 37½@1 37½	$1 42⅝@1 42⅝
Thursday	1 37½@1 37⅝	$1 42½@1 42⅝
Friday	1 37 @1 36¾	$1 42 @1 41¾
Saturday	1 36¾@1 36⅝	$1 41¾@1 41⅝
Monday	1 36½@1 36½	$1 41⅝@1 41⅜
Tuesday	1 35¼@1 35	$1 41¼@1 40

Wheat.

The wheat situation is not able to hold the interest of local grain people, and there has been a decline in both spot and future values. The difficulty of securing northern wheat cargoes has not materialized, as was anticipated, and the consequence is that rather heavy arrivals from the north have depressed the market. A late Chicago advice says that the easing off in the cash market seems to have been about the only news received that would in any way affect price-making, but even this was unimportant. As has been before pointed out, the market has been largely a trading affair, with the trade inclined to take profits and that in a moderate way. The undertone, considering the slow trade, holds reasonably strong. The market seems to be governed by legitimate conditions, with very little, if any, manipulation. The cash wheat and flour situation are conceded to be in a strong position. Anything of an untoward nature regarding the Argentine crop, or disturbing news from Russia, would naturally excite the world's markets.

California Milling	$1 40	@——
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 40	@1 42½
Northern Bluestem	1 42½	@1 45
Northern Red	1 32½	@1 35

PRICES OF FUTURES.

Wednesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.45⅝@1.45.

Flour.

The flour market continues unchanged, though the general opinion among millmen is that an advance on the lower grades in the near future is not improbable. It is reported here that Chinese merchants have now begun to interest themselves in the boycott and are trying to undo the damage which has been done to their trade with America. The regular shipping demand from this point continues about as usual to Central American and other nearby points, and from the north the demand for wheat and flour cargoes for Japan continues large.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The spot market for barley remains steady despite the fact that arrivals have been more plentiful and trading rather light. Bright lots of feed barley are finding ready sales at the top quotations, while the off grades are rather slow sale. Trading in futures has been rather light, but is regaining some of its activity at the present writing. May barley has been selling at figures ranging around $1.20½ per cental, and the trade seems inclined to drop December and take up May. Some trading in December was done, however, at about an average price of $1.17½.

Feed, No. 1 good to choice spot	$1 17½	@1 20
Feed, fair to good	1 13	@1 15
Chevalier, No. 1 to choice	1 30	@1 35
Chevalier, common to fair	1 15	@1 25

Oats.

The top quotations on whites are for strictly fancy Portland oats. The demand for white oats remains good, however, and all grades, unless damaged, are finding ready sales within the range of quotations. There is an advancing market on Northern oats and it is probable that the top has not yet been reached. Blacks of good quality are scarce and in good demand, while the off grades, which constitute for the most part the largest holdings, are moving rather slowly. Good seed red oats are in demand at the top quotations.

White oats	$1 47½	@1 55
Black oats	——	@1 75
Red, choice new	1 35	@1 60
Red, fair	1 20	@1 30

Corn

The local corn situation remains strong. Arrivals have been light, probably owing partly to the car shortage. It is believed by some of the trade that this will have a bad effect on prices later. At the moment both large white and the small round variety are in plentiful supply and selling rather slowly. Both white and brown Egyptian corn are moving rather slowly at appearing quotations. Eastern reports indicate that weather favorable to the moving of the new crop has caused some improvement in the situation. Sentiment is mixed and uncertain at the best, but, all things considered, the undertone is by no means weak.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 37½	@1 40
Small Yellow	1 50	@1 55
Egyptian White	1 37½	@1 40
Egyptian Brown	1 22½	@1 25

Rye.

There has been very little trading in rye, but, owing to the fact that the millers are practically the only buyers and that they are all fairly supplied, no great amount of trading is expected. Receipts have been rather light, but have been entirely sufficient to supply the demand.

Good to choice	$1 45	@1 50

Buckwheat.

Considerable buckwheat of good quality is now coming in and millers bought rather heavily on last week's decline. Appearing quotations are being well maintained.

Good to choice	1 50	@1 75

Beans.

Limas are higher at primary points and naturally an advance has taken place on the street. Jobbers are now asking $4 to $4.10 for limas. All beans are firmer in price owing to the fact that the large shipments consequent upon the finishing of harvesting have nearly all been made. Large whites made more substantial advances than any other variety except limas. Arrivals of blackeyes and bayos have been quite free and of good quality, but owing to the fact that a large part of the crop was contracted for early in the season, prices continue to stiffen.

Small White, good to choice	$2 75	@2 90
Large White	2 10	@2 50
Pinks	1 75	@2 00
Pinks, damaged	1 00	@1 25
Bayos, good to choice	3 50	@3 65
Red Kidneys	3 00	@3 50
Reds	3 00	@3 10
Limas, good to choice	4 00	@4 10
Black-eye Beans	4 60	@4 75

Dried Peas.

Those who had expected to be able to secure stocks of dried peas as low as $1.50 were somewhat astonished at the figure at which they were sold last week. Arrivals from Humboldt and Mendocino counties were very light and the rising Eastern market caused prices to advance quite materially. California green peas are now selling at $2.50 to $3 and Niles are holding firmly at $1.75 to $2.00.

Green Peas, California	$2 50	@3 00
Niles	1 75	@2 00

Hops.

The first change for the better which the hop market has had for several months took place last week. It was caused by a number of fair sized purchases by local jobbers to cover November shipments. It is argued from this fact, however, that but little of encouragement is contained in the situation as yet, as nothing can alter the fact that the supplies of hops this year, both on the Pacific coast and in other hop growing sections, is considerably above the average. Statisticians claim that there is the largest overproduction that there has ever been. Hops are offered as low as 8c to 9c for inferior grades and 10c to 12c for prime to choice delivered East.

Good to choice 1905 crop	7	@ 10

Wool.

The local wool market remains very quiet in sympathy with the Boston market. Stocks of fall wool on hand are fairly large, but are unsalable at present quotations. Some of the local dealers are inclined to believe that they have contracted for the fall clip at prices which were too high to permit of a reasonable margin of profit being received on Eastern shipment.

FALL.

Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

The shortage of freight cars still continues to prevent any heavy rail arrivals of hay. During the past week receipts in San Francisco were about the same as last week, with fully half of the arrivals coming by water. In spite of the prolonged dry weather, quotations are held stationary, though there is a general feeling that the hay crop next year may be light. Barley hay is practically out of the market and quotations are nominal.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The general tone of the millstuffs market is steady. Rolled barley is inclined toward firmness and will probably bring a higher figure before the end of the week. There is a weaker feeling in the bran market owing to recent heavy arrivals from the north. Good bran can now be bought at $23 per ton.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	23 00	@ 23 50
Middlings	28 00	@ 30 00
Shorts, Oregon	23 00	@ 24 00
Barley, Rolled, choice	25 50	@ 26 00
Cornmeal	30 50	@ 31 00
Cracked Corn	31 00	@ ——
Oilcake Meal	——	@ ——
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

The seed market is without change. With the exception of flax and canary, all varieties are now in the market in plentiful supply. Alfalfa seed is steady at 14c per pound, but it is thought that a good heavy rain would cause some advance. Canary seed is somewhat scarce at the moment and firmer in price. On November 8 the first carload shipment of flaxseed from Lewis county ever put on the market was shipped from the Chehalis flax factory. The car contained 1000 bushels and was billed to the Portland Linseed Oil Co. It brought $1 per bushel.

Alfalfa	$13 00	@14 00
Flax	——	@——
Mustard, Yellow	3 25	@ 3 50
Mustard, Trieste	4 25	@ 4 50
	Per lb.	
Canary	6¼	@ 7
Rape	2½	@ 3
Hemp	3¾	@ 4
Timothy	5½	@ 6

Honey.

Plenty of honey is now offering at the appearing quotations, but very little trading is being done, as dealers generally are of the opinion that lower prices will prevail. The quality of the receipts has been good so far this season and would indicate that the crop is quite large. Reports of shortages elsewhere do not appear to be materializing according to programme, and apiarists are beginning to think about making concessions which will enable jobbers here to move their crop.

Extracted, Water White	4¼	@ 5
Extracted, White	4½	@ 4¾
Extracted, Light Amber	3¾	@ 4
Extracted, Amber	3	@ 3½
Extracted, Dark Amber	2¼	@ 3
White Comb, 1-frames	8	@ 9
Amber Comb	6	@ 7

Beeswax.

Receipts have been light, but entirely sufficient to cover the demand. Appearing quotations are being well maintained and a choice lot of light wax would bring a slight advance.

Good to choice, light ₱ lb	26	@27
Dark	24	@25

Live Stock and Meats.

The market for live stock and meats remains firm for the present, but dealers predict that if the present cold weather continues there will be a decline in all prices before the end of the week. Veal is at the moment somewhat firmer in tone, though quotably unchanged.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4¾	@ 5½
Beef, 2nd quality	4	@ 4½
Beef, 3rd quality	3	@ 4
Mutton—ewes, 8@9c; wethers	9½	@10
Hogs, hard grain, 150 to 250 lbs	5¾	@—
Hogs, large, hard, over 250 pounds	5¾	@—
Hogs, small, fat, under 150 lbs	5¾	@—
Veal, large, ₱ lb	5½	@ 7
Veal, small, ₱ lb	6	@ 8½
Lamb, spring, ₱ lb	9	@10

Hides, Skins and Tallow.

Telegraphic advices from Chicago indicate a slight break in the hide market and a genuine reaction would not surprise the trade here. Quotations have not been changed in San Francisco, though it is doubtful if dealers here would pay full figures. Shipments of California hides East are very light and will be discontinued entirely unless there is a drop in the local market.

Bags and Bagging.

Stocks of all kinds are now greatly reduced, and except for an occasional belated order there is very little demand. In the North, where some late threshing is being done, there is still a considerable demand. With the exception of an advance in the price of wool bags, the quotations remain unchanged.

Bean Bags	$ 6¼	@——
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7½	@7¾
Fruit Sacks, jute, as to quality	6½	@7½
Grain Bags, Calcutta, 22x36, spot	7⅝	@7¾
Wool Sacks, 4-lb	—	@ 36
Wool Sacks, 3¼ lb	—	@ 34

Poultry.

There has been some inquiry for live turkeys, and 20c might be obtained before the end of the week. Fancy-dressed stock was sold at 22c, this figure being the top market price at the present moment. All large hens, roosters, fryers and broilers sell readily at the quoted price. Some special lots of large hens and roosters bring even considerably more, but small stock and poor stock are moving slowly. Big, fat ducks and geese are wanted in the local market.

Turkeys, choice Young, ₱ lb	$ 18	@ 19
Turkeys, live gobblers, ₱ lb	18	@ 19
Turkeys, live hens ₱ lb	18	@ 19
Hens, California, ₱ dozen	4 00	@ 4 50
Hens, large	5 50	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 50	@ 6 00
Fryers	4 00	@ 4 50
Broilers, large	3 50	@ 4 00
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	4 50	@ 5 00
Ducks, young, ₱ dozen	4 00	@ 6 00
Geese, ₱ pair	2 00	@ 2 25
Goslings, ₱ pair	2 00	@ 2 50
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	1 75	@ 2 25

Butter.

Receipts have been plentiful, but a good, brisk demand has maintained prices steadily at the level already attained. As is the case with other dairy produce, the past week has seen a large amount of storage stock drawn out.

Creamery, extras, ₱ lb	25½	@26
Creamery, firsts	—	@25
Creamery, seconds	20	@24
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	24	@25
Mixed Store	—	@20

Cheese.

The cheese market continues firm. Receipts have been rather light, and this fact, together with a good demand for export shipment, has had a tendency to cause an advance in prices.

California, fancy flat, new	13	@14½
California, good to choice	—	@13
California, fair to good	11	@12½
California, "Young Americas"	13	@14
Eastern, new	16	@17

Eggs.

The egg market continues to advance on fancy stock, with the intermediate grades being brought more and more into demand as the prices of select stock continue to soar. The cold weather has had a tendency to help both quality and prices of eggs now coming in.

California, select, large, white and fresh	49	@52
California, select, irregular color & size	—	@46
California, good to choice store	25	@31
Eastern firsts	23	@26
Eastern seconds	20	@21

Potatoes.

The same remarkable strength which characterized the potato market last week continues to prevail this week, and if anything, is slightly enhanced. "Never before," say buyers, "has such a situation been seen." Export shipment is now quite impossible with the southern demand continuing at its present status. River Burbanks are being held at $1 at primary points, and Salinas Burbanks have advanced to $1.40 per cental. It now develops through the potato raising section of the middle West there was an almost total failure of the crops, while the demand from the south continues as large as ever. It is even doubtful if the West will be able to supply all the demand.

River Burbanks, ₱ cental	85	@ 1 00
Salinas Burbanks	1 30	@ 1 40
Oregon Burbanks	1 10	@ 1 15
Tomales	80	@ 90
Sweet Potatoes	1 60	@ 1 85

Vegetables.

The vegetable market continues in good shape, with all kinds now in the market in good demand. String beans are still arriving from the south, and good stock is being quoted at 8c to 10c per pound. Arrivals of peas are very light, and are being quoted at 5c to 7c per pound. The late cold nights have about finished the tomato crop, and receipts have fallen off quite noticeably during the past few days. There are a few left in the market, however, but they are mostly of an inferior grade, and are selling slowly

at 35c to 50c per crate. A fancy lot would, however, bring as high as $1 per crate. Bell peppers are very scarce, and are now selling by the pound at from 6c to 8c, according to quality. Green are more plentiful and remain steady as to price.

Beans, String, ℔ lb	8	@	10
Cabbage, choice garden, ℔ 100 lbs	65	@	75
Egg Plant, ℔ box	60	@	70
Garlic, ℔ lb	4½	@	6
Onions, New Yellow Danvers, ℔ ctl.	1 10	@	1 25
Onions, Australian Brown, ℔ ctl	1 15	@	1 30
Peas, Green, ℔ lb	6	@	7
Peppers, Bell, ℔ lb	6	@	8
Peppers, Green, ℔ box	1 25	@	—
Tomatoes, ℔ box or crate	25	@	50
Artichokes, ℔ doz	15	@	60

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 30 to 30 lbs. gross.

Fresh Fruits.

The apple market for good stock is very firm, but wormy stock, which has been arriving quite freely lately, is not wanted in this market, as consumers have become accustomed to good fruit and are refusing to touch inferior stock at any price. Some such stock has been sold as low as 25 cents. Practically the only grapes now coming into the market fit for use are the Verdell and Cornichon varieties, which are selling at $1.15 to $1 35 per crate. Persimmons are now arriving freely, and selling at 75c to $1.25 per box. Pomegranates are in very light supply, and very few are arriving. These are being held at $1.25 to $2 per box, according to packing.

Apples, choice to select, ℔ 50-lb bx	85	@	1 25
Apples, good to choice, ℔ 50-lb. box	50	@	65
Apples, fair to good, ℔ 40-lb box	25	@	40
Figs, ℔ two layer	85	@	1 00
Grapes, Verdell, crate	1 15	@	1 35
Grapes, Tokay, ℔ crate	1 10	@	1 25
Grapes, Muscat, ℔ crate	1 10	@	2 00
Grapes, Cornichon, crate	1 15	@	1 35
Grapes, Black, ℔ crate	1 10	@	1 25
Huckleberries, ℔ lb	10	@	12½
Plums, Late Coes Red, ℔ crate	—	@	—
Raspberries, ℔ chest	—	@	—
Strawberries, large var., ℔ chest.	5 00	@	6 00
Whortleberries, ℔ lb	9	@	10
Persimmons, ℔ box	75	@	1 25
Pomegranates, ℔ box	1 25	@	2 00

Dried Fruits.

There is no variety of dried fruit which does not show an advance this week except raisins. Dried apples are advancing steadily and it is probable that owing to the Eastern situation very high prices will be reached. There are not 60 cars of peaches on the entire coast, whereas a year ago there were still between 225 and 250 cars unsold here. Apricots are in very light supply, particularly when it comes to desirable quality. What remains is either fancy Northern or inferior Southern. Dealers have had to turn down orders for export at such very fair prices as 8½c for choice and extra choice and 9½c for fancy. They could not secure the fruit anywhere at prices that would admit of a profit to them at those figures. For the past three or four years they have looked for a spring demand which did not materialize, but this year it is bound to come, for the reason that summer and fall purchases were unusually light and the trade will have to buy again for early spring requirements, and with any demand much higher prices will rule on the entire line of California products than have ruled for many years. As soon as any of the large markets come to the coast to buy on an f. o. b. basis the great shortage in stocks of all kinds will become at once apparent, and prices must be forced to a high level.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	—	@	7¾
Apples, extra choice to fancy, 50-lb boxes.	8¼	@	9½
Apricots, Royal, good to choice, ℔ lb	7½	@	8¼
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	5½	@	62½
Nectarines, White and Stanwick, ℔ lb	8	@	8½
Nectarines, red, ℔ lb	—	@	8
Peaches, unpeeled, good to choice	7¾	@	8¼
Peaches, unpeeled, fancy to extra fancy	8½	@	9
Pears, standard, ℔ lb	—	@	8½
Pears, choice to fancy	10	@	12
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8
Plums, Yellow, pitted	6	@	8
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4½c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c; 80-90s, 2¾@3c; 90-100s, 2½@2¾c; small, 2¼@2½c.

COMMON SUN-DRIED.

Apples, sliced	5	@	5½
Apples, quartered	4¾	@	5½
Figs, White, in bulk	2½	@	3
Figs, Black	2½	@	3

Raisins.

The raisin market remains weak. At the prevailing prices packers here are disposed to buy only in quantities large enough to cover deliveries on contracts previously made. That there is a discrepancy somewhere in the calculations of the Association is now clearly apparent with the month of November, which should be the strongest month in the year, averaging among the poorest. It had been thought that consumption would not be curtailed by high prices during the months of November and December, but it now seems as though there must be a great falling off in the demand or else supplies for the Eastern market are being obtained from other than the usual sources. Prices remain as quoted by the Association, on an 8¼c basis for fancy seeded stock.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40	@	—
London Layers, 3-crown, 20-lb box	1 50	@	—
Fancy Clusters, 4-crown, 20-lb box	2 00	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	3 00	@	—
2-Crown Standard loose Muscatel	5¾	@	—c
3-Crown Standard	6	@	—c
4-Crown Standard	6½	@	—c
Seedless Thompsons, 50-lb boxes	6½	@	—c
Seedless Sultanas	5	@	—c
Fancy, 16-oz. Seeded	8¼	@	—c
Choice, 16-oz. Seeded	8		c
Fancy, 12-oz. Seeded	6⅝		c
Choice, 12-oz. Seeded	6⅜		c

Citrus Fruits.

Receipts of lemons from the south have been rather light, on account of their being too green to ship. The consequence is that this market is not very well supplied and prices are firmer. Oranges are a shade weaker owing to heavy arrivals. The quality of the Navels now being received shows up well, but a wide range of quotations is necessitated by the receipts containing considerable small stock. New grape fruit is arriving freely; but the size of the new crop grape fruit which has arrived so far is small, which caused it to be somewhat neglected, as there is still considerable old stock in the market which is of greatly superior quality and brings a better price. New grape fruit is being held at $2.50 per box, while old stock sells readily at $3.25@3.50. Limes are ruling steady in price, with receipts being well cared for by a good demand.

Oranges, fancy	2 00	@	2 50
Oranges, choice	1 50	@	2 00
Oranges, standard	1 00	@	1 50
Oranges, Seedlings	85	@	1 25
Lemons, California, fancy, ℔ box	3 00	@	3 50
Lemons, California, good to choice	1 75	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ℔ box	1 75	@	2 50
Limes, ℔ box	3 00	@	4 00

Nuts.

With the condition of walnut crop harvest it has been found that the estimates of the crop shortage were entirely too small. The quality of the crop, however, was not affected as much by the extreme heat during the month of July as had been expected. The main cause for uneasiness now seems to be in the difficulty which buyers are having in securing holiday stock. This is not caused so much by the crop shortage as by the fact that the crop was much later in maturing this year than the average year. Prices on walnuts are being firmly held at the high figures set by the Growers' Association and an advance is not improbable. The almond market is very weak and buyers at this point are not disposed to attempt to handle any more of the crop than is necessary to supply the immediate wants of the trade, at the figures at which almonds are now being held by growers at primary points.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ℔ lb	11	@	12
Almonds, Ne Plus Ultra, ℔ lb	11	@	12
Almonds, Nonpareil, ℔ lb	11	@	13
Almonds, Languedoc, ℔ lb	7½	@	—
Almonds, Golden State, ℔ lb	7	@	—
Hard Shell, ℔ lb	5	@	—

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THE VETERINARIAN.

Answers to Inquiries.

Prepared for the Pacific Rural Press by Dr. Charles Eastman, Veterinarian, San Luis Obispo.

A CASE OF MALNUTRITION.

To the Editor:—I have a cow two years old which has been giving milk five months. She was in perfect health till about the last of August, when she refused to eat and appeared to be sick, and in a few days would be all right again; she would get those spells every week or ten days till about the first of October. She was well in evening and next morning was stiff all over; could not get her head to the ground to eat. She groans a little at times and belches up wind often. She is on dry feed at present—no grain or bran. She is a valuable high-bred Jersey. If you can, please advise me through your most valuable paper.—L. W. Leak, Auburn.

Your cow is suffering from malnutrition, due to poor feed, and, possibly, there is a digestive disturbance caused by some foreign matter which she has eaten. If this cow is valuable, it would pay you to get a veterinarian to examine her. For the condition she is now in she must have good nutritious food to build her up. Feed her green roots and fresh alfalfa.

Treatment of Mange.

In an interesting article on mange in dogs, the London Field says that genuine disorder is associated with dirt and neglect, and when it appears in the domestic pet dog or in the well managed kennel it is always a safe conclusion that the outbreak is due to accidental infection from contact with an animal affected with the malady or with something on which the parasite or its eggs have found a refuge. Treatment of mange is by no means easy, as its success depends on the remedy reaching the acari in their habitats under the cuticle into the fibrous structure of the true skin, and in advanced forms of the disorder it is necessary to prepare the skin for the remedy by thoroughly washing with warm water and soft soap, and the careful removal of all hard scabs. Numerous forms of dressing are recommended by different experts, but it is generally allowed that the selection of the dressing is not of so much moment as the method of its application. One thorough dressing is likely to do more good than a dozen of a perfunctory kind. A very favorite dressing for a horse affected with mange was composed of equal parts of oil of tar, train oil and turpentine, but the mixture was so unpleasant in its appearance and smell that its use was mainly confined to the coarser breed in large working establishments, and it was not considered to be safe for dogs, owing to the extreme susceptibility of the animal's skin to the action of turpentine.

It was only by chance that it was ascertained that the preparation might be safely used for dogs; notwithstanding its bad reputation, a well known veterinary surgeon many years ago was in the habit of using it, and affirmed in public that he never found the least injury, but, on the contrary, the greatest benefit from its use in skin disease of a serious kind in the dog, and sarcoptic mange among them. The offensive qualities of the mixture would certainly render its use impossible in a house, but in any case of mange of so severe a character the obvious course would be to send the animal to a veterinary infirmary. Probably in the early stage of the disease there is no better dressing than a mixture of flour of sulphur with sweet oil, to form a creamy fluid, which may be applied without any risk to the animal, which will probably lick it. In very bad cases it is advised that long-haired dogs should be completely shorn, so that the remedy, whatever it may be, may have a chance of penetrating into the galleries which the parasites have made. Gerlach recommends, as a remedy, a preparation which would commend itself to the owners of pet dogs, on account of the odor of vanilla which it exhales. It is simply a solution of the balsam of Peru in spirit, one part of the balsam to thirty of the spirit, which will be applied to all the diseased parts of the skin. Among the remedies which may be looked upon as domestic applications, is carbolic soap, the strength of which may vary from 1% to 20% of the carbolic acid, according to the severity of the disease. The affected parts may be moistened in the first place and the soap rubbed on before the animal is placed in the bath, in which the soap must be thoroughly washed off. It must be understood that the strongest admixture, from 10% and above, if allowed to remain on the dog, may do serious mischief.

The Gasoline Engine.

The use of the gasoline engine on the farm is now receiving marked attention. It is a subject which appeals to the farmer in many ways. It is a power cheap to install, cheap to operate and requires a minimum amount of attention. Anyone about the farm can, in a very short time, learn all there is to know about caring for and running a gasoline engine.

Being portable, it may be used for a greater variety of work than any other power available to the farmer. Attached to the pump, it is better than a windmill; to the sewing machine it is better than a treadmill. It may be attached to the cream separator, the churn, the feed cutter, and in fact made to do an endless amount of work about the farm. The Western Malleable & Grey Iron Co., 127 Chase street, Milwaukee, Wis., offer a very interesting story in book form, free to any farmer or any member of the family who will send for a catalgue of their well-known Simplicity Engines.

Removal.

The Deere Implement Co. has moved to its new building on Townsend street, between Fourth and Fifth. The structure extends through to Bluxome street, wherein are the offices and show rooms, Nos. 25-27-29-31. Its new location has much greater storage room and better shipping facilities than the old one on Market street afforded. California farmers are cordially invited to visit the new place.

High-Priced Eggs

Every one would like them to sell, and can just as well have them. We guarantee Security Poultry Food will make hens lay. Ask our dealer in your town. Try it.

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MULES for sale, broke and unbroke; mules to rent. CHARLES WESLEY REED, Mills Bldg., S. F.

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EACH VARIETY THE BEST OF ITS KIND.

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The herd is rich in the blood of others in that test.

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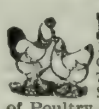


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THE DAIRY.

Building up a Dairy Herd.

At a recent dairy meeting in Michigan, Mr. H. S. Shaw presented the old doctrine of dairy improvement in this way:

At present, there are two distinct phases to this subject. First, there is the building up of the dairy herd of pedigreed animals of some distinct breed, and second, there is the building up of a herd of useful milk producers by a system of upgrading which ought to be so conducted as to lead up to the former. We are of necessity forced to build up dairy herds. First, because few dairymen at the beginning of these operations have sufficient capital to purchase dairy herds out and out; second, as little more than 1% of our cattle are pedigreed, such animals could not be secured, and third, dairymen who know their business will not dispose of their best cows unless at fancy prices.

Breed up Dairy Herds.—The facts of the case are that if we are to possess good dairy herds, we will have to breed them. If we are to do this successfully the first thing to do is to stop and inventory our stock. Let us determine how many good cows we have and how many are not profitable. We are too apt to keep cows without thought as to this question, just because they are cows. We cannot always determine which the best ones are by their appearance, or by weighing and testing a mess of milk once a month or so.

Though a little extra labor is involved in determining the actual flow of milk during a period of lactation, and also the amount of fat produced, these extra efforts are abundantly repaid in numerous ways. First, the unprofitable cows can be culled out and sold to the butcher; second, if records are kept, any falling off in the flow is detected to its fullest extent at once, and remedial measures sought; third, the keeping of records stimulates a desire to attain still greater results each succeeding year.

How to Start.—In starting with a herd of grade, cross-bred or mixed cows, it is necessary first to select the good ones, dispose of the unprofitable ones and replace these as far as possible by seemingly better ones. The next thing to do is to decide on the kind of blood to be used for improving the herd. Once this point is decided it should be adhered to tenaciously. The greatest menace to the breeding of dairy herds in the past has been the indiscriminate mixing up of the blood of a number of breeds, including both beef and dairy types. Beef and dairy product prices do not always fluctuate alike at the same time.

There are too many instances on record in which milk producers have been bred to beef sires with a slump in the butter and cheese markets, and then these and their progeny bred back again to dairy sires with an improvement in the price of dairy products. Nor has this evil always been confined to an admixture of the blood of beef and dairy types. Instances are fully as numerous where herds of common cows are bred, say first to a Holstein sire, then the owner wants to make a change and follows with a Jersey sire, then probably uses a Guernsey. The chances for upbuilding a good dairy herd are remote where strongly antagonistic characteristics are freely intermingled.

The Foundation Stock.—After we have decided upon using the blood of some particular breed for improving our herd of common cows, the first thing to do is to purchase the best bull of that breed the pocketbook will allow—a pedigreed bull, not a grade. If possible, also at the same time, purchase one or two pedigreed females of the same blood as the bull. In purchasing bulls, the general practice is to secure calves under 12 months. In so doing we must not only look for a good individual, but also for one whose ancestors have been good performers as breeders and producers at the pail.

The safest kind of a bull to buy to breed from to-day is the one least sought after. After bulls reach the age of three or four years, no one seems to want them and they are sold at canner prices. A bull at this age should be a better animal to buy for breeding purposes, providing he has been properly fed, handled and exercised. Too many good bulls are ruined through neglect, improper food and undue confinement in dark, filthy box stalls. In purchasing a mature bull, we have the advantage in being able to ascertain the quality of the calves the bull has been producing, while this is not true in the case of the young one.

Kind of Cows to Use.—Having then secured a bull and one or two pedigreed females of the same breed to add to the herd of common cows on hand, let us breed this bull until such times as his progeny begin to come back to him and then get another of the same blood, better than the first, and so on continuously. In this manner we should look for each succeeding generation from the grade cows to conform more and more nearly to the type and qualities of the breed of the sire until finally they would be equally as good from a standpoint of utility as producers, but we should not forget that as breeders many generations would have to occur before they would be possessed of a comparable prepotency and they could never possess pedigrees.

At the same time we should look for the progeny of the one or two pedigreed females to grow into a nice little herd at the end of ten or twelve years, which could be made to replace the high grades until finally a full blood herd would be secured.

It is absolutely necessary for a man with limited capital to breed up a pedigreed dairy herd slowly in this way and also much safer for the man with means and little knowledge of the business. In both cases there is opportunity to become familiar with the breed and individual characteristics. It is better to grow up in any line of animal breeding than to jump into it.

Creamery Operators' Convention.

The arrangements for the programme of the annual convention of the California Creamery Operators' Association have been completed, and Secretary Roussel is hopeful of a great meeting at Modesto on December 8th and 9th. The order of the programme is as follows:

Address by President H. P. Glazier, Oakland, Cal.

Subjects: "Care of Creameries and Skimming Stations," by Henry Lyons, San Francisco. "Our Work With the Patrons," by H. J. Faulkner, State Dairy Inspector; "Care of Milk and Cream," by Prof. E. W. Major, University of California; "Butter and Cheese Making," by A. Jensen, Ferndale, Cal.; "Marketing of Dairy Products," by A. B. Evans, Fresno, Cal.; "Benefits Derived From a Dairy School Course," by W. W. Grant, instructor University of California dairy school; "The Bringing Together of the Creamery Manager, Operator and Patrons for the Purpose of Advancing Educa Standards," by Hon. Peter J. Shi Sacramento.

Scoring of the butter and cheese exhibits. Secretary's report and election of officers.

At the annual banquet the toastmaster will be W. H. Saylor.

The Worm Pest.

Hogs will begin to cough, drag hind parts, go off their feed, and do no good if wormy. Horses no better. Use Security Worm Powder. **Guaranteed.** Dealers everywhere.

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Like a Crowbar

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Stump and Tree Pullers

Self-anchoring and Stump-anchored. Something new. Pull an ordinary stump in 1½ minutes. 1 to 5 acres at a setting. Different sizes to suit all kinds of clearings. For illustrated catalog address

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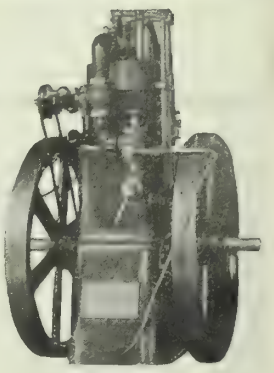
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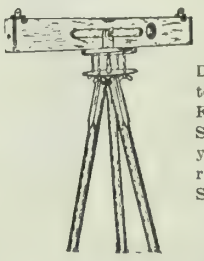
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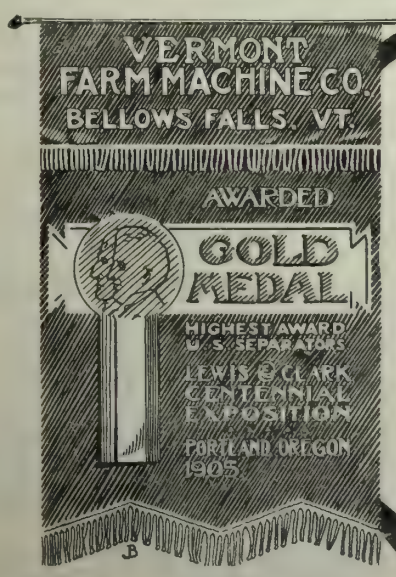
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Sweet, sour Pomelo and Citrus Trifoliata seed bed plants.

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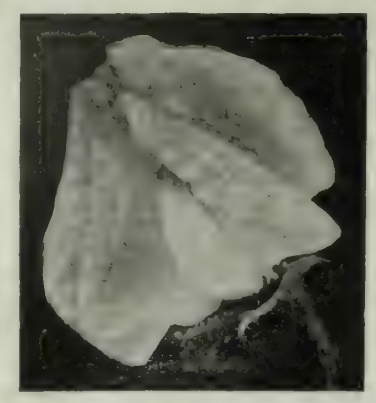
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Can be planted until August 1st and mature crop.
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Trial packet, 10c.; 1 lb., 50c.; 10 lbs., $4.00, postpaid.

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Patrons of Husbandry.

The Aims and Objects of the Grange.

By Sister Florence E. Leimbach at Elk Grove Grange, and by resolution transmitted for publication in the Pacific Rural Press.

We, the members of the Grange, are the representatives of the greatest industrial interests of the most prosperous and successful nation of the world.

Agriculture was first through all the ages of the past, and will continue to be through all the time to come, the one indispensable industry. Its progress, its development, its success indicate the advance of civilization and underlie and support all commercial interests. All people of the world depend for food and all the comforts of life on successful husbandry.

Our organization is the largest and most influential organization representing this basic industry in the world. United by the silken cord of fraternity, it is laboring to make happier and more prosperous homes on the hills and valleys of New England, amid the sugar, rice and cotton fields of the South, the corn, wheat and pastural lands of the Central States, as well as to increase the sunshine and prosperity of the farm homes of those who dwell in the fertile valleys fanned by the breezes of the Pacific.

It is the purpose of this great fraternity to increase happiness and make agriculture more prosperous in all parts of our glorious country. It has still higher and grander objects, among which are, to elevate the standard of intelligence among the farming population and to inspire in them more exalted ideas of citizenship.

Successful agriculture can not be secured by physical labor alone. Past methods have exhausted the soil to an alarming extent. Such system must be adopted as will restore lost fertility and increase it. The Grange is the school where this system should be taught. The farmers of to-day are the students, and the Grange the school, the medium for the exchange of information and methods between farmers that all may profit by the knowledge gained by each. This is practical co-operation that is profitable alike to farmers and to all people.

Successful agriculture does not depend alone on methods of culture either; distribution and sale are equally important. Economy should be practiced and expensive methods dispensed with. Farmers of the past have allowed others to attend to the distribution and sales of their products. This mistake must be corrected and the farmers must do it. Unorganized farmers are powerless in this age of co-operation. Hence this duty devolves on the Grange, the school of the farmers. The farmer should make a study of his farm, his cattle, his horses, and endeavor to improve each, experiment and tell of his successful or unsuccessful experiments to his brother farmer in the Grange.

The Grange was consecrated to develop the best social conditions, to promote good citizenship, to improve agriculture and to secure equity in the business relations of the agricultural classes with the industrial and commercial interests of our country. To broaden our lives and minds, the Grange has established libraries, encouraged Grange reading circles, held Farmer's Institutes, and given public lectures.

For twenty or more years, the Grange advocated the building of the Isthmian canal. The Grange and the country are to be congratulated now that this great work, destined to revolutionize the transportation question, is in the course of construction. Free rural delivery came as a direct demand of the Grange.

No feature of educational work in which the Grange can exert an influence is more promising than that of introducing into the public schools the principles of agriculture; teaching the coming generations of the composition of the soil, the nature of the rock formations that finally make soil and the growth of vegetable and animal life.

Governor Chamberlain of the State of Oregon says: "Greater attention ought to be paid in the public schools of the State to instruction along the line of field and farm. The trend of public thought is in this direction, but until concentrated effort is put behind it to force this thought to the front, and cause it to be put into practical operation, not much can be expected at the hands of those in authority."

No event in the Grange calendar is more generally observed or productive of better results than Children's Day. In our own Grange it has not been very successful, but in some places it has proved quite beneficial. We must remember that the children of to-day are the men and women of to-morrow and that what good we impress on their minds now will be long remembered. Teach them to love the country. Life on the farm is nearer an ideal life than anything the city can afford. As a place to live, the farm has many advantages over the city residence. The object of the Grange is to point out these important ideas and impress them strongly on the young minds.

Why should not the order of Patrons of Husbandry have a strong growth in our State at this particular time? If the aims and purposes of the Order were only better understood by the farmer and his family there would be no question of growth. All would seek to benefit themselves and their neighbors by co-operating and building up in every section working Granges.

This is the only Order of farmers and those directly interested in farm pursuits that has a complete organization—local, county, State and National.

Think for a moment of the opportunity and effectiveness of doing things when the Patrons of Maine, New York and California all move together, co-operate, to accomplish a common benefit, as for instance the "Rural Free Delivery" accomplished and the "Postal Progress" soon to be accomplished.

President Roosevelt said in a recent lecture: "To make better citizens, to lift up the standard of manhood and womanhood, is to do the greatest service to the country. The stability of this Government depends upon the individual character of its citizenship. No more important work can be done, important to the cause of Christianity as well as to the national life and greatness."

This is the highest aim of the Grange. Let each member do his or her part to build up the Order and help develop this better manhood and womanhood.

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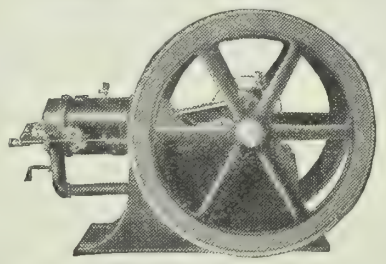
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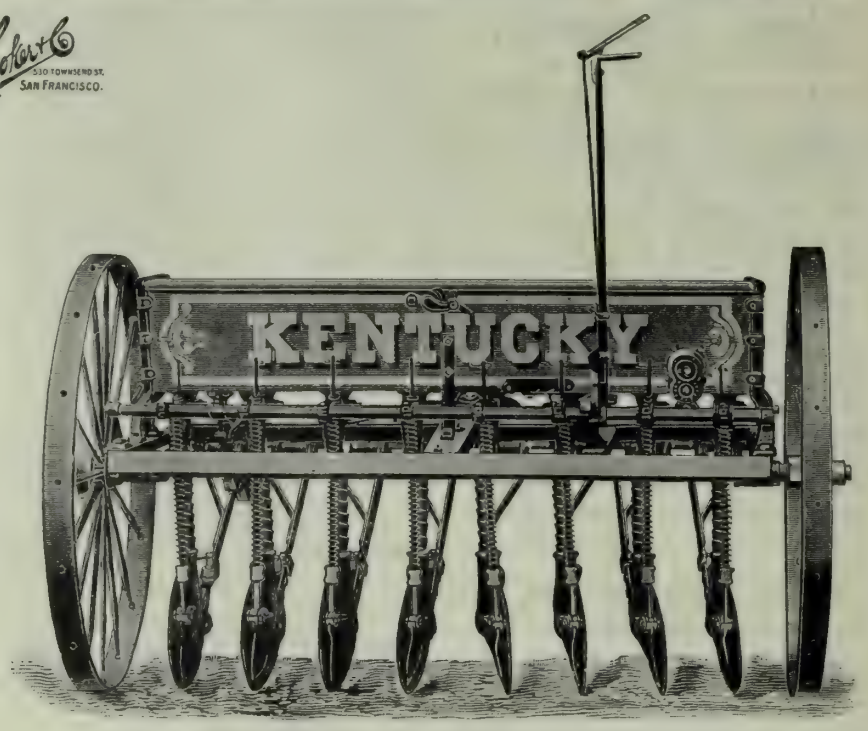
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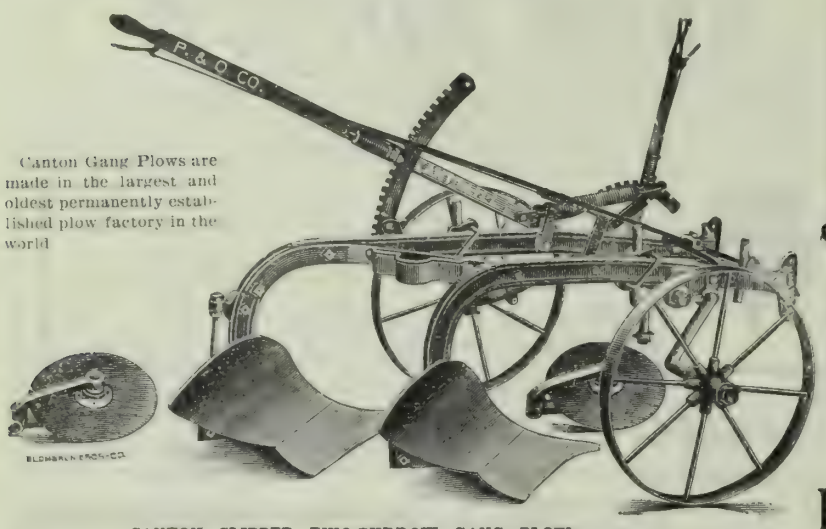
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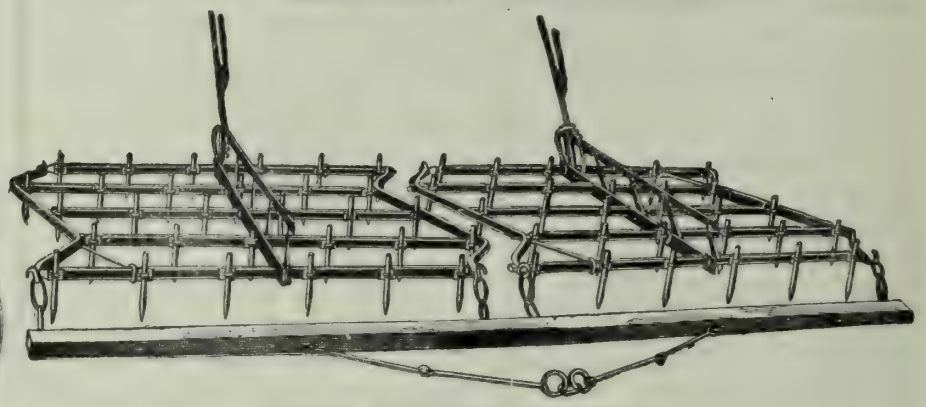


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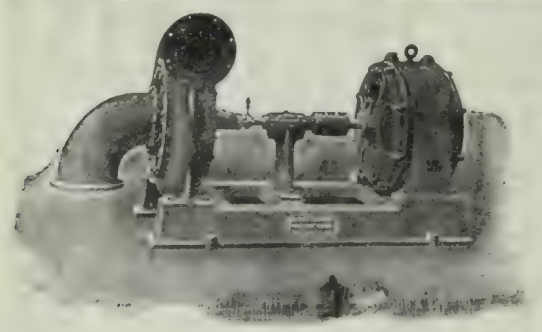


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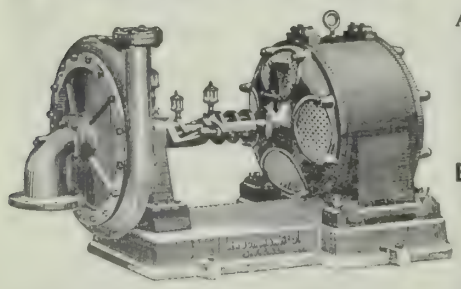
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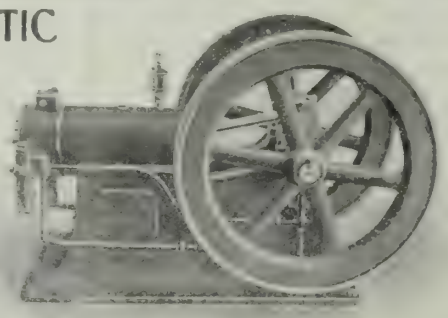
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THE PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 23. SAN FRANCISCO, SATURDAY, DECEMBER 2, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

A Group of Lakes in the Sierra Nevada.

There are no more beautiful lakes in any lacustrine region of the world than those of the high Sierra Nevada mountains, which are part of the American-Cosumnes water courses now being discussed as a probable source from which to secure the domestic water supply of San Francisco. These lakes lie among the highest peaks of the range, being from 5000 to upwards of 7000 feet above the sea. They are practically the meltings of snows descending from the snow fields upon the bare and often polished granite, and caught on their way out of the range in receptacles naturally excavated in the same granite. The basins or bowls in which these waters lie have been cleansed by the scourings of untold ages and the waters are as pure as the skies, and the higher reaching mountains from which they are drawn. The water when held in a goblet presents a beautiful crystalline clearness; its color in the lakes varies from a light green, where shallow, to a dark rich cobalt where depth is attained. This marvelous blue setting is like a sapphire in a surrounding band of terra cotta, with here and there patches of white marking the fields of "old snow" among the rugged points of the high mountains. The magnificent distances, the massiveness, silence, solitude and purity of it all are enduring memories with one who has visited the locality.



Big Echo Lake Amid the Summits of the Sierra Nevada.

The most interesting of the lakes are the Echoes, Big and Little, which are connected by a narrow channel in the solid granite, their combined length being about 3 miles and their area about 480 acres. This beauteous pair lie at an elevation of 7450 feet above the sea, close to the very summit of the range; indeed, Lake Tahoe, which can be plainly seen from their banks, lies 1224 feet below them on the eastern slope of the range. In the clear, cold atmosphere which rests upon these lakes the voice reverberates from hill to hill of the surrounding wall, and dies away in the distance rebounding and re-echoing as the sound recedes. The stroke of the oars in the locks, the splash of the blades in the water will, in the silence and the still air, find their counterpart amongst the ravines of the shore and come back to the oarsman like messages by wireless telegraph. It is from this phenomenon that the lakes are named.



Little Echo Lake, One Thousand Feet Higher Than Lake Tahoe.

Farther over to the north and at an elevation even higher than the Echo lakes, lies Lake Harry, presenting its beautiful breast of water so clear and deep that it looks like a lake of indigo fringed with a border of tamaracks. Above and about it is the wildest of alpine scenery. Bare rocks, glaciated and glistening, strewn with innumerable flints, with sides so steep that a goat could scarce find footing, occasionally there rises from some break or crevice a stunted juniper, gnarled and twisted, bereft of foliage on its north and west where the sharp boreal hurricanes have cut away its limbs, every fiber of its form displaying a terrible struggle for life amidst warring elements. It is a picture not alone of desolation, but abounding in evidences of intense atmospheric action; a region of maximum storms, where th wild gales blow with the utmose velocity.



Lake Harry—Indigo Depths Fringed With Verdure.

Advancing farther to the north extends a district most remarkable; it is a vast field of granite bedded lakes connected one with another, but spreading over many square miles. From an eminence above Lake George the field breaks in sight, and suddenly a great basin of naked rocks interlaced with water presents itself to view. Beyond, the reddish ochre of the bare hills splotched with snow, and to the left, the broad lake of dark blue, surrounded by tamaracks, presents a picture to which the brush of the artist or the camera alone can pay a proper tribute. Farther west is Lake Marguerite, and then there is an array of nameless lakes and mountain pools with splashing cataracts between. This is the "Devil's Basin, Desolation Valley or the Medleys," as it is sometimes called, a wonderful network of water, threading the rocks, leaping from pool to pool, and finally passing out of the region through a great fall which drops in foaming mass more than 150 feet.

The State highway between Lake Tahoe and Placerville traverses the Echo Lakes country, and on past the basin of Lake Audrain. This, too, is almost at the summit, and is a typical alpine lake. If as proposed these beautiful lakes shall become the property of San Francisco, and are turned into a system of water supply, a dam at Audrain will raise the water to a considerable height, and it will become the peer of the most beautiful of them all.

The waters from this great chain of mountain lakes now flow into the South Fork of the American from which, some miles below, a canal conducts them, clear and pure, to users farther down. But the proposed San Francisco system provides that the water shall be carried by a

(Continued on Page 358.)

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SAN FRANCISCO, DECEMBER 2, 1905.

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The Week.

It is Thanksgiving week and our issue goes forth to readers one day earlier than usual that our employes may cultivate the Thanksgiving spirit. The day promises to be very widely observed and as we write in advance of the day it looks as though the weather might afford the contrast which Californians delight to draw—the delights of a soft and balmy air here against the discomforts and dangers of the opening winter, while the dreariness of November is yielding to the more severe but still more tolerable freezing of the Christmas month. It must be admitted, however, that some parts of the State would be more thankful this year if the skies were not so soft and clear and copious liquid refreshments in the field would heighten the cheer in the farm house, but our long experience in California teaches that one who repines simply indulges in woe which subsequent events may not justify and if one really wants wretchedness he can surely get it by filling himself with forebodings. Therefore, if one desires the chances of suffering twice let him hasten to suffer first in anticipations. He may then suffer again in realization and be doubly miserable. But, if he desires to suffer not at all, avoid anticipation and he may go scot free. Thus runs our Thanksgiving sermon for this year.

A holiday week is not good for trade, except in special sumptuary supplies. Staples usually await the return of the broader trade spirit. Our Market Review on another page gives such facts as can be gleaned by our reporters.

We look with much interest upon the propositions made to the end that the metropolitan cities of the State shall secure water supplies from sources aloft and afar where nature provides the inestimable element in vast quantities and of the highest purity. It may have been a natural proceeding for our youthful cities to secure first what was closest at hand and to contend with the farmers for the water which runs from nearby hillsides or underflows their productive lands. We say it was natural and perhaps unavoidable, but it was unwise, because the waters now supplied to San Francisco should have remained open to agricultural uses. What a vast increase of value there would be to the rich lands of southern Alameda county if an irrigation system had been early established and the waters of the Niles canyon stored for summer use in the growing of high value crops. This was not appreciated at the time and the water which belonged to the land was sold for use in the city, but it can now be clearly seen to have been a great mistake. Similar comment pertains to the capture of water which should be used in the Santa Clara valley, either upon the surface or below, as the case may be. Similar also should be the judgment upon the way in which Los Angeles has gone into its immediate suburbs and taken water which should remain with the land to assure its profit and productiveness. We have no early interest in the matter except the broadest public concern, and this would indicate that not only should recourse to nearby water supplies for great cities be abandoned, but that what is really agricultural water should be returned to the agricultural land to which it naturally pertains through some equitable arrangement. If San Francisco and Los Angeles can go to the Sierra Nevada for city water as pending propositions in both cities now provide for, it will not only be one of the greatest municipal blessings, but one of the most important agricultural improvements that can be thought of. It would mean that water which the city should not take would come to it in the form of fresh and wholesome food supplies which will be progressively more important, and that the suburban lands, instead of being made arid that the city may drink, would be covered with homes of prosperous producers, a new clientele of the expanding metropolis itself.

Horses by trainloads for the East was a thing anticipated in our columns a few weeks ago and last week realized. Four special trains, operating on passenger schedules, left Sacramento on Monday and Tuesday, carrying the shipment of horses from the Rancho del Paso, to be sold at auction in New York. The shipment, it is understood, is valued at $1,000,000 and is insured for practically that amount. The cost of transportation of the 600 horses to New York will be about $60,000. There was a foreman for each train and two grooms to each car, while the last car of the train carried the shipper's agent and railroad officials. It is a unique movement, even from a State which is always doing things both large and unique.

Interesting also in the way of stock movement is a shipment of Angora goats from San Jose to Vladivostock. As far as known, this is the first shipment of Angoras to Eastern Asia and it is particularly interesting, because the goats came originally from Western Asia and return to their own continent with the stamp of American breeding upon them. Through the enterprise of California breeders these beautiful animals were brought out from under the Sultan's eye in spite of strenuous restrictions and are now sent to comfort the Czar in his tribulations. But how will the refined Angora take to the delights of Siberia? That remains to be seen—though, of course, the Angora at home has a harsher environment than in California. We have always claimed that in the development of Siberia, California should be called to furnish much high class material.

Another thing about California is becoming more clear each day and that is the estimate placed upon the State for residence by those whose duties have called them to all countries and who may be presumed to know the world pretty well. The lists of retired admirals, generals and smaller naval and military fry, who have laid down trumpets and side arms after honorable careers in their country's service, are getting very long. Either they build homes upon the hills overlooking the Pacific, or they locate in the middle of the broad valleys and gaze upon the Sierra summits, as the hero of Santiago does from his fertile fields in Kern county, while his swine grunt and his herds low music sweet to his agricultural ear. The latest gain to California, according to current dispatches, is Lieutenant-General Chaffee, head of the United States army, who has just reached California to remain until Christmas, and during his stay will select a home on the Pacific Coast for occupancy after his retirement early next year. Among his many tokens of honor, General Chaffee will bring to California the insignia of Grand Commander of the Legion of Honor, bestowed upon him by President Loubet during his recent visit to France in connection with the army maneuvers. General Chaffee will be welcomed not only by the delightful city where he proposes to choose his home, which, according to current report, is Berkeley, but by the State at large.

QUERIES AND REPLIES.

Cherries and Pears.

To the Editor:—What do you think of the dwarf or Mahaleb versus the Mazzard stock for the cherry? The best cherry orchard in this county is said to be on dwarf stock. Occasionally a cherry tree will exude a great deal of gum and die. Is there anything known about this disease? Is it a settled fact that the roots of the Northern Spy apple is resistant to attacks of the woolly aphis? Judging from the experience with pear blight in other places, would you advise the planting of a Bartlett orchard here? I have had very fair success fighting the blight in fifteen-year-old trees, but with young trees I am afraid it would be "another story."—Fruit Grower, Sacramento river.

The Mahaleb stock for sweet cherries seems to be more highly favored in your district along the Sacramento river than elsewhere, and the experience of growers with it is more satisfactory than with the Mazzard, which is best for lands where moisture is regular and not likely to be excessive. The Mahaleb root is, on the whole, more hardy than the Mazzard. Judging from our observations in the Sacramento district, we should favor its use, but all varieties do not take well on the Mahaleb, and in some cases double working is necessary to establish them. Cherry trees will occasionally gum over freely and die, as you describe. No definite cause has been assigned, but there is very good reason to believe that the trouble rests either in the individual weakness of the specimen or in the fact that growing conditions just where it happens to stand are not favorable. The trouble is certainly in the root and the gumming and dying back are merely the outward signs of it. It is fully demonstrated that Northern Spy apple root is resistant to the woolly aphis, but that means, of course, not the Northern Spy budded on the ordinary seedling, but that the root must be grown actually from the Northern Spy wood. The danger in planting Bartlett pears at the present time is certainly great, but if you have reason to confide in your success in fighting it we see no reason why you should not continue planting. Your young trees previous to blooming should be comparatively free, unless the blight has been introduced in the buds which were used in starting the trees, and you can continue the vigorous growth of the young tree and protect it from blight by carefully removing all bloom buds as soon as they appear. This will bring the tree up to a stage of growth and development where your success in cutting out the blight will probably enable you to continue the profitability of the trees. At the present time the extirpation method as being experimentally applied in California must be regarded as being very promising in the hands of those who are willing to work persistently and intelligently.

The Spot Trouble in Apples.

To the Editor:—I am sending you a box with a few Bellefleur apples. Will you kindly advise me the cause and remedy for the many small brown specks? As the apple gets older the small spots work to the center. This did not appear when the apples were picked.—Grower, San Luis Obispo.

Your apples show a trouble which is rather frequent with the Bellefleur and some other varieties, and which has not been fully explained. The spot which appears under the skin and causes a little depression, and continues afterwards here and there throughout the whole flesh of the apple, has been carefully examined, but no organism has been found which could cause the trouble. It seems to be rather a failure or wasting of the cells composing the tissues of the fruit, and as this proceeds discoloration also appears. So far as we can judge at present this trouble is most frequent with apples which are grown under rather difficult conditions, where, for instance, the moisture is not quite enough during the latter part of the season to continue the vigorous growth of the fruit. Bellefleurs grown in rich, moist land in the Watsonville district, for instance, are little troubled with it. As you get out upon drier uplands, shallower soils, where the tree seems to be unable to discharge its full duty during the latter part of the season, this trouble occurs, and, as you say, it manifests itself after the fruit has been gathered. For this reason it seems natural to look upon it as an indication of some defective development in the fruit itself, which prevents it from displaying a normal soundness and keeping quality.

All we can suggest is that you try to keep your apples growing a little longer next season by resort to irrigation, possibly to the use of fertilizers also, and increase the thrift and vigor of the tree.

Palm Seedlings---Forcing Vegetables.

To the Editor:—How are ornamental palms propagated? I have a driveway flanked with Phœnix Canariensis and the California fan palm. The former shows a pod at this season, and sheds seed lavishly; even a hot bed, however, fails to germinate the ripe seed. Is soaking in hot water necessary, and how does the fan palm reproduce itself?

In your "California Vegetables" you describe a method of forcing vegetables in winter by filling a furrow with strong barnyard fertilizer, tamping, covering and then sowing. Experiment with this method in the case of peas and beans has resulted in a stunted growth, the vegetables behaving like those described by your Imperial Valley correspondent of some months back—an absolute standstill after a little growth, then spindling and dwindling. The soil has a little alkali, the water a little more; is this the cause, and, if so, how can it be overcome? Or is the crude manure too heating in combination with a southern California sun?—Experimenter, Santa Barbara.

Canary date palms and California fan palms grow very readily from the seed; the former particularly so, and in fact often volunteers if the ground under the tree happens to be kept moist. No treatment should be necessary except to keep continuously moist, but not wet. To put in ordinary soil in full sunshine and water once in a while gives an alternation of dry and wet which does not give good results. Try the seed in a place of half-shade, cover only a little with light, sandy loam and cover above with a thin litter of leaves and sprinkle frequently, but not too freely, and you ought to get palm seedlings as freely as apricot seedlings which are very easy to get.

The manure trench proposition has to be handled with great care and wisdom. Too much manure will burn up almost everything you put over it, therefore do not make the layer too thick. In the summer such an arrangement will be dangerous both in heat and drying out too much moisture. The arrangement is particularly one for the rainy season, and not for the dry season. The only good place for coarse manure in the dry season is upon the surface of the ground where it may do some good in shading the soil. In the cool wet months it may be useful underneath. Of course alkali either in soil or in water would cause plants to spindle, but we imagine you have been trying to make a winter prescription work in summer, and that your plants over the manure have either been burned or thirsty.

Deception in Grafted Walnuts.

To the Editor:—As you are answering many questions about walnut growing and are recommending English walnuts grafted on California black walnut root, I deem it my duty to tell of some of the dangers which beset careless tree buyers. One man, known to me, wanted grafted trees, and he had corresponded with a nurseryman who offered grafted trees very cheap, and he brought me along to inspect the trees. We did find about half a dozen good grafted trees at the salesyard, but the man who was dealing in nursery stock told us that grafted trees were no good, and he recommended ungrafted trees, and gave many reasons why grafted trees were no good, but none of those reasons was based on horticultural facts. I am informed that some good grafted walnut trees were sold at $1.75 each last year, but this man said he could get grafted trees for less than that price; then he told us that he had a nursery where he had grafted trees. We drove up there, and found a nursery of different kinds of stock, most of it walnuts which had been budded and grafted on the soft shell variety. We did not find any black walnut roots or trees, but all grafts were dead, as the work had been done in the common way of grafting apples in the nursery—raw. As the man talked to us, I judge that he intended to sell those trees for grafted trees; but we did not find one living graft. Another thing that he was not honest about was that he had some very fine walnuts in a paper bag in his office which he said were Santa Barbara soft shell, and that all his stock was from the same kind of seeds. We found this to be untrue, because we dug deep into the ground and dug up the shells of the nuts that had been planted, and found them to be from very small nuts.—Fruit Grower.

These observations were made in a distant part of the State, and all names of individuals and establishments are suppressed. They are not known to the public anyway, and they are not advertised in the Pacific Rural Press, so our readers need not apprehend that any reflection is cast upon reputable nurserymen. The caution is a general one: one should not deal with tree dealers whose honesty he does not personally know or to whose business standing he is not in some way certified. Mistakes will occur in any business, of course, but there should be some evidence of honest intention. It is, of course, legitimate enough for a man to praise seedling walnuts if his conviction or his business interest warrants it, but to deceive or to knowingly sell one for another is reprehensible. More than this we cannot say. It is not within our province to interfere with trade in trees and plants. The old common-law principle that "the buyer must beware," applies to nursery stock as to other goods, and if a man can be satisfied with a bogus tree, or with a bogus coat, there is no way to reach the case except to educate him to better knowledge. This, of course, is a long process, and many people will be swindled before their education in complete; in fact, some people get education most readily by being swindled.

Water for Hogs on Alfalfa.

To the Editor:—Will you kindly tell me whether, if I put hogs into an alfalfa patch that has been cut, but shows a very short growth, yet is good grazing, it would be necessary to provide water in the patch for them also? If so, I will have to pipe it in; but I desire to know if the water is necessary, or if the alfalfa itself would furnish sufficient moisture to the animals.—Amateur.

We never have seen nor heard that hogs could be kept for any length of time on alfalfa pasturage without drinking water. Where it may be difficult or expensive to provide water in a field it is customary to let the hogs go to their own drink at intervals —say once a day. On all general principles good drinking water should be provided. If any reader knows otherwise, let us have the information.

The Red Gum.

To the Editor:—I send you under separate cover a sample of seed pods, leaves, flowers and stems of a eucalyptus which is growing here, for the purpose of ascertaining the true name. It grows strong and bears seed profusely, and if it is a standard kind I want to propagate from it, provided it is your opinion that the seed will germinate.—Enquirer, Madera.

The tree is the red gum (Eucalyptus rostrata) and it is one of the best—more hardy than the common blue gum, yielding a good, hard and durable wood, which is, however, rather difficult to split; but the tree is good for honey bees, good for wind breaks and general forestry puroposes. Near the coast it often volunteers from its own seed, and there seems to be no reason why you cannot get plenty of trees from the seed which you gather by using methods which are suited to your interior conditions.

Morning Glory Again.

To the Editor:—Will vitriol kill morning glory? If so, how is it applied? Is there any other method of which you have knowledge that will destroy it? Kindly give me full particulars of any method by which this pest can be destroyed. It has cost me $70 this summer in attempts to destroy it, therefore any information pertaining to its destruction will be gladly received.—Farmer, Geyserville.

We regret to say that we do not know of any application that will kill morning glory without destroying the fertility of the land. This is true of common salt and of other chemicals which could be applied. The only practical method of keeping down morning glory known to us is to continually cut it off under the ground with a flat-toothed cultivator or weed knife during the growing season.

For the Poultry Tick.

To the Editor:—Your Livermore subscriber asks how to avoid the chicken tick. If your poultry house is infested burn it, if detached; if not, tear it down and make a bonfire of it. Build the new house as far from the old site as possible. Hang the roosting poles on wires, being sure that even the tip of a hen's tail can't touch the walls. Where the wire is twisted together at the top, fasten a piece of cotton batting and keep it saturated with kerosene oil. Be sure your poultry is free from lice as well as ticks when you put them in the new house, and Mr. Tick is up against it, as he usually hides through the day; but go in about 10 p. m., and you will find thousands of them traveling the walls in all directions.—W. W. Parker, Ceres.

That is rational and straightforward. Thank you!

Grazing on Forest Reserves.

To the Editor:—Please let me know through your paper in regard to the government reserves in Sierra and Nevada counties, and to whom I should write to or see to get a permit to graze on same.—Stockman, Lincoln.

We cannot at the moment tell to what local authority such applications should be made. All desiring such information will get immediate response by addressing Mr. Gifford Pinchot, Chief of Forestry Service, Washington, D. C., or he will name the local officer to whom application can be addressed concerning any particular reserve.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending November 27, 1905.

Alexander McAdie, Forecast Official and Section Director.

Sacramento Valley.

Cool weather continued most of the week, with frequent light showers and generous rainfall at the close. The rain of the preceding week was of very little benefit, as it was followed by drying north winds, but much good will result from the rains of the current week. The soil rapidly absorbed the rain as it fell, and in many places farmers will resume plowing at once. Pasturage was greatly benefited and orange orchards were greatly improved by the rain. A considerable portion of the orange crop has been harvested and picking is progressing rapidly; the oranges are well colored and the yield is very good. Olive picking and preserving are in progress; the yield and quality are about average.

Coast and Bay Sections.

The weather was cool and partly cloudy most of the week, with frequent light frosts. Showers fell at intervals in all sections and heavy rain fell Sunday night. The northerly winds following the light rain of the preceding week absorbed the moisture in the soil, but the later rains have been of great benefit to pasturage and orchards, and will enable farmers to resume plowing and seeding. Range feed has become very scarce in most places and cattle were in poor condition, but the generous rains will soon start feed. Orange orchards at Cloverdale were greatly benefited by the rain; the long drought caused some damage to the oranges, but a fair crop is now probable.

San Joaquin Valley.

Partly cloudy weather prevailed during the week, with light showers Thursday and Friday and generous rains at the close of the week. The showers Thursday and Friday were too light to be of much benefit, but the later rain will soften the ground for plowing and start the green feed. Heavy frosts were reported on several dates, but no damage resulted. Dry plowing and seeding are progressing in some portions of the valley, but as a rule little farm work is being done. Pruning is progressing in some orchards and vineyards. Orange harvest continues, and a large crop of excellent quality will be marketed. Large shipments of potatoes continue to southern points. Feed has become very scarce, but stock are healthy and in fair condition.

Southern California.

Cool and partly cloudy weather prevailed most of the week, with light frost in some sections. Showers were of frequent occurrence, and phenomenally heavy rain fell in the Otay valley on the 21st. The mountains are covered with snow. High winds on the 20th caused some damage to late apples. The rainfall for the season is much above the normal, and greater than ever before known at this date. Early sown grain is up and looking well, and green feed is becoming plentiful. The soil is in excellent condition and farm work is progressing rapidly. Oranges are coloring satisfactorily and picking is in progress. Walnut harvest at Anaheim is completed; the crop is below average.

Eureka Summary.—Rain the latter portion of the week put the ground in good condition for plowing and seeding. Weather too cold to start grass. Apple shipments continue.

Los Angeles Summary.—Weather favorable for vegetation in all sections except southern mountain districts, where snow damaged apples and rain beat down pasture. Occasional light frosts in some sections did no damage.

Rainfall and Temperature.

The following data for six days ending 5 A. M. Tuesday, November 28, 1905, are from official sources and are furnished by the United States Weather Bureau for the Pacific Rural Press:

California Stations.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	1.84	3.85	8 51	10 23	58	38
Red Bluff	.54	.72	10.48	5.13	66	32
Sacramento	.22	.29	7.39	3.81	66	32
San Francisco	.57	.60	8 43	4.48	64	44
San Jose	1.36	1 16	4.74	.....	68	36
Fresno	.46	.64	5.07	1.87	68	38
Independence	.04	.42	.45	1.03	52	26
San Luis Obispo	1.25	1.92	4.71	3 84	70	36
Los Angeles	1.38	2.96	1 14	2 36	70	42
San Diego	.40	4.12	.17	1.20	64	46
Yuma	1.58	3.15	.81	1 22	68	40

ENTOMOLOGICAL.

The Pear Thrips.

The work of Mr. Dudley Moulton, County Entomologist of Santa Clara county, has already been appreciatively commented upon in our columns and some of his conclusions have been cited. Fortunately there has just appeared as a bulletin by the State Commissioner of Horticulture a more detailed account by Mr. Moulton of his work, from which we take the following paragraphs:

The Insect.—Orchardists know the adult insect best. It is the adult which comes to our trees in countless numbers and which does the greatest injury to fruit buds and blossoms. The mature insect, having wings, flies up from the ground to the tree, and, if it finds the tree in suitable condition, at once begins to feed; but if it does not find the proper conditions, it moves on to other and better places. Thrips remain close during the day, either feeding or depositing eggs. They often leave the food plants just before sundown, and it is especially at this time that they migrate from place to place. We have distinguished two modes of flight—a hovering and a migrating one. If the food plant offers suitable food, the insect comes out for a few minutes, hovers around and a little later settles back on the same or a nearby tree. There is, however, a distinctly migratory flight, when the insects in great numbers fly for some distance, and in this way they are spread over a large area.

Adult thrips appeared in many orchards in alarming numbers on February 22d during the season of 1905, and in 1904 some two or three days earlier than this. Thrips continued to come out from the ground on through March and April and for a short time during May. On May 5th pupal forms were taken from the soil, and if, as we think, the insect is but single-brooded, all of the previous year's forms had not matured at this time.

Natural Enemies.—The subject of natural enemies for the controlling of our insect pests is of prime importance. If the pear thrip has an effective natural enemy, what is it? And, if it is not present here, where can it be found? Such questions come to us repeatedly. First of all we must know as much as possible about the life habits of the thrip itself, and this is what we have tried to present in this report. Up to the present time we have found several common predaceous insects feeding on thrips, but none which are parasitic. Predaceous forms attack their prey externally and literally devour them, while parasitic insects, which are considered perhaps the most important as check insects, must live for a time within the body of their host.

Our pear thrips, from the very nature of its habits, spending by far the greater part of its life concealed several inches beneath the surface of the ground, as has been shown, is very largely protected from ordinary predaceous or parasitic insects. It comes from the ground so suddenly and injures the trees so quickly that those of its enemies which we have found here can hardly prove an effective check.

The Raphidians, the commonest feeders on thrips in the Santa Clara valley, are general predaceous insects and feed rather on the younger stages of thrips than on the fully developed insects. For the complete control of the thrips pest, they do not appear early enough in the season. Raphidians are distinctly a Western form of insect, being found only in the far West and especially in California; they are unusually voracious, and, besides killing almost any insect which happens in their way, they will attack and devour each other if confined together.

Ants were thought by some to do much good as an enemy to thrips. One gentleman brought in an ant with a thrips impaled in its jaws—the evidence complete. This matter we took up somewhat in detail. Four hundred ants were taken as they descended the trunk of a thrips-infested tree. Twelve carried something in their jaws; four of these objects were thrips; From the observations only 1% (4 out of 400) were actually killing thrips. It may be that others of these ants killed thrips, but did not carry them down the tree. It has been a common observation among orchardists that where ants were usually abundant thrips were not numerous.

Spiders killed many thrips. Breeding cages were placed in trees for determining various points in the life habits of thrips, and later almost invariably one or more spiders would be found within and most of the thrips gone.

The most effective natural enemy of thrips in the Eastern States is a bug (Triphleps insidiosus Say) as mentioned by Dr. Hinds; it feeds on both plants and insects and at times may be quite as destructive as the thrips itself.

It was noticed by both myself and Mr. Budlong that often a tree would be thickly infested with young thrips, and when these disappeared, supposedly going into the ground, only a few could be found; they seemed also to leave the tree before reaching full growth. We believe the explanation for this is that a fungous disease thinned out their number to quite a large extent. This is borne out by the fact that some dead thrips were found whose bodies were penetrated by a fungus mycelium, and in one case small sporangia were seen on tiny stalks projecting from the body. It is possible that these insects were dead before being attacked by the fungus, and that, after all, the fungus was not parasitic.

Spraying.—It has been stated with regard to killing thrips by means of various spray mixtures that whatever these mixtures are they must be thoroughly applied to do even fair service. We have learned from this year's experience that for this particular thrips spraying is a very unsatisfactory means of control. The insect is hard to reach because of its manner of hiding in bud or blossom, and difficult to kill without injuring the tree with the spray mixture itself. Because of its habits of leaving the ground, extending over a period of several weeks, and its habits of migrating, one might apply sprays and kill most of the insects on his trees and within a very few days find an infestation as heavy as before. The injury, as we have seen, is so rapid and so fatal, taking but a few days (four or five) to ruin an entire orchard, that were we to depend on sprays, all work would necessarily have to be done in a comparatively short time and repeated often, and this, of course, is impracticable.

It does not seem necessary at this time to give in detail the results of the spraying experiments which we carried on during the past season. Fourteen different formulas were tried, including various forms of soap washes and caustics, tobacco, sulphur, crude carbolic and creosote oils. The sprays were carefully prepared under the personal supervision of Mr. Budlong and myself and applied with a Bean power outfit with the Bean Cyclone and Vermorel nozzles, under pressure of from 140 to 170 pounds. The results were very unsatisfactory. Exposed thrips would be killed, but those within the blossoms or buds showed almost no signs of injury. New adults and also young thrips—for the young continued emerging from the stems and leaves where the eggs had been deposited—appeared on the sprayed trees within a day or two after the washes were applied, and after four or five days the trees revealed almost as heavy an infestation of both young and mature thrips as there was before any spraying had been done. No one wash proved satisfactory, and apparently under the conditions none can. Sprays will doubtless be tried again, but they can only lessen the number of thrips with little or no appreciable results, and some injury to the tree is almost certain to follow.

Methods of Cultivation.—From the foregoing it might seem an almost hopeless task to check the thrips by either natural or artificial means. The insect, as we have seen, spends the greater part of its life beneath the soil and this is probably the best time to attack it. After the larva is fully grown, it leaves the food plant and seeks a secluded place in the ground. On entering the ground it follows openings such as cracks or holes made by other insects or worms, and, reaching a depth of from 4 to 6 inches, though often deeper, it hollows out a small cell on the side of the larger opening, and, thus securing itself, awaits further developments.

We believe that if the ground be thoroughly plowed and cultivated during November, December and January, or before the insects leave the ground, which they begin to do by the first of February, many of these young thrips would be killed or injured or so disturbed that but few would ever reach maturity.

Our present manner of cultivation is well adapted to give the thrips a long, undisturbed period of rest. During the late spring and early summer, when thrips are in the ground, we give the soil nothing but light cultivation, and, as the insects are still in an active larval stage, they seek another place of hiding if disturbed. After this no cultivation is usually done until the last of February or March of the following year, by which time the insects have left the ground. While the plowing and cultivating method of control has not been thoroughly tried, we believe it gives more promise than any other yet suggested.

Summary.—The insect is single-brooded. Adult females appear and begin to deposit eggs in February. After four days in the egg the young appear, feed for a time on the tree, then drop and enter the ground, where the greater part of the year is passed.

No effective natural enemies are yet known.

Owing to the insect's method of feeding, its habits of coming from the ground, extending over a period of several weeks, and its habits of migrating, sprays can only be partially effective, even where thoroughly applied.

We suggest winter plowing and cultivating, with careful working about the trees, so as to kill or injure the immature forms of thrips. This plowing must be done before the first of February, at which time the mature insects begin to come out from the ground.

SHEEP AND WOOL.

Small Scale Sheep Farming.

We have so often urged attention to the advantage of sheep husbandry as compared with sheep ranging, and cited the small flock of well bred sheep, to be well fed and protected from dogs, as an item in mixed farming, that we sometimes fear readers will grow weary of it. And yet, we must repeat, there is money in it if well done, and much that the Governor of Idaho says about it is practicable in California.

Governor Frank Gooding of Idaho is said to be a man who knows as much about the sheep and wool business as any other one man in the West. He recently talked to the Boise Statesman in this way:

Idaho lambs this year have been the finest products of the West—fat, fine of grade and unobjectionable from every point of view. It is a fact not generally known—but a fact, nevertheless—that great things can be accomplished in Idaho in the way of fattening lambs for the Eastern market. As proof of this statement Governor Gooding cites his own success three years ago, when on two different occasions he shipped one carload of fattened lambs to the International Live Stock Show at Chicago. On both of these occasions he won the international sweepstakes prize, both in the ring and block tests. This, too, in competition with the best feeders of the world. The Gooding entries were all half-breed Lincolns. A majority of the Eastern States were represented at these contests.

"The fact that these sheep were shipped to Chicago from Idaho only a few days before the opening of the show," says Governer Gooding, "is conclusive evidence in my mind that Idaho sheepmen, if they exercise proper care, can compete with the entire world in the raising of prize winning sheep."

Governor Gooding cites some interesting figures relating to his prize winning shipments. Both of his cars of lambs weighed an average of 123⅝ pounds per head, while the heaviest lambs there before or subsequently exhibited by the carload were 114 pounds.

Governor Gooding agrees with Mr. Millis in the statement that there is a big shortage this year in sheep throughout the Union. He attributes this fact to the same cause—a steady decrease in grazing area. "Here in Idaho we are not bothered so much with that drawback," he says. "In some parts of the State the range is overstocked, and will undoubtedly continue in that condition until some arrangement is made for State or Federal supervision of the public range, but, as a whole, there is room in Idaho for more sheep. I am a firm believer in the efficacy of governmental supervision. We need at this time some rigid rules in this regard. As I have repeatedly said, the spring grazing of sheep in Idaho begins at the foothills long before the range is in shape for even a limited number of live stock. I believe that to guard against this devastation of the range the Government should make rigid rules and arrange for their enforcement. This would, of course, mean the levying of a tax upon live stock, but the levy would not necessarily be heavier than needed to defray the cost of supervision. An excessive tax upon live stock, especially upon cattle, would work a great injury. But a reasonable tax for supervisory purposes upon sheep would hurt no one, especially during these prosperous years of the sheep business. I remember that while sitting on the State board of equalization I discovered the fact that Idaho cattle are assessed lower than the cattle of any other Western State.

Era of Little Fellows.—"In my estimation the signs of the time portend a radical change in the sheep industry in the West. The time is near at hand when there will be no more 'big fellows,' who must inevitably give place to the 'little fellows.' By 'little fellows' I mean small farmers, who from an acre of irrigated land in Idaho, for instance, can raise three times more fattening grass for sheep than can be raised from an acre of Eastern land. As a matter of fact, conditions in Idaho are ideal for successful sheep raising. In proof of this I have but to point to my own success in fattening lambs for exhibition at the International Fat Stock Show in Chicago.

"I confidently predict that within the next five or six years diversified farmers in Idaho will be reaping handsome profits from small herds of sheep. It will take that length of time to educate the farmers in the business, but they will certainly be fully repaid.

High Prices Prevail.—Never in the history of the live stock industry in Idaho have sheep been valued so highly as now. Muttons are selling on the hoof at $3.75 and $4. The ruling quotation for years has been little above $2.50. Shipments to principal Eastern markets have been heavy, and it is safe to say that every available animal in the Northwest has either been placed in transit or is sold to be shipped.

"It is a fact, however, that Idaho lambs are bringing the top notch prices in the Eastern markets. This is because the Gem State product is the best in the world."

C. J. Millis, live stock agent for the O. R. & N., says that there is a shortage of fully 20,000,000 sheep in the United States to-day. He, therefore, believes that conditions are favorable for continued high prices for wool. He bases his assertion upon the fact that so much land has been taken up in the past few years, thereby diminishing the grazing area. The most remarkable part of Mr. Millis' statement, however, is that "many contracts have been closed in Idaho for the 1906 clip at 25 cents."

He says this means that every sheep sheared in this State next year will turn off its back $2 worth of wool.

It is a fact that Idaho wool growers are holding off

for higher prices for the 1906 clip than have so far been offered, but there is strong basis for a doubt of the correctness of Mr. Millis' assertion that contracts have been signed for 25 cents.

Secretary Clinton of the Idaho Wool Growers' Association, which is affiliated with the national organization, says that he has heard of no such contracts in this State. He believes, as all other Western wool operators do, that the price in 1906 will be a handsome one, but he is not sanguine enough to believe that the 25-cent point will be reached.

FRUIT MARKETING.

Colonel Hersey's Views on the Fruit Business.

Mr. W. M. Webster has secured an interview with Col. Philo D. Hersey, well known as a man of broad views, and gives the Colonel's position with reference, directly to prunes, but indirectly applicable to all our commercial fruits, in the San Jose Mercury. It seems to us that all planters should have the cheer of such views, as the planting season is now on:

The Period Covered.—"I landed here twenty years ago yesterday," said the Colonel in response to my first question, "and since that time have been interested in the fruit business."

"I suppose the business was highly profitable at that time?"

"Yes. I should say that on an average the annual product of a prune orchard at that time was worth about $300 an acre, of which $225 was profit. Prunes were on a 7-cent basis then. Later they went even higher. In 1892 they sold for 10 cents, more or less."

"After that was the growth of planting steady?"

"Steady and rapid. For the next ten years many hundreds of acres were planted annually."

"What was good fruit land worth at the time you came here?"

"About $200 an acre. In the boom of 1890, when prices of real estate in city and county were on the jump, good fruit land sold as high as $300 an acre, or even more, according to location. After the boom spent itself the price settled down to about $250, and there it remained for several years."

"Was the industry profitable then?"

"Yes. From 1896 to 1900 crops were quite regular and brought in a gross product of about $200 an acre for apricots and peaches and about the same for prunes. Green prunes, picked and delivered, were worth, say, $46 a ton. In 1892 they went up to $89.50 a ton; a 10-cent basis."

The Slump and Its Causes.—"When did the slump come?"

"In 1900. Up to that time our prune growers had nothing to complain of in a general way, other than the ordinary vagaries of the seasons and individual misadventure. But in that year we had an enormous crop and the demand was not equal to the supply. To get rid of it was very difficult. Still the price was better than it has been since until the present year. The greater portion was sold for 3 cents, and from that down to 2 cents. In 1901 we had a short crop, but the hold-over crop kept prices at about a 3-cent basis. In 1902 prunes opened at a basis price of 2½ cents. In 1903 they opened at 2¾ cents, but subsequently went down to 1¼ cent. That was because of a large crop and the indisposition of buyers to take hold. In 1904 prices opened at 2¼ cents, but dropped to 1⅛ cent, owing to a general good supply of fruit the world over and the competition of the hold-over crop of the previous year. This year prices opened at 2½ cents, and thence have gone to 2¾ cents, 3¼ cents and 3½ cents. The explanation of this is a short crop, no large carry-over, a small crop of Eastern apples and other fruit, while the European supply has been, though fair, hardly medium. And here I may note that prices for European shipment are as favorable as for domestic shipment."

"What has been the effect of this shrinkage of prices upon the value of orchard land?"

"In a considerable percentage of instances low prices, combined sometimes with short crops, have compelled owners to put their properties on the market. There have been forced sales. In consequence there has been a reduction of from $50 to $100 an acre in the price of full bearing orchards. To-day orchards can be bought with no inflation of values, and in some cases actually below their worth on merit."

"How have the prices of new, unplanted land been affected?"

"Such land, favorably located, has not been affected to any material extent."

Conditions and Prospects.—"You then apparently think that the business has got down to its bearings."

"It is down to bedrock; as low as it can be to continue its existence as a commercial industry."

"What then of the future?"

"I am and always have been optimistic. I believe that the outlook now is better than for several years past."

"What do you consider to be the actual, average condition of those engaged in the industry? Is there any real occasion for discouragement; any sound reason for the calamity howling heard in many quarters?"

"Generally speaking, I do not think so. Of course, many individuals have been unfortunate. They have got into debt and cannot see their way out, and they naturally feel discouraged, but, as a whole, our orchardists are in fairly good condition."

"You speak of some being in debt; are the growers as a rule heavily mortgaged?"

"I should not say heavily. Three or four years ago many of them were getting out of debt, who have since, owing to unfortunate conditions, been obliged to increase their obligations. Like any other business, fruit growing is sure to have its ups and downs. Look at the case of the Kansas farmers for instance. A few years ago they were mortgaged up to the eyes and poverty stricken. They would have gone out of business if they could, but they were too poor to get away. Now all that is changed. They have had good crops, fair prices, have paid off their mortgages, and have money in bank. I look at the case of the fruit-growing industry of this valley in much the same way."

Cause and Remedy of Depression.—"Give me your general ideas as to the cause of the unsatisfactory conditions of the past few years and the remedy."

"As to the causes, marketing has been conducted in such a manner that growers have suffered more from low prices than short crops. There is just about so much trade and competing sellers have held down prices. So long as such methods prevail a continued improvement in prices cannot be maintained. As for the remedy, the only sure road to continued prosperity is to follow in the wake of the times. Combination is the order of the day and the fruit growers must fall into line. Give them some control of their marketing Now they have none. But this must be remembered: When it comes to the matter of combination, fruit production is so wide that any attempt to make a general combination must necessarily be a failure. The proper line of effort is in the direction of neighborhood combination. Neighborhood combinations could be made, giving a few individuals control of the crop and avoiding individual competition."

"Just what do you mean by neighborhood combination?"

"This: Wherever there is a little center of a dozen or twenty growers, let them combine, build a storehouse and grader, put up a uniform quality of fruit and sell as a whole, making use of existing distributing agencies."

"But what could they accomplish if all around them there were individuals or other little combinations ready to compete?"

"Supposing there were such. How long would it be before these several combines of individuals would get into the way inquiring what their neighbors were doing or about to do? There would be an exchange of views; a consideration of prospects, and the tendency would be to get together by common consent for the betterment of conditions. There must be an evolution of combination from small beginnings."

This Year's Fruit Shipments.

We have had much about the satisfactory characteristics of this season's overland trade in deciduous fruits, but the following from a Sacramento Union's interview with Mr. George B. Katzenstein is interesting:

The season has been a remarkable one in many respects. With serious disadvantages and apparently unpromising outlook at the outset, the close indicates from the growers' standpoint a most prosperous season, and on the whole the largest recorded shipment of deciduous fruits in any one year.

Aside from local shipments to the larger centers within the State, the carload lots shipped out of the State, mostly to far Eastern points, may be recapitulated as follows:

	Carloads.
Peaches	1,915¾
Grapes	1,502¾
Apples	1,498
Plums	1,391¼
Pears	1,013
Apricots	278½
Cherries	79¼
Assorted	16½
Shipped East to Nov. 24	7,810

It may be stated in a comparative way that the average similar shipments during the past ten years have been 5852 carloads.

As to the value in dollars and cents, I should say that an average of $1000 per car for the season just closed on the whole would not be far out of the way; so the value of our export or Eastern shipments of green deciduous fruits alone would easily approximate $8,000,000. This takes no account of the vast quantities consumed in the home markets.

Mr. Cooper's Persimmons Go Well.

Mr. Ellwood Cooper has been working for years to make an Eastern market for Japanese persimmons grown in California. Mr. Katzenstein, in an interview noted elsewhere, says that for a number of years Mr. Cooper has shipped from one to three carloads of these green and golden-colored fruits during the fall months. In 1904 he shipped three carloads, and for the present season his shipments will be restricted to two carloads, which, through fortuitous conditions, will yield in net results equal to three carloads in previous seasons. His first shipment for 1905 left Santa Barbara Oct. 27, and was sold in Chicago Nov. 10, grossing $2090. His second and last carload went forward Nov. 10, and is now due to be sold, and will find an equally advantageous market, owing to the close proximity of the Thanksgiving holiday.

These persimmons are packed with great care, in pockets like an egg case, 24, 32 and 40 fruits to the box. Smooth of skin, brilliant of color, handsome of form and uniform in size, they make a stunning show, and are used for table and house decorations, as well as a relish and dessert. No one market is in position to handle a straight carload of this fruit; hence, in anticipation of arrival, the trade is made acquainted with the fact, orders are placed with brokers, and as a result local reshipment follows to New York, Philadelphia, Boston and other large centers.

This is interesting, but the intending planter must not forget that the capacity of the Eastern market, so far as can now be judged, is about two or three carloads a year.

HORTICULTURE.

The War Against the Pear Blight.

Prof. M. B. Waite, Orchard Pathologist of the United States Department of Agriculture, is in California again co-operating with Prof. R. E. Smith of the University Experiment Station in the war against the pear blight. At the Fruit Growers' Convention at Santa Rosa week after next, both these experts will speak and will give their latest conclusions, but the matter is of such wide interest that we give at once something from interviews with interior reporters. The Sacramento Bee has had several interviews, from which the following is selected:

The Disease.—The pear blight bacteria are among the smallest living creatures known to exist. The particular family to which they belong contains the smallest specimen yet discovered. The bacteria work in the bark, multiplying with great rapidity and once a tree is attacked they spread rapidly, leaving dying and dead wood behind them. To control the disease it is necessary to remove the afflicted portions, taking great care to leave none of the disease on the tree. This is not difficult, owing to the discoloration which marks the presence of the germs. Some growers make a mistake in not cutting far enough ahead, and thereby fail to accomplish the object. Where the cutting is properly done Prof. Waite declares emphatically the disease can be kept under complete control.

The pear blight manifests itself by the withering of the parts afflicted. The twigs and branches die as the germs progress, their course being usually downward towards the trunk. There is positively but one remedy and that is the removal of the afflicted parts. The best time to do this is in the winter. The germs remain inactive during the winter period and their presence is very plainly indicated by discoloration. This is called "holdover" blight.

The advantages of winter cutting are as follows: The danger of infecting other parts of the tree by contact with portions being removed is considerably less. Infections that exist, the "holdover" blight, are easily noted, and there are no latent infections, invisible to the eye.

How It Spreads.—The pear blight is transmitted principally by flies and bees. It is not blown by the wind, this having been fully demonstrated by inclosing portions of trees not afflicted in mosquito netting in order to keep insects away. Portions of the trees not so inclosed never failed to get the blight, while portions inclosed in the netting never became affected, thus proving conclusively that the germs do not travel on the wings of the wind.

The blight causes an exudation of a soft sticky substance which attracts insects. These insects impregnate blossoms or other portions of the trees which may be susceptible, thereby spreading the disease. To control the insects is impossible and therefore the only remedy is the removal of the affected parts as rapidly as they may develop.

The cost of the work depends upon the amount of cutting necessary. It is comparatively inexpensive. In view of the price paid for pears the work is most profitable even where a good deal of cutting is necessary, although, of course, there is a point where total destruction by grubbing and burning is the best and only remedy.

Prof. Waite is urging the most vigorous effort and thorough work in the Sacramento valley. He said yesterday that the orchards which he and his assistants are now endeavoring to save in this State are without exception the finest pear orchards in the world. Property to the value of $10,000,000 is at stake in this matter. It is a fight worth making, and Prof. Waite declares that, given the earnest co-operation of all the pear growers and apple growers—for

the disease afflicts apples as well—the pear blight can be controlled.

What They Propose in Sutter County.—In all probability the local Board of Horticultural Commissioners will be forced to apply the law relative to exterminating tree pests in one or more pear orchards near Yuba City, and take the work in their own hands of stamping out pear blight in these individual cases.

Under the recent laws covering the duties of Horticultural Boards it is made the duty of such Boards, where individuals fail to remove or have removed noxious weeds, plants, disease-infected nursery stock or growing trees, to enter the premises of such individuals and perform the work of extermination themselves. The expense of such work is then made a county charge, and the Board of Supervisors can then file a lien against the property of the man for whom the work was done and hold the property for the money expended.

In conversation with Commissioner Kells recently the names of one or two pear growers were mentioned against whom such a procedure will probably be taken, and the Board will take up the work of cutting out the blight in orchards where the owners refuse to do it themselves.

A Group of Lakes in the Sierra Nevada.

(Continued from Page 353.)

tunnel through a range of mountains into the watershed of the Cosumnes; dams will be built in deep, rocky gorges and broad valleys transformed into still other great lakes of pure mountain water; and the whole region, now so little known, will become famous, not alone for its beauty, but, also, because of the vast quantities of pure mountain waters available to promote the health and prosperity of the metropolis of the Pacific.



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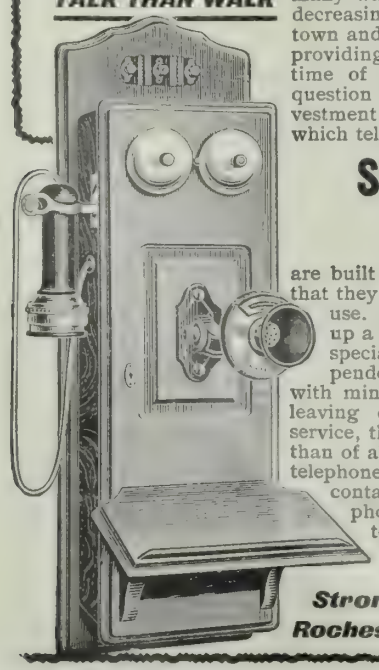
Audrain Lake, Amid the Alpine Summits of the Sierra.



Lake of the Woods, in the Sierra Region.

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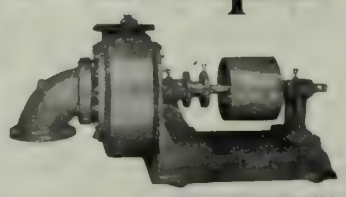
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Agricultural Review.

Fresno.

AN IMMENSE YIELD OF HONEY.—Kingsburg Recorder, Nov. 27: Our attention has been called to the fact of a remarkable yield of honey from one colony of bees in the apiary of O. L. Abbott. Mr. Abbott, at the beginning of the season just ended, began to experiment with a colony of bees in which he had placed a new Carniolan queen, to see what this race of bees would do in this locality. At the opening of the season Mr. Abbott took two brood frames from a colony that was just at the point of swarming and made what is known as a "shook swarm," introducing a new queen. In a ten-frame he put eight frames. During the season this colony required two supers, equaling sixteen frames, for storing honey. The yield for the season was sixty-nine full, fat Langstroth frames, from each of which six pounds of extracted honey was secured. Accordingly, the total yield for the one colony was 414 pounds. Figuring the honey at 4 cents per pound, this would have made $16.56 as the revenue derived from a single colony of bees. Mr. Abbott says this was his best colony of bees, and that a number of other Carniolan colonies given the same attention yielded about two-thirds as much honey. These Carniolan bees are by far more gentle and easier to handle than any race, except the Causians. It is the intention of Mr. Abbott to convert all of his colonies into Carniolans, for he considers them to be the best race of bees for this locality.

Los Angeles.

NEW METHOD FOR COLORING ORANGES. — Pomona Progress, Nov. 16: The Citrus Union at Claremont has nearly completed its preparations for handling several carloads of oranges for the holiday market. Boxes are being made; the machinery is in good order. There is a new feature moreover that should give ready sale to the fruit handled by this packing house. A method of coloring the fruit uniformly has been developed. The fruit is placed in a dark, air tight room. A tub of water is used to insure moisture and an oil stove keeps the temperature at about 90°. After four days of this treatment the fruit is taken out, colored a good yellow. It is claimed that this treatment in no way injures the fruit, and the Claremont house intends using this device for all its Christmas shipments.

Napa.

VINEYARDS ARE IN GOOD SHAPE.—Napa special to Sacramento Bee, Nov. 25: George Hersman, of the Government Department of Viticulture, is visiting his home in Napa prior to his return to Washington. Hersman has just completed an inspection of the various experimental stations which the department maintains throughout the State. Concerning the station at the Tokalon vineyard in this valley, he says: "Of all the various experimental stations in the State, the one established at the Tokalon vineyard, Oakville, not many years ago, is the oldest and most extensive, and I am greatly pleased with the results obtained. There are a variety of resistant vines grafted in a variety of ways there, and any grape grower interested could learn much by going to see what has been done. It is impossible for the department to establish enough stations to test the vine growing qualities of all climates in the State, and for this reason we wish all viticulturists to co-operate with us in this work. We will gladly make a free distribution of resistant stock to any one sending to my address at Washington."

FINE YEAR FOR FRUIT INDUSTRY.—Sacramento dispatch to Chronicle, Nov. 23: On two carloads of persimmons shipped by Ellwood Cooper, he will realize over $2500 in cash, clear of all expenses. Practically every ounce of fruit in the State has been marketed, or will be taken within the next two weeks. G. B. Katzenstein, manager of the Earl Fruit Co., in speaking of the present season and the satisfactory results obtained by all concerned in the industry, says: "The season has been a remarkable one in many respects. With serious disadvantages and apparently unpromising outlook at the outset, the close indicates from the growers' standpoint a most prosperous season, and on the whole the largest recorded shipment of deciduous fruits in any one year. Aside from local shipments to the larger centers within the State, such as San Francisco and Los Angeles, etc., the carload lots shipped out of the State, mostly to the far Eastern points, may be recapitulated in quantitative order as follows: Peaches, 1945¾; grapes, 1592¾; apples, 1493; plums, 1391¼; pears, 1013; apricots, 298½; cherries, 79¼; assorted fruits, 16½; shipped East to date, 7810. It may be stated in a comparative way that the average similar shipments during the past ten years have been 5852 carloads. As to the value in dollars and cents, I should say that an average of $1000 a car for the season just closed on the whole would not be far out of the way; so the value of our export or Eastern shipments of green deciduous fruits alone would easily approximate $8,000,000. This takes no account of the quantities consumed in the home markets."

San Bernardino.

BUYING REDLANDS ORANGE GROVES.—San Bernardino special to Chronicle, Nov. 24: Orange grove deals involving $136,500 were closed at Redlands to-day by Director K. C. Wells of the Union Bank of Redlands, who refuses to divulge the name of the real buyers. Considerable speculation is aroused, as all of the properties comprise some of the most select land here. Furthermore it is known that Wells has taken options on other groves equally valuable. One place bought is the Cass Gaylord orchard of eleven acres, on Cypress avenue, the price being $25,000; another is the Williams grove, the same price being paid, and another the O. A. Warthing grove, also purchased for $25,000. These were adjoining groves. Mrs. James Hays sold four acres for $10,000. Thirty acres in the Crafton district belonging to the Jacobs estate were bought for $21,000. Eighteen acres in San Timoteo canyon brought $18,500, while Professor Eaton sold his twenty-acre grove in the same quarter for $12,000.

San Joaquin.

FLAX SEED FROM HOLLAND.—Stockton Independent, Nov. 25: The Western Fibre Co., the local corporation recently formed to engage in the manufacture of flax fiber for the Eastern market, has received 1000 bags of the best seed that could be procured in Europe and a second shipment of 1000 bags will be here in time for planting soon after the first heavy rain. The seed will be distributed to land owners who have planned to engage in the business of supplying the company with flax straw, and the planting will be done in several sections of the county where successful experiments were made this year under the direction of the company's expert, J. K. Toles. The seed came from Holland, and those who have seen samples of it pronounce it the cleanest and brightest ever brought here. The seed was hand cleaned, and Mr. Toles declares that no foreign matter can be found in the whole shipment. It is plump and of darker color than the flax of commerce, and was selected because of its excellence for the production of long fiber.

BEAN STRAW GOOD FEED FOR STOCK.—Stockton Independent: The bean growers have discovered that bean straw makes excellent feed for stock and the majority of them in making contracts before threshing reserve the straw. Those who have experimented with the new feed say that it is nutritious and stock will eat all of the straw if properly prepared. At many places on the islands large stacks of straw are pulled up and will be baled for feed. The following is a telegram from Ventura: Bean straw, the pods and dried vines of the lima bean, has become a valuable asset to the ranchers of this county. This year the 30,000 or more acres of lima beans produced a ton of straw to the acre. The straw is kept clean and is baled. It then sells for $5 a ton on the ranch, netting the farmer $3 a ton. There is a ready sale for the straw. It makes the finest kind of feed for milch cattle and with beet pulp it is excellent feed for stock cattle, and, in fact, it is splendid feed for all kinds of stock. There will not be enough bean straw in this county this year to supply the demand.

Santa Cruz.

BERRIES AND APPLES.—The Pajaronian, Nov. 23: While other berry districts have long since closed the strawberry shipping season, Pajaro valley is sending daily to different markets as fine strawberries as one could wish for. The berries are large, richly colored and of excellent flavor. Shipments are being made to Oregon and Washington points and as far south as Los Angeles. Yesterday proved the banner day of apple shipments for the season from Watsonville depot, when forty-three carloads went out, making a total for the season from Watsonville of 1988 carloads. Adding to the above 312 carloads of apples that have been shipped from other points in the valley, it will be seen that Pajaro valley has sent to the markets of the world so far this season 2300 carloads of apples. This is almost twice the amount forwarded in any entire season heretofore.

Siskiyou.

PEANUTS GROWN IN SISKIYOU COUNTY.—Yreka special to Sacramento Bee, Nov. 24: Cyrus Land of Gazelle, 18 miles from Yreka, planted as an experiment an acre of peanut seed. It was thought by many, owing to the fact that the climate is much colder than that of the middle counties of California, peanuts could not be raised. To the surprise of all, the sandy ground turned out to be just the soil needed for the raising of peanuts, and as a consequence a large crop was produced.

Solano.

INCREASE IN ALFALFA CULTURE.—Suisun special to Sacramento Bee, Nov. 26: An increased stimulus has been given to the culture of alfalfa near Suisun. In Dixon also an active interest is being taken in alfalfa growing, and each year sees an increased number of acres devoted to the product. At the present time many teams are to be seen there laying out land for alfalfa, and those who have engaged in this industry in the past have realized such profitable results therefrom that other farmers are embarking in the business this year. Among the Dixon land owners who are devoting large portions of their land to alfalfa are J. W. Rice, W. H. Garnett and R. J. Curry. They have bored wells on their land so they can successfully irrigate. The success of the Dixonites has prompted some farmers in the vicinity of Vacaville to experiment in alfalfa growing. It is thought that much of the land located to the east and south of Vacaville, now devoted to wheat raising, might produce more profitable results by being planted in alfalfa. In the Vacaville district Oscar Garlichs recently purchased 175 acres and will plant forty acres in alfalfa next year. On the Hawkins ranch, south of Vacaville, twenty acres will be devoted to the industry this year. Lee Gates has rented the Robbins ranch and will put in 100 acres. As is well known, alfalfa growing is more productive when under irrigation and the water for this purpose will be obtained from wells, pumped by electric motors or windmills. The success already attained in alfalfa growing is also interesting to farmers in the Suisun and Elmira districts. Now that it has been definitely determined to erect a creamery in Suisun, an impetus has been given to dairy farming. Farmers realize the remunerative results accruing from the industry at other places where creameries are established, and one of the advantages of dairying is that it means cash every month. That those now engaged in the alfalfa industry will have substantial following another year is certain, as this matter is now attracting considerable attention from those who depend on the soil for their livelihood, and it is safe to predict that it is a matter of only two or three years when one of the most extensive alfalfa growing sections of the State will be located between Dixon and Suisun.

Sonoma.

FRUIT GROWERS' CONVENTION. — Santa Rose dispatch to the Call, Nov. 24: The thirty-first annual fruit growers' convention will meet at Santa Rosa on Tuesday, December 5, at 10 A. M., and hold daily sessions until Friday, December 8. This convention will be one of the most important ever held in the State and will deal with many matters of direct interest to fruit growers, among others transportation and marketing, improved methods of packing, new varieties, insect pests and their control, co-operative marketing, the wine and raisin industry, and many other subjects bearing directly on the prosperity of the fruit growers. All fruit growers, shippers, winemakers, raisin growers, packers, nurserymen and others interested in fruit growing in the State have been invited to the present and take part in the proceedings of the convention.

Stanislaus.

TRACTION ENGINE FOR PLOWING.—Modesto Herald, Nov. 23: Ed McPike of the Grayson locality has contracted for the plowing of his land by aid of a traction engine. Smith & Curry, who operated a traction engine harvesting outfit on the West Side during the past season, are the contractors. They have received a carload of oil for fuel and expect to do much work of the kind in that locality. A long string of disc plows will be pulled by the engine.

DAIRYING PAYS. — Modesto Herald, Nov. 16: Secretary McCabe of the Modesto Creamery gives us this illustration of how dairying pays in Stanislaus: Andrews & Willott settled on a tract of the Jones & Weldy land, near Modesto, something over a year ago. For the year ending Sept. 30, 1905, they milked ten cows, marketing the milk at the Modesto Creamery. The cows averaged 300 pounds of butter fat. The average price paid for butter fat during that period was 24⅓ cents, hence the butter fat from each cow amounted to $73 for the year. Each of the cows had a calf, which is given the low value of $5, and the skim milk is given the conservative value of $10 per cow. This ives a total avgerage of $88 for each cow for the year.

Tulare.

UP-SIDE-DOWN PEACH TREE.—Visalia dispatch to Fresno Republican, Nov. 17: J. V. Huffaker, who returned this morning from Three Rivers, brought down with him peaches grown on a tree on the Britten Bros.' place, some of which are ripe and some of which are still green. A peculiar feature is that the tree was produced from a branch stuck in the ground and which took root, the limbs—as the stick had been inverted—growing downward. The peaches, which are apparently of the Persian cling variety, have ripened for several years at this season, several weeks later than those on the parent tree. Whether the inversion of the branch is responsible for this peculiar phenomenon or not is a matter for conjecture.

Yolo.

NEW METHOD OF TREATING BLIGHT.—Winters special to Sacramento Bee, Nov. 24: What seems to be a very effective method of exterminating or counteracting the ravages of pear blight has been inaugurated in the Henry Brinck orchard near here. Brinck found that some of his trees, the branches of which gave but little evidence of blight, were badly affected in the roots. Other trees were not affected below the ground. In both instances root pruning was vigorously resorted to. Roots were either wholly removed or diseased parts cut out. Every tree was carefully examined, and no matter how deep the affected roots were found, they were dug out. This, with close top pruning, has eradicated the blight in one of the most valuable orchards in the valley. Brinck fully believes that careful attention to the roots will save many fine trees that under the present method would be dug up and destroyed. In all cases he advises close attention to the tree underground, and to spare no roots that show any disease. If they can be completely cut away or the disease isolated the top will stand any amount of pruning and still leave a tree that will be profitable. Those who have seen his orchard say that had other growers adopted his practice many good trees could have been saved.

Horse Owners! Use

GOMBAULT'S

Caustic Balsam



A Safe, Speedy, and Positive Cure

The safest, Best BLISTER ever used. Takes the place of all liniments for mild or severe action. Removes all Bunches or Blemishes from Horses and Cattle. SUPERSEDES ALL CAUTERY OR FIRING. *Impossible to produce scar or blemish* Every bottle sold is warranted to give satisfaction Price $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars.

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Standing Offer



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TUTTLE'S ELIXIR

Greatest horse remedy in the world. **Tuttle's Family Elixir** invaluable for human bruises, pains, rheumatism, etc. Send for free 100 page book, **"Veterinary Experience."** The perfect horseman's guide. Every disease symptom and its treatment.

Tuttle's Elixir Co., 33 Beverly St., Boston, Mass.

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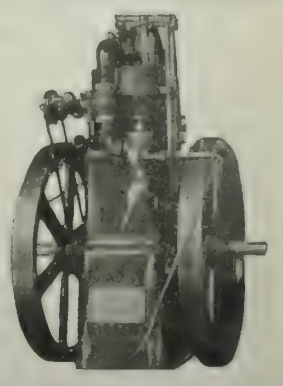
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SHORTHAND taught by mail; demand more than supply. Miss M. G. Barrett, 302 Montg'y St., S.F

The Home Circle.

The Clouds of God.

The city is full of labor
And struggle and strife and care,
The fever-pulse of the city
Is throbbing in all the air;
But calm through the sunlit spaces
And calm through the starlit sky,
Forever over the city
The clouds of God go by.

The city is full of passion
And shame and anger and sin,
Of hearts that are dark with evil,
Of souls that are black within;
But white as the robes of angels
And pure through the wind-swept sky,
Forever over the city
The clouds of God go by.

The city is full of sorrow,
And tears that are shed in vain;
By day and by night there rises
The voice of its grief and pain.
But soft as a benediction
They bend from the vault on high,
And over the sorrowful city
The clouds of God go by.

O eyes that are old with vigil!
O hearts that are dim with tears!
Look up from the path of sorrow
That measures itself in years,
And read in the blue above you
The peace that is ever nigh,
While over the troubled city
The clouds of God go by.

—Robert Clarkson Tongue.

His Trip to the City.

At last his dream was to come true. The desire of his heart was to be gratified. He was going to the city!

All his life from the time when he used to sprawl, lizard like, flat upon the floor with an old geography spread out before him, posing over pictures of cities and mountains and seas, he had longed to go somewhere and see places and things. And as he grew the desire grew with him. He was always a studious boy, and learned in the ill-equipped country school, devouring everything in the way of reading matter that came within his reach—borrowing every book, magazine and paper in the "settlement," digesting their contents thoroughly, and all the time dreaming dreams of all the wonderful places they told of, and some of which he might see some day. And newspapers—how eagerly he read every one he could get! They were to him like windows through which he could look into the great wonder-filled world outside, which he vaguely hoped to enter some day. His father, a small farmer, took the county paper and thought it all-sufficient, but occasionally he got stray copies of some of the big city dailies, and those he read with eager, pathetic avidity, their very advertisements fascinating in their suggestive possibilities. Not that his ambition was bounded by the city—his dreams carried him to far more distant flights, even to lands beyond the seas, but that was the alluring focus of his earliest desires, the place he wanted to see first. There would be time enough to think of the other marvelous places in the world, after he had seen the city.

So when he was twenty, and had graduated with all the honors possible at the small country "Academy," it was decided that he should have his first look at the great world the coming winter, as soon as the crops were gathered and the year's money in hand.

And oh! how hard he worked through all the dream-filled days that were bringing him nearer and nearer to the time, not only at his own share of the farm labor, but at every extra job that would bring him an extra dollar, that he might have some spending money to do with just as he pleased. And when at length the eventful day dawned, the day of days, the day of his departure, he thought his arrangements were very complete indeed, and felt very comfortable and satisfied in the midst of his excitement. He had a new suit of clothes, a new telescope containing various new articles of apparel, and money sufficient for all reasonable enjoyment, he thought. It was in truth a pitifully small amount, but to his happy young eyes it represented innumerable pleasures and beautiful things.

"Now, don't you go and get took in with one o' them gold bricks you was readin' about in the papers," said his father, jokingly. "Just tell 'em you ain't investin' your money that way."

"And don't go fallin' in love with the fust one o' them strawberry blondes you see, though I must say they air killin'," put in his elder brother, who had been to the city several times and was regarded as a very traveled man indeed.

"Now, you all let him alone!" his mother expostulated, tenderly. "He's smart enough to take care o' hisself, don't ye fear!"

"And don't lay yourself up tryin' to eat all the good things you see at once. Tell you what, Joe, it does come pretty hard after you live on crabs and oysters a spell to have to come back to bacon an' greens!" said the Traveled Man, with air of frank admission that was very telling, and called forth scandalized but delighted protest.

"Well, let him enjoy hisself and spend his money any way he sees fittin," his mother insisted. "He worked hard enough for it, gracious knows, and I want him to have a real good time once in his life."

"Oh, I'll have a good time all right!" Joe said, confidently, and as he kissed her goodby again he whispered delightedly, "And I'll bring you something pretty, too, sure."

"Bring yourself back safe and sound—that's all I want," his mother answered bravely, but a very pleased look lighted up the worn old face as she gazed fondly after her youngest and best beloved child.

How bright, how beautiful the world looked to him that day—even the small world he knew, the little country village, the surrounding woods, as he stood upon the platform waiting for the train. A strange, inscrutable glamour seemed to be over everything, and as his eyes, bright with anticipation and excitement, roved over the familiar scenes, he had a vague, indefinable consciousness of impressing them upon his memory, as if he was leaving them for a long time, though he knew he was to be away from them only a very few days.

Would it all be just the same when he came back from the new, strange scenes of the city? Somehow, it seemed to him that it would not be; some mysterious, incomprehensible change seemed hovering about it all. Would he be just the same? Vaguely he felt that he would not; that he could not possibly pass through so much and yet return just the same as he went away.

And when at last he was seated in the cars, actually and really on his way to the city, such a feeling of exhilaration possessed him that he was almost like one intoxicated. He seemed to be whirling through a glorified land where all sights that met his eyes sent strange, indescribable thrills of ecstacy to his heart. And how full of vital interest to those eager, starved young eyes was everything and everyone about him in the wonderful, on-rushing train. He wondered how many of the people in it were going to the city; if they had ever been there before, and if they were going there just for pleasure, like himself. And when the conductor leaned over and stuck the little pasteboard slip in his hat-band, he felt as important and experienced as those opulent-looking men across the aisle with the big grips piled around them, and heavy gold watch chains, and fine overcoats thrown across the backs of their seats. He wondered if he could ever travel enough to make him feel as bored and indifferent as they looked. Decidedly, he thought not.

It was night when the city was reached, and though his heart throbbed wildly and his excitement was at fever heat, he managed amid the confusing din and bustle to follow his brother's instructions in regard to reaching his destination—one of the small hotels.

But, although it was night, the myriad lights that everywhere dazzled his fascinated eyes, were all sufficient to give him a foretaste of the wonders to come, and when the cab turned into one of the brilliantly lighted and noisy avenues he leaned forward eagerly, bewildered, enraptured. An automobile sped by—an automobile! Oh, if it was only day—he did so long to see an automobile; but, no doubt, there were several in the city, and tomorrow he would see one. The electric cars passing and repassing with such marvelous rapidity, it looked like magic, and tomorrow he would have his first ride in them. And these crowds of people! Where could they all be going at night? Oh, to the theatre, probably, and he would see a theatre probably tomorrow night. He just couldn't wait any longer—he had always so longed to see a theatre—yes, tomorrow night.

When he had secured his room in the hotel he lingered around awhile, looking about him, and watching the people with such undisguised interest that the night clerk, who was young and not very busy, watched him with an amused smile. The boy saw the smile and came up nearer.

"I suppose they're going to the theatre?" he said, in a tone of friendly confidence. "Is there a good show in town now?"

The amused smile broadened about the mouth of the young clerk, but only for a moment. Then, as he looked at the eager, honest eyes, the work-roughened hands, the cheap, ill-fitting suit, he suddenly remembered what a very few years had passed since he himself had been a green country lad, with just such clothes and just such a zest for everything.

"There are good bills at some of the theatres this week," he answered pleasantly. "I will show you the papers tomorrow, and you will read all about them. I haven't seen anything myself. I don't have time."

"I know you must be kept awful busy, tending to such a big place as this," said the boy, with respectful admiration in voice and eyes.

When, a little later, he went up to his room, he sat a long time arranging and rearranging his plans for the few days of his stay. There was so much to do, so much to see. He went over his money with gloating pleasure, putting aside the different sums for their several uses, the amount for his return ticket, three dollars for three more nights at the hotel, and then he had twenty dollars left. Twenty dollars! Surely he ought to live well and see everything there was to see with that much. And get something real nice for his mother—he wouldn't forget that.

He went to bed at length but he was not a bit sleepy, though he had not slept much the night before, from sheer excitement—but it was late and there was so much to do tomorrow. He wished he could go to sleep, he so wanted it to be morning, but he just could not. What a strange odor there was in the room; he had not noticed it at first, and he felt queer, somehow. He felt so tired and so sleepy—and yes, tomorrow he would see ladies he saw going out of the hotel, with yellow hair, all curly and frizzly, and dresses that rustled like cornstalks, and white gloves on their hands; such little tiny hands! He wondered if his mother ever saw any ladies like them. Poor mother! her hands were rough and hard, but—there! that colt has jumped out of the pasture again, and somebody's left the bars down, and that blamed old cow's in the turnip patch! Yes, he was going to ride in one of those nice cars the very first thing. Jim said it felt like you were flying. And he was going to get some oysters, and some—some—yes, the theatre's the thing. Jim says it beats the oh, how funny he felt! He must get up—oh! there's the horn blowing for breakfast—he must get up! He must get out into the air! He was so tired—and tomorrow—yes, he mustn't forget to buy some books—in the city—they are cheap in the city. And some—tomorrow—in the city—tomorrow—the city.

* * * * * *

In the early morning someone reported a strong smell of gas in one of the corridors, and a hasty investigation located it in No. —. They broke open the door and let the gas out of the room. Someone said:

"That country Jay has blown out the gas, of course."

But the young clerk, with blanched face and unsteady voice, said softly:

"Hush! he is dead!"

Sick-room Etiquette.

It is only in extreme cases and at inopportune times that visitors are excluded from the sickroom—the tedium of confinement is relieved so much by the smiling countenance and cheery word of a friend.

It may seem almost superfluous to offer any suggestions as to the means of making a call upon the sick acceptable, yet, "oftentimes we do offend where most we wish to please." How many, even among those who are the promptest to discharge their duty in such cases, are so welcome that their return is awaited with eagerness?

The failure, or partial failure, of such well-meaning persons may arise from the fact that the sense of duty which has prompted the visit is allowed to make itself too apparent. Calling upon the sick is by no means the pleasantest of tasks, and it is not to be wondered at, perhaps, if the duty is sometimes put off until delay is no longer excusable.

If so much hesitancy is felt, a delicate dish, or a few choice flowers, accompanied by a note kindly worded and delivered in person, will relieve the embarrassment and show the good wishes of the caller.

It is hardly necessary to say that in the sick room itself sympathy ought not to be carried to the point of evident anxiety. Courage and hope for a better day are what the sick one most requires, and the face of the visitor is sure to be scanned for a trace of disappointment or alarm. It is easy to inspire confidence by the look and grasp of the hand, and no medicine is better.

There is an easy manner, also, which is admirable in itself, and which relieves the constraint that the sick one may naturally feel in not being able properly to care for guests.

The outer wraps have, of course, been removed before entering the room, and it is not imperative to wait for an invitation to be seated. Above all, be seated comfortably. For a visitor to be, or to seem, uncomfortable, is to insure the discomfort of others in the room.

It is never admissible to sit on the edge of the bed, or to touch the bed in any way. The nervous organism is made over-sensitive by disease, and every jar is intensified.—Health.

Preparing Fowl for the Pan.

Ducks, geese and fat old hens have such oily skins that clear water will not remove the accumulation of dirt. A good scrubbing with suds and brush not only removes objectionable matter, but aids in opening the pores and permits the grease to readily escape in cooking. Rinse well in water softened carefully so that the contents of the entrails do not come in contact with the flesh. Remove the crop from the end of the neck, and, if possible, without cutting through the skin. This is easily done if the fowl has been kept off feed for twenty-four hours before killing, as it should be.

Slip the skin back and cut the neck away, that it may be brought neatly over the opening and fastened with a few stitches.

To remove the tendons that are so disagreeable in the turkey drumstick, cut through the skin about 2 inches below the leg joint, bend the leg at the cut by pressing it over the edge of the work table and break the bone. Then pull out the tendons. I find a small pair of pincers helpful here if the flesh and tendons are cut; but if one cuts only through the skin after the bone is broken, the tendons may be pulled away one at a time by grasping the foot with one hand and the leg above the break in the other and pulling steadily. This is a turn we ask of the men when the bird is large and old. Cut out the oil-bag. Wipe the bird well upon the inside with a cloth wrung out of cold water; if at first the cloth is much soiled, the fowl did not bleed well and we must change the cloth and repeat until it is clean.

The tips of wings, the portion of the neck cut off and the giblets are best boiled; gristle and bone removed, then

chopped fine for giblet sauce. All fowls should be dressed directly they are killed, though it is preferable to let them hang after dressing a few days before roasting. Select a cool, airy place where they will not freeze. Singe just before placing to cook, as the head sometimes discolors the skin if exposed long to air.

Wanted:

A sheet for the bed of a river.
A glove for the hand of fate.
A ring for the finger of scorn.
Scales for the weight of years.
A button for the coat of paint.
A link for a chain of evidence.
A rung for the ladder of fame.
A feather for the wing of the wind.
A hinge for the gait of a horse.
A tombstone for the dead of night.
A song that will reach an ear of corn.
A hone to sharpen a blade of grass.
A pump for the well of knowledge.
A blanket for the cradle of the deep.
A shoe for the foot of a mountain.

Hints to Housekeepers.

To remove old paint spots from glass, heat vinegar to boiling, dip a cloth in it and rub the spots until they disappear.

Keep a bottle of coal oil uncorked inside the clock case and the clock will not need oiling. Replenish as the oil evaporates.

The juice of any acid fruit can be made into syrup by adding a pound of white sugar to every pint of juice and boiling ten minutes. Seal in pint cans.

An excellent filter can be made from a common flower pot. Close the opening with a sponge, then put in an inch thick layer of powdered charcoal, an inch layer of silver sand, two inches of gravel and small stones.

If a small hole appears in a porcelain lined or granite pan or kettle, mend with a copper harness rivet. If the hole is not large enough to admit the rivet, carefully enlarge it; then insert it, put on the bur and rivet it tightly.

Dissolve half a pound of best glue into a teacup and a half of water, add a teacupful of moderately strong vinegar and mix thoroughly. Keep in the dark and closely sealed, and it can be used without warming, unless in the coldest weather.

Have a small wide-mouthed jar in the bath room to hold the odds and ends of soap, and when three-fourths full, fill the jar with boiling water, add the juice of a lemon and a teaspoonful of glycerine, and you will have a pleasant "jelly" with which to whiten and soften the hands.

Many housewives object to using the baking powder on the market, owing to the possibility of adulteration. Will such try the following formula? Sift three times a quarter of a pound of flour, a quarter of a pound of baking soda and a half pound of cream tartar. Store in an air-tight can.

To remove plum, grape, and berry stains, pour through boiling water, and leave in the water until cold. Peach and sweet apple stains should be washed first in cold water. Saturate grass stains with molasses and rub it in well. Through the fruit season it is well to have a jug of Javelle water on hand.

To remove mud splashes from soft dress material, leave until thoroughly dry, then rub gently with a dry corn cob; it will not roughen the goods as a brush does. Lake or sea sand will freshen velvet and remove the dust. Apply fine sand quite freely, then brush until none remains, always brushing the pile the wrong way.

A light stone churn is, in very many respects, better than one of wood, where there is only a moderate amount of cream. A hole can be drilled near the bottom and closed with an oak or hickory plug. The buttermilk can be drawn off, butter washed and salted in the churn. Put a bail on the churn of good strong wire; it can then be lowered into the well to cool cream or butter. Rub the butter bowl and paddle occasionally with salt.

Alphabet of Success.

Attend carefully to details.
Be prompt in all things.
Consider well, then decide positively.
Dare to do right, fear to do wrong.
Endure trails patiently.
Fight life's battle bravely.
Go not into the society of the vicious.
Hold integrity sacred.
Injure not another's reputation.
Join hands only with the virtuous.
Keep your mind free from evil thoughts.
Lie not for any consideration.
Make few special acquaintances.
Never try to appear what you are not.
Observe good manners.
Pay your debts promptly.
Question not the veracity of a friend.
Respect the counsel of your parents.
Sacrifice money rather than principle.
Touch not, taste not, handle not intoxicating drinks.
Use your leisure for improvement.
Venture not the threshold of wrong.
Watch carefully over your passions.
Xtend to everybody a kindly greeting.
Yield not to discouragement.
Zealously labor for the right, and success is certain.



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For Quality, Unsurpassed.

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We have learned something in 65 years lantern making. The best evidence of it is the

Clear White Light of the DIETZ.

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demand the attention of anyone having large or small amounts of money upon which a safe and commensurate return is desired.

These Certificates are issued in any amount from $100 upward, and bear 4% interest, which is compounded every 6 months.

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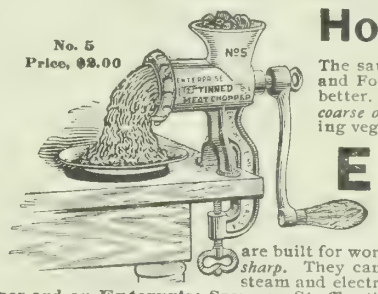
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Our 1906 Model Machine saws faster, runs easier and will last longer than ever. Adjusted in a minute to suit a 12-year-old boy or the strongest man. Send for catalog showing latest improvements. First order gets agency.
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ENTERPRISE Meat Choppers

are built for work. They are strong and durable, cut clean and *stay sharp*. They cannot rust or break. 45 sizes and styles, for hand, steam and electric power, $1.50 to $300. With the Enterprise Chopper and an **Enterprise Sausage Stuffer** the farmer has an ideal outfit for taking care of his meat at killing time. These useful machines can be had of any hardware or general store. If not, write us about it. See that the name "Enterprise" is on the machine you buy. Write for the "*Enterprising Housekeeper*," a book of 200 choice receipts and Kitchen Helps, sent **free.**

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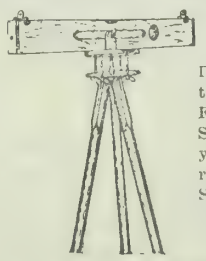
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The Markets.

San Francisco Produce Report.

San Francisco, Nov. 28, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 83¾@ 82⅝	86⅞@ 85¾
Thursday	83⅞@ 83	87¼@ 86¼
Friday	84⅛@ 83⅛	87⅝@ 86⅛
Saturday	84 @ 83¼	87⅜@ 86⅛
Monday	83⅞@ 83⅜	87⅛@ 86⅝
Tuesday	84⅛@ 83⅜	87⅛@ 86¾

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	44⅜@43½	44 @43⅜
Thursday	44⅛@43¾	44⅛@43½
Friday	44⅛@44	44 @43⅛
Saturday	44⅛@43⅞	43¾@43½
Monday	44 @43⅝	44⅛@43⅜
Tuesday	43⅞@43⅛	44⅛@43¾

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 35 @1 34¾	$1 40 @1 40
Thursday	1 36½@1 35⅞	1 40¾@1 40¾
Friday	1 36½@1 36⅛	1 41½@1 41⅛
Saturday	1 35¼@1 35	1 40⅝@1 40⅜
Monday	1 35¼@1 35½	1 40½@1 40½
Tuesday	1 35⅝@1 35½	1 41 @1 40¼

Wheat.

Trading in the local wheat market has not been especially active, and on account of the arrival of rather heavy supplies from the north, prices have shown a tendency to drop. Rather disquieting rumors from some of the leading wheat producing countries regarding the world's supply have had a somewhat reactionary effect, but the general tone of the local market is inclined toward weakness. The latest report from Chicago says: "Crop news from Argentine will outrank all other considerations that are likely to be brought into action in the wheat market this week. It is a critical period in the life of the crop there, harvesting having just begun in a small way in the north, not extending into the really large and important producing sections until next month. Rainfall has been quite abundant in the north and deficient in the south. The rain in the north would be a decided bull factor, while in the south it would for a time be a bearish influence. It will be remarkable in view of the clean record for big and increasing crops that has been made in the last three years if the present crop escapes disaster. Meanwhile the world's shipments are large, mild weather in southern Europe extending the period of shipments by water from Russian ports, necessitating there also the forcing of unnatural shipments in view of the crop shortage claimed by official and private authorities."

California Milling	$1 40	@——
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 40	@1 42½
Northern Bluestem	1 42½	@1 45
Northern Red	1 32½	@1 35

PRICES OF FUTURES.

Tuesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.41@1.40¼ and December wheat from $1.35⅝@1.35⅛.

Flour.

The flour situation is as yet practically unchanged. The uncertainty regarding the Argentine wheat crop makes for unsettlement, but the large flour sales and the excellent milling demand resulting therefrom add to the confidence of the trade at the present level. It is said that export sales of flour by the leading Minneapolis millers in the last day or two have been larger than generally believed and very much larger than the mills have reported. Locally there is no Oriental export demand to speak of, but in the North it is steadily on the increase.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Receipts have been somewhat heavier during the past week and have had a tendency to deflect the course of prices still more. For good bright lots of spot feed barley there is still a fairly active demand, while the off grades are moving rather slowly at appearing quotations. Trading in futures has been fairly brisk and values have averaged around $1.20⅞ for May and $1.17½ for December.

Feed, No. 1 good to choice spot	$1 17½	@1 20
Feed, fair to good	1 13	@1 15
Chevalier, No. 1 to choice	1 30	@1 35
Chevalier, common to fair	1 15	@1 25

Oats.

The market is still strong for Northern white oats, sales having been made at quotations. The market at Northern primary points is relatively higher than in San Francisco, and it is therefore quite possible that it will advance here. Now that a good rain has fallen, there will no doubt be a demand for seed oats, and, if so, oats should move off readily at quotations. There is a fair demand for feed varieties, choice red bringing $1.50. The top quotations for blacks and reds are for seed varieties only.

White oats	$1 47½	@1 55
Black oats	——	@1 75
Red, choice new	1 35	@1 60
Red, fair	1 20	@1 30

Corn

Arrivals of Western corn continue rather light. There has been a fair demand for choice old corn for milling purposes and sales have been made up to $1.42½ for yellow and $1.40 for white. This price can hardly be maintained, however, as the new crop from the East is now beginning to move this way, and can be landed here sacked at $1.25 per cental for both yellow and white. This is a difference of about $3 per ton between the new and the old crop. Very little export business is going on in corn, but it is hoped that, as in 1905, a good demand for export will spring up early next year. California small round corn is selling up to $1.55, but with a rather light demand. White Egyptian is apparently too high to come into general use at present, and feeders of Brown Egyptian are not buying heavily.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 37½	@1 40
Small Yellow	1 50	@1 55
Egyptian White	1 37½	@1 40
Egyptian Brown	1 22½	@1 25

Rye.

The rye situation remains unchanged both as to price and to trading. Millers, who are practically the only buyers, are pretty well stocked up, and are declining to buy any more at the present quoted price, as they believe it will soon reach a lower level.

Good to choice	$1 45	@1 50

Buckwheat.

Owing to rather free arrivals of buckwheat, it is rather hard to sell at the top quotations, though holders are not willing to reduce prices any.

Good to choice	1 50	@1 75

Beans.

Limas continue to attract a good deal of attention owing to the marked advance in price. One of the principal lima bean holders seems to have the situation pretty well in hand, and, while the market has advanced from 3c to 4c at primary points, it is quite possible that a further improvement may take place. Limas have been in good demand this season, and a liberal filling by shorts has sent prices rather high for so early in the season. Conservative dealers seem to think that prices are high enough for the present. Limas are being jobbed on the street at quotations, with not much disposition being shown toward buying for other than immediate requirements. All beans showed an advance during the current week, even pinks doing better. Some cars have been booked for Eastern shipment up to $2.10, but the general market seems to be about 2c. Bayos and blackeyes, being in light supply, are naturally high, and are not meeting with favor, as the difference between the price of pinks and bayos is so great that bayos must either decline in price or pinks must advance. The question is, which shall it be? Some choice large white beans have been booked for New York up to $2.60, and small whites are meeting with a little more favor at $3, as against $2.90, which was last week's prices. Prices at primary points are as high as $2.75 for good stock. Red beans and red kidneys are moving slowly at appearing quotations.

Small White, good to choice	$2 85	@3 00
Large White	2 00	@2 60
Pinks	1 75	@2 00
Pinks, damaged	1 00	@1 25
Bayos, good to choice	3 50	@3 65
Red Kidneys	3 00	@3 50
Reds	3 00	@3 10
Limas, good to choice	4 00	@4 25
Black-eye Beans	4 60	@4 75

Dried Peas.

The situation contains little of interest this week, being practically unchanged. Eastern prices are not as strong as they were a month ago, and Eastern peas can now be landed here at $2.40, as against $2.75 a short time ago. There is not much trading anticipated here before spring, when a good demand for fertilizer peas should develop.

Green Peas, California	$2 25	@2 40
Niles	1 75	@2 00

Hops.

Prices are virtually unchanged, but a slightly firmer tone exists in the local market for choice grades, which are able to command a fraction of a cent more money. The poorer grades are still neglected, however. Choice hops now bring 10c to 10½c per pound, prime hops 9c to 9½c and fair to medium hops 7c to 9c. It is figured by jobbing interests that there are 60,000 bales of hops more on hand to-day on the Pacific coast than there were at this date last year. This naturally has a depressing influence, and the firmer tone for choice hops is hardly considered substantial. Jobbers think that there is more likelihood of lower prices obtaining than that there will be any further advance. Sonomas are selling at 9½c to 10c, but there is very little life to the trading because dealers are offering hops in the East cheaper than they can be bought from dealers on the coast. The only speculative movement is the discounting of prices by several dealers for future delivery.

Good to choice 1905 crop	7½@ 10½

Wool.

There is no trading market for wools of the California fall clip. One or two sales of such wools are reported at about the quotations given, but for the most part buyers at this point are hesitating about handling any extensive amount of fall wool at these figures, owing to the fact that the Boston market is very weak on defective and short wools, such as comprise the bulk of the California fall clip. Reports state, however, that there is a good demand for wools suitable for worsteds. The feeling among growers is still one of confidence, and they are pooling their interests and have agreed upon prices, which they think represent the fair valuation of their product as regulated by the law of supply and demand. The talk about Australian competition has not had much of a "bearish" tendency as yet.

FALL.		
Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11
SPRING.		
Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

The demand for hay has been fairly good this week and arrivals have been about normal, notwithstanding the weather. The tone of the market is naturally weaker, as the rains of the past week have lessened the fear of a short hay crop in 1906. Nevertheless, holders of hay realize that 1906 crops are far from assured, and no notable drop in prices is anticipated.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The rain will no doubt weaken the market on millstuffs, though it will take some weeks before green feed will be in any supply. The north continues to ship stuff to this market, nearly all steamers arriving from northern ports carrying good cargoes of shorts and bran.

Alfalfa Meal, ₱ ton	$18 00	@ 20 00
Bran, ₱ ton	21 00	@ 22 00
Middlings	27 50	@ 29 00
Shorts, Oregon	21 00	@ 22 00
Barley, Rolled, choice	25 50	@ 26 00
Cornmeal	30 50	@ 31 00
Cracked Corn	31 00	@ ——
Oilcake Meal	——	@ ——
Cocoanut cake or meal	21 00	@ 22 00

Seeds.

Mustard seed is working off slowly at quotations, but it is probable that Eastern buyers will soon come into market again and clean up what little seed remains unsold. It is probable that the rain will help the demand somewhat and incidentally a slight advance in the price of grass seed is to be expected.

Alfalfa	$13 00	@14 00
Flax	——	@——
Mustard, Yellow	3 25	@ 3 50
Mustard, Trieste	4 25	@ 4 50
		Per lb.
Canary		6½@ 7
Rape		2½@ 3
Hemp		3¾@ 4
Timothy		5½@ 6

Honey.

The honey market, as has been predicted, has declined quite materially this week. Water white can now be bought at 4½c in the South, and even at this figure there is little buying. The Hawaiian honey crop has been a very large one this season and has been an important factor in regulating the price of amber honey. A great deal of the Hawaiian honey has been shipped direct to England, where it is largely in use in the manufacture of various kinds of foodstuffs. California bee men are being forced to a realization of the fact that honey is produced in so many different parts of the world that a failure of crops in one small district does not necessarily mean higher prices.

Extracted, Water White	4½@ 4¾
Extracted, White	4¼@ 4½
Extracted, Light Amber	3¾@ 4
Extracted, Amber	3 @ 3½
Extracted, Dark Amber	2½@ 3
White Comb, 1-frames	8 @ 9
Amber Comb	6 @ 7

Beeswax.

Good to choice, light ₱ lb	26	@27
Dark	24	@25

Live Stock and Meats.

The market remains steady with a tendency toward firmness on the part of small veal and hogs. Large veal is also firmer as to tone but unchanged in price. Receipts are only moderate and this is keeping up prices which ordinarily should decline as the turkey season approaches.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	4¾@ 5½
Beef, 2nd quality	4 @ 4½
Beef, 3rd quality	3 @ 4
Mutton—ewes, 8@9c; wethers	9½@10
Hogs, hard grain, 150 to 250 lbs	5⅝@ 5¾
Hogs, large, hard, over 250 pounds	5⅛@—
Hogs, small, fat, under 150 lbs	5⅜@—
Veal, large, ₱ lb	5½@ 7
Veal, small, ₱ lb	7 @ 8½
Lamb, spring, ₱ lb	9 @10

Hides, Skins and Tallow.

The hide market is a little uncertain just now, with some indications of weakness and other indications of strength. The quality of the hides now coming in is poor and there is no great amount of activity. The bulk of the November and December takeoff is already sold.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	@—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin		1 50@2 00
Pelts, medium, ₱ skin		90@1 25
Pelts, short wool, ₱ skin		60@ 90
Pelts, shearling, ₱ skin		20@ 50
Horse Hides, salted, large prime, each		3 00@—
Horse Hides, salted, medium		2 75@—
Horse Hides, salted, small		2 25@—
Horse Hides, dry, large		1 75@—
Horse Hides, dry, medium		1 50@—
Horse Hides, dry, small		1 00@—
Tallow, good quality		4 @4½
Tallow, poorer grades		3½@3¾

Bags and Bagging.

The market continues rather uninteresting, so far as spot values and sales are concerned. Stocks are about cleaned up, and present buying is only in limited quantities, and necessitated by failure to provide a sufficient quantity earlier in the season. The Calcutta market on futures is very strong and June grain bags are quoted at 7 and 7½c.

Bean Bags	6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7½@7¾
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7¼@7¾
Wool Sacks, 4-lb	— @ 36
Wool Sacks, 3¼ lb	— @ 34

Poultry.

The market this week shows some improvement on all grades of poultry. Young stock and all large stock is in demand at appearing quotations. Turkeys show some improvement, and it is probable that these prices will be maintained, unless Eastern receipts of dressed turkeys should be heavy and have a depressing effect on the market.

Turkeys, choice Young, ₱ lb	18	@ 19
Turkeys, live gobblers, ₱ lb	18	@ 19
Turkeys, live hens ₱ lb	18	@ 19
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 50	@ 6 50
Fryers	4 00	@ 4 50
Broilers, large	3 50	@ 4 00
Broilers, small to medium	2 50	@ 3 00
Ducks, old, ₱ dozen	4 50	@ 5 50
Ducks, young, ₱ dozen	4 50	@ 6 00
Geese, ₱ pair	2 00	@ 2 25
Goslings, ₱ pair	2 25	@ 2 50
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	1 75	@ 2 25

Butter.

Butter is firmer for choice grades only. Other grades are somewhat neglected at reduced quotations. The general tendency is toward steadiness and fixed values.

Creamery, extras, ₱ lb	26	@28
Creamery, firsts	—	@25
Creamery, seconds	21	@23
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	23½	@24½
Mixed Store	—	@20

Cheese.

The cheese market continues firm, owing to a very fair export demand for

Oriental shipment. All grades are in demand in the local market.

California, fancy flat, new	13	@14½
California, good to choice	—	@13
California, fair to good	11	@12½
California, "Young Americas"	13	@14
Eastern, new	16	@17

Eggs.

There has been a sharp decline in the egg market and prices are now several cents weaker on California stock than a week ago. This has been brought about largely by the large number of good Eastern eggs offering at about 20c per dozen. Storage eggs are being neglected.

California, select, large, white and fresh.	—	@46
California, select, irregular color & size.	—	@42
California, good to choice store	26	@28
Eastern firsts	23	@26
Eastern seconds	20	@21

Potatoes.

The strong Southern and Eastern shipping demand mentioned last week and the week before has fallen off quite perceptibly, and the result is that stocks of river Burbanks are accumulating rapidly, and that prices are sagging badly. Salinas Burbanks of choice grade are still scarce and bringing good prices. Oregon potatoes of good quality are scarce and bring good prices, while inferior grades are plentiful and weaker in price.

River Burbanks, ₱ cental	60	@	80
Salinas Burbanks	1 00	@	1 35
Oregon Burbanks	75	@	1 15
Tomales	80	@	90
Sweet Potatoes	1 60	@	1 75

Vegetables.

Late vegetables of all kinds are in good supply and are bringing as good prices as at any time this year. The tomato season is fast drawing to a close, and, owing to the large amount of frost-bitten and defective stock, and the comparatively small amount of good stock now arriving, there is an unusually wide range of quotations. Tomatoes from across the bay are bringing from 40c to $1.25 per box, while Los Angeles stock does not sell for more than 75c per box. Such vegetables as string beans, egg plant, green peas, etc., are becoming very scarce, and are consequently bringing a good price. Onions and garlic remain firm and peppers of all kinds are now sold only by the pound and at good high figures.

Beans, String, ₱ lb	9	@	11
Cabbage, choice garden, ₱ 100 lbs	65	@	75
Egg Plant, ₱ lb	5	@	7
Garlic, ₱ lb	5	@	6
Onions, New Yellow Danvers, ₱ ctl.	1 10	@	1 25
Onions, Australian Brown, ₱ ctl	1 15	@	1 30
Peas, Green, ₱ lb	4	@	5
Peppers, Bell, ₱ lb	5	@	6
Peppers, Green, ₱ lb	4	@	5
Tomatoes, ₱ box or crate	40	@	1 25
Artichokes, ₱ doz	15	@	60

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

There has been a fair demand for all kinds of deciduous fruits now in the market. Apples are in good supply and prices are being well maintained. Grapes are scarce and show the effects of the rain, falling somewhat below the quotations for choice stock. Berries are nearly cleaned out of the market, with the exception of the large variety of strawberries, which are still in fair supply and selling readily at quotations. Pomegranates and nectarines are in good demand and appearing quotations are being maintained.

Apples, choice to select, ₱ 50-lb bx	85	@	1 25
Apples, good to choice, ₱ 50-lb. box	50	@	65
Apples, fair to good, ₱ 40-lb box	25	@	40
Figs, ₱ two layer	85	@	1 00
Grapes, Verdell, crate	—	@	1 00
Grapes, Tokay, ₱ crate	—	@	—
Grapes, Muscat, ₱ crate	—	@	—
Grapes, Cornichon, crate	—	@	1 00
Grapes, Black, ₱ crate	—	@	—
Huckleberries, ₱ lb	10	@	12½
Plums, Late Coes Red, ₱ crate	—	@	—
Raspberries, ₱ chest	—	@	—
Strawberries, large var., ₱ chest.	5 00	@	6 00
Whortleberries, ₱ lb	9	@	10
Persimmons, ₱ box	75	@	1 25
Pomegranates, ₱ box	1 00	@	2 00

Dried Fruits.

The dried fruit market is still in good shape and firmer as to general tone, though prices are unchanged. Prunes especially are astonishing everybody by their steady gains, and it now looks as though there would be very small supplies left in first hands by the first of the year. Apples are in good demand, both for Eastern shipment and local consumption.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	—@ 7¾
Apples, extra choice to fancy, 50-lb boxes.	8¼@ 9½
Apricots, Royal, good to choice, ₱ lb	7½@ 8¼
Apricots, Royal, fancy	8½@ 9
Figs, 10-lb box, 1-lb cartons	55 @62½
Nectarines, White and Stanwick, ₱ lb	8 @ 8½
Nectarines, red, ₱ lb	—@ 8
Peaches, unpeeled, good to choice	7¾@ 8¼
Peaches, unpeeled, fancy to extra fancy	8½@ 9
Pears, standard, ₱ lb	—@ 8½
Pears, choice to fancy	10 @12
Plums, Black, pitted	5½@ 6½
Plums, Red, pitted	7 @ 8
Plums, Yellow, pitted	6 @ 8
Prunes, Silver, good to fancy	5 @ 8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4½c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c; 80-90s, 2¾@3c; 90-100s, 2½@2¾c; small, 2¼@2½c.

COMMON SUN-DRIED.

Apples, sliced	5	@ 5¼
Apples, quartered	4¾	@ 5¼
Figs, White, in bulk	2½	@ 3
Figs, Black	2½	@ 3

Raisins.

The local raisin situation remains without change, so far as prices are concerned, the main feature being the disagreement between the growers and packers in the Association. Outside packers are still offering raisins at about 1c lower than the prices made and said to be maintained by the Association, and, in view of this fact, buyers are not disposed to handle Association raisins. In the East the same feeling is said to exist regarding prices, and a large amount of seeding is being done on old stock rather than pay the prices named by the Association.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40	@——
London Layers, 3-crown, 20-lb box	1 50	@——
Fancy Clusters, 4-crown, 20-lb box	2 00	@——
Dehesas, 20-lb box	2 50	@——
Imperials, 20-lb box	3 00	@——
2-Crown Standard loose Muscatel	5¾@	—c
3-Crown Standard	6 @	—c
4-Crown Standard	6½@	—c
Seedless Thompsons, 50-lb boxes	6½@	—c
Seedless Sultanas	5 @	—c
Fancy, 16-oz. Seeded	8¼@	—c
Choice, 16-oz. Seeded	8	c
Fancy, 12-oz. Seeded	6⅝	c
Choice, 12-oz. Seeded	6⅜	c

Citrus Fruits.

Navel oranges are coming into the local market in good quantities, and are showing up much better as to quality than heretofore, being considerably riper. Prices are somewhat weaker, owing to the heavy receipts. Lemon prices are firmer, while grape fruit and limes are steady.

Oranges, fancy	1 75	@	2 50
Oranges, choice	1 25	@	1 75
Oranges, standard	90	@	1 25
Oranges, Seedlings	90	@	1 15
Lemons, California, fancy, ₱ box	3 00	@	3 50
Lemons, California, good to choice	1 75	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ₱ box, new	1 75	@	2 50
Limes, ₱ box	3 00	@	4 00

Nuts.

The almond market continues very weak, owing partly to the large crops of this year and partly to the fact that there was more than the usual carryover of the 1904 crop. Prices remain the same as they were fixed by the growers some time ago, but dealers do not seem disposed to attempt to handle much of the crop at such figures. On the contrary, they are buying in a rather hand-to-mouth fashion, their purchases being large enough to cover immediate requirements only. The walnut crop is showing up somewhat better as to quality than was at first anticipated, but the size of the crop will prove even smaller than the most conservative estimates had placed it. Walnut prices remain quotably unchanged, but the general tendency is toward an advancement.

Peanuts, fair to prime	4½@	5½
Cal. Walnuts, No. 1 soft shell	——	@13
Cal. Walnuts, No. 2 soft shell	—	@ 9
Cal. Walnuts, No. 1 hard shell	—	@12½
Cal. Walnuts, No. 2 hard shell	—	@ 8½
Almonds, IXL, ₱ lb	11	@12
Almonds, Ne Plus Ultra, ₱ lb	11	@12
Almonds, Nonpareil, ₱ lb	11	@13
Almonds, Languedoc, ₱ lb	7½@	—
Almonds, Golden State, ₱ lb	7	@—
Hard Shell, ₱ lb	5	@—

MAIL ORDER HOUSES.

Do you get the price list of the IMPERIAL CASH STORE? If not, better send for it to-day. The best, cheapest and most reliable Mail Order House on the Pacific Coast. 531 Washington Street, San Francisco, California.

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We have been handling Turkeys in this market for the past thirty years, and with such a long experience can give you the best results. Full weight, full prices and prompt returns is our motto. Write us for information.

D. E. ALLISON & CO., Inc.
117-119 Washington St., San Francisco.

WOOL.

Have you any on hand and unsold? If so, tell us how much and kind, and we will give you valuable information that will help you in selling.

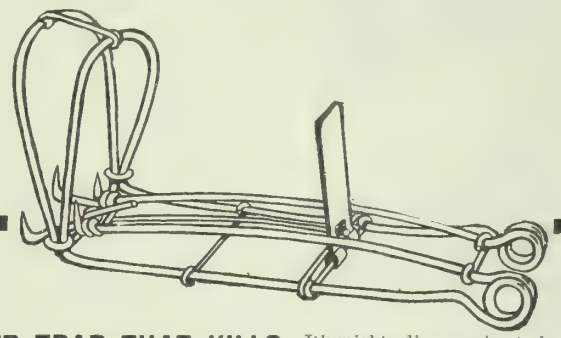
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14 Sansome Street, - San Francisco.

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Many separators have one or more of these qualifications. The only one that has them all is the **Empire.**

Let us prove our statements to you. Don't take our word for it. Investigate thoroughly before you decide. The more thorough your investigation, the more completely you will prove to yourself that the **Empire** is the cream separator you need.

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Pacific Coast Office, Portland, Oregon.

THE DEERE IMPLEMENT CO.,
Agents, San Francisco, Cal.

THE DAIRY.

Methods of Feeding Skim Milk Calves.

The increased use of milk separators in the dairy sections of the country has resulted in greater attention being paid to raising calves on skim milk. It is well settled at this time that practically as large, strong and vigorous calves can be grown on skim milk, supplemented by some suitable grain feed as on whole milk, providing they are properly fed and cared for. A recent Farmers' Bulletin reviews the whole subject:

Enriching Skim Milk.—There is no question but that whole milk is the normal food for calves, and when the cream or butter fat is removed it becomes necessary to replace it in the calf ration with some equivalent but cheaper form of feed. A number of the stations have made experiments with different feeds to learn which is most efficient for this purpose. Corn meal has been found the cheapest and best supplemental grain for this purpose at the Iowa Station. Whole corn and Kafir corn meal have given good results at the Kansas Station. At the Nebraska Station germ oil meal and linseed meal have proved efficient substitutes, and in a recent bulletin of the Idaho Station good gains of oats are reported.

A Kansas Method.—The method of procedure in rearing the skim milk calf at the Kansas Station was about as follows: The calf was allowed to run with its mother the first four or five days of its life. It was then removed and left twenty-four hours without food, when it became hungry and was easily taught to drink. For a week thereafter it was fed whole milk, at the rate of four pounds in the morning, two pounds at noon, and four pounds at night. Within two or three weeks after removal from the cow, skim milk was gradually substituted for whole milk at the rate of half a pint per feed, until the entire amount was skim milk. About a month after the calf was taken from the cow it was receiving twelve or fourteen pounds of skim milk; at two months eighteen pounds, and finally reached twenty-two to twenty four pounds per day.

The grain added to the ration was fed dry in boxes. The calves began to eat grain when ten days to two weeks old. At first a handful was put into the calf's mouth as soon as it had finished drinking its milk, and it soon learned to eat with a relish from the food boxes. The Kafir corn meal or other grain was never mixed with the milk. The calves were fed what grain they would eat up clean.

When the calves were ten days to two weeks old they began to nibble hay, and were thereafter fed all they would eat. The hay was given fresh, twice daily. Some hay from mixed grasses is considered best, with bright prairie grass a close second. Clover and alfalfa may be gradually added to the ration after the calves are several weeks old. Alfalfa alone was found to be too loosening for young calves. Changes from dry hay to pasture must be made gradually or the calves are almost sure to have scours. This is done by turning them on pasture for only a short time the first day and gradually increasing the period, or by mixing increased amounts of green feed with their hay until they are getting about all they will eat.

The most convenient way of feeding calves has been by putting them in stanchions. Here they are kept for a half hour after feeding until their mouths dried out and they had lost their desire to suck each other's ears. Fresh water was kept within reach of the calves all the time, and it was surprising to find how many times a day the calves took a sip.

Results.—Calves thus treated made an average gain of 1.58 pound daily up to five months of age, results which are considered satisfactory. The cost of the gain in one test was at the rate of $2.26 per 100 pounds for skim milk calves, $7.06 for calves fed whole milk, and $4.41 for calves running with their dam. When put in the feed lots the skim milk calves made better gains than either of the other two lots.

Calves fed sterilized creamery skim milk made as good gains as when fed hand separator skim milk. A proprietary calf meal and flaxseed meal were fed in addition to grain, but did not increase the efficiency of the ration, besides being expensive and practically useless. No advantage resulted from adding rennet in the ration. Calves fed on buttermilk made average daily gains of 1.79 pound per head, as compared with 2.02 pounds for calves fed skim milk, and were less subject to scours. Calves on whey made satisfactory gains where care was taken to feed suitable grain and hay rations in addition. Calves made better gains on shelled whole corn than on corn chop. With Kafir corn, however, the best gains were made on the ground grain. A mixture of corn and ground Kafir corn gave better results than either fed separately.

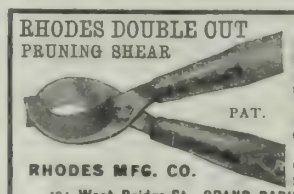
(To be continued.)

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Count the pieces – notice the difference—and you'll understand why the one who has to do the cleaning prefers the simple Sharples Tubular.

There are other advantages just as much in favor of the Tubular. Write today for catalog V-131—it tells you all about the gain, use, and choice of a separator.

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The U. S. makes the difference $34.00 month

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Now, how quick did Mr. Bruce get his money back? Well, the *extra* profits alone paid for his U. S. in just about 10 weeks. Many thousands of satisfied users prove the

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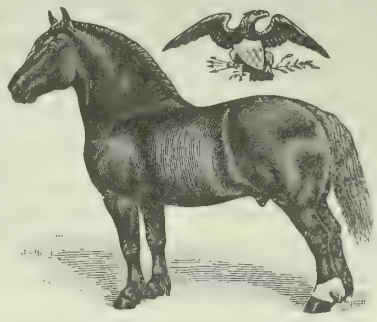
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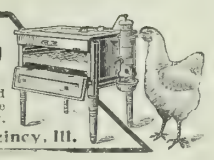
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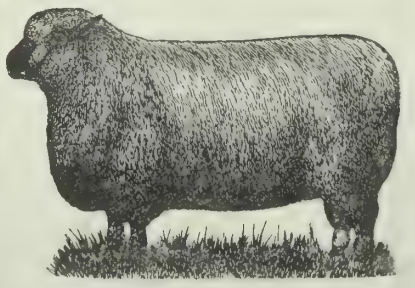
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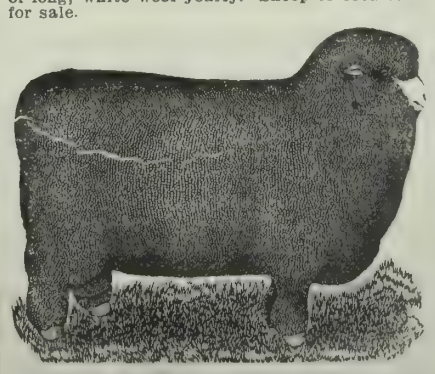
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Michael Farrell.....Mountain View

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ALHAMBRA, 230.—M., H. C. Raap; L., James Kelly; Sec., Mrs. L. T. Raap. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Martinez.

AMERICAN RIVER, 172.—M., A. D. McDonell; L., Mrs. Laura Hansen; Sec., Miss Carrie Hansen. 2d & 4th Sat. from Nov. 1 to June 1, 7 P. M., June 1 to Nov. 1, 2 P. M.

ANTELOPE, 100.—M., R. A. Pryor; L., Mrs. W. A. Malloway; Sec., Miss Sadye Peterson. 2d & 4th Sat. 11 A. M., school house, Sites.

BENNETT VALLEY, 16.—M., J. M. Talbot; L., P. Hanson; Sec., John Keppel. 1st & 3d Sat. 2 P. M., Bennett Valley Grange Hall, near Santa Rosa.

BOWMAN, 327.—M., W. H. Curtis; L., Mrs. Jennie Burtscher; Sec., Mrs. C. T. Musso; 2d & 4th Sat. 8 P. M., Bowman.

CAPITAL, 305.—M., W. W. Greer; L., Miss Jessie Shaw; Sec., Miss Nellie Burnside. 1st & 3d Fri. eve. 8 P. M., Daly's Hall, Oak Park.

CASTORIA, 322.—M., W. B. Mathews; L., Seth W. Morrill; Sec., Mrs. Julia Mathews. 2d & 4th Sat. eve., French Camp.

DANVILLE, 85.—M., W. Stewart; E. L., C. E. Howard; Sec., Miss S. 1st E. Wood. & 3d Sat. 2 P. M., Danville.

EDEN, 106.—M., H. V. Monsen; L., Mrs. A. H. Christensen; Sec., Miss Olga H. Christensen. 2d & 4th Sat. at different homes.

ELK GROVE, 86.—M., Fred Sehlmeyer; L., Geo. Schlmeyer; Sec., Miss Florence E. Lembeck. 1st & 3d Sat. 2 P. M., I. O. O. F. Hall, Elk Grove.

ENTERPRISE, 129.—M., George Jones; L., John Plummer; Sec., Edna Jones. 1st & 2d Sat. eve., Enterprise Grange Hall, Walsh's Station.

FLORIN, 130.—M., L. C Stewart; L., Melvina McFie; Sec., Miss Susie Cox. 2d & 4th Sat. 2 P. M., I. O. O. F. Hall, Florin.

GEYSERVILLE, 312.—M., Joseph E. Metzgar; L., Daniel W. Sylvester; Sec., Miss Edna Metzgar 2d & 4th Sat., Woodmen's Hall, Geyserville.

GLEN ELLEN, 299.—M., Robt. P. Hill; L., Chas. A. Kennedy; Sec., Thos. Johnson. 1st & 3d Sat. 2 P. M., N. S. G. W. Hall, Glen Ellen.

GOLD HILL, 326.—M., R. A. Lafayette; L., L. C. Gage; Sec., Chas. L. Miller. 1st & 3d Sat. eve. 8 P. M.; Grange Hall, Gold Hill.

GRASS VALLEY, 256.—M., O. L. Twitchell; L., W. H. Bryan; Sec., Mrs. R. S. Twitchell. 1st & 3d Sat. 7:30 P. M., Fraternal Hall, Grass Valley.

LINCOLN, 218.—M., Geo. E. Hyde; L., Miss A. Corpstien; Sec., Mrs. R. L. Stevens. 2d & 4th Fri. 8 P. M., Grange Hall, Cupertino.

MAGNOLIA, 261.—M., Mrs. Wm. Gautier; L., Wm. Higgins; Sec., Miss Gertrude Higgins. 2d Sat., 1 P. M., Grange Hall, Magnolia.

MOUNTAIN VIEW, 332.—M., M. Farrell; L., Mrs. E. J. Farrell; Sec., C. P. Berry. 1st & 3d Sat. eve., Forester's Hall, Mountain View.

NAPA, 307.—M., Mrs. O. E. Borrette; L., D. J. Brown; Sec., Miss Nellie A. Borrette. 1st & 3d Sat. 1:30 P. M., Masonic Temple, Napa.

OAKLAND, 35.—M., D. W. Gilbert; L., Mrs. C. F. Emery; Sec., Mrs. N. G. Babcock. 1st Sat 7:30 P. M., 3d Sat. 2 P. M., I. O. O. F. Hall, Oakland.

ORCHARD CITY, 333.—M., Dr. E. C. Abbott; L., Mrs. E. W. Waite; Sec., Mrs. O. A. Putnam. 2d & 4th Tues. eve., Campbell.

PETALUMA, 23.—M., A. S. Hall; L. Margaret A. Ellis; Sec., Mrs. Ella McPhail. 2d & 4th Sat. 1:30 P. M., K. of P. Hall, Petaluma.

POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

PROGRESSIVE, 308.—M., J. D. Silvia; Sec., Emma Brigham. 1st & 3d Sat. 2 P. M., Redmen's Hall, Healdsburg.

ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

SACRAMENTO, 12.—M., C. E. Reese; L., Mrs. L. Dudley; Sec., Mrs. Silas Orr. 2d & 4th Sat. 1:30 P. M., Forester's Hall, Sacramento.

SAN JOSE. 10.—M., C. R. Williams; L., Mrs. E. Marcen; Sec., Mrs. Ella I. Saunders. Every Sat. 10:30 A. M., I. O. O. F. Hall, San Jose.

SANTA ROSA, 17.—M., T. J. Pilkington; L., Mrs. M. M. Gregory; Sec., Miss F. L. Gamble. 2d & 4th Sat. 1:30 P. M. from Oct. 1 to April 1, 2 P. M. from April 1 to Oct. 1, Fraternity Hall, Santa Rosa.

SEBASTOPOL, 306.—M., Horace Weeks; L., Mrs. Bonham; Sec., J. McKenzie. 1st & 3d Sat. 2 P. M., Janson's Hall, Sebastopol.

SELMA, 291.—M., Donald Patton; L., Mrs. F. M. Rhodes; Sec., Mrs. O. L. Abbott; 2d & 4th Sat. 2 P. M., Vincent Hall, Selma.

STOCKTON, 70.—M., Wm. L. Overhiser; L., Mrs. J. E. Leadbetter; Sec., N. H. Root. Every Sat. 1:30 P. M., Fraternal Hall, Stockton

SUNNYVALE, 331.—M., J. F. Spaulding; L., Nettie M. Fuller; Sec., W. C. Beach. 2d& 4th Tues. eve., Sunnyvale.

TULARE, 198.—M., E. Barber; L., J. Tuohy; Sec., Mrs. B. I. Morris. 1st & 3d Sat. 11 A. M., Goldman's Hall, Tulare.

TWO ROCK, 152.—M., G. W. Gaston; L., J. L. Schwobeda; Sec., Mrs. T. G. King. 1st & 3d Thurs. 2 P. M., Two Rock Grange Hall.

WEST PARK, 335.—M., Rev. J. W. Webb; L., Mrs. Minnie E. Sherman; Sec., John S. Dore.

SACRAMENTO COUNTY POMONA, 2.—M., H. C. Muddux; L., J. Holmes; Sec., Mrs Jennie Stillson. 5th Sat. of months having same, Forester's Hall, Sacramento.

SANTA CLARA COUNTY POMONA, 4.—M., F. H. Babb; L., Mrs. H. F. Tuck; Sec., Mrs. M. J. Worthen.

SONOMA COUNTY POMONA, 1.—M., P. Hansen; L., G. N. Sanborn; Sec; Mrs. A. E. Johnson. 3d Wed. in January, April, July and October.

PENNGROVE, 337.—M., C. E. Parkinson; Sec., A. S. Farquas.

EL VERANO, 315.—M., J. F. Tate; Sec., Mrs. J. Magnon.

Tulare Grange.

To the Editor:—An interesting session of Tulare Grange, P. of H., was held on Saturday, Nov. 17. After formal opening and reading minutes of the last meeting, the first and second degrees were conferred on a class of three.

The subject of the day was then considered, Brother I. N. Wright opening the discussion, "What can be done by farmers of this locality to develop the resources of their farms in the most profitable manner?"

Brother Wright opened his discourse by reference to the beneficial results of farmers' co-operative societies in developing and promoting the resources of the farm, greatly aiding its profits. Brother Wright had grown wheat until his land was exhausted. His crops had grown too small and the price of wheat had gone so low as to be less than cost of production, and he, as a result, was $7000 in debt. The Co-operative Farmers' Society had no existence here then, but in due season the Farmers' Co-operative Creamery Co. was organized, Brother Wright fell into the ranks, joined the procession, pinned his faith to the products of the dairy, cow, the chicken and the hog. He raises wheat for his hogs and chickens and alfalfa for all his stock. The $7000 has been paid off. His cows are not all the best milk strains, but their milk earnings are from $70 to $160 each per annum. His alfalfa yields five tons per acre per annum of hay; he sold twenty head of cattle, two years old, for $39.80 each, and $1000 worth of hogs. "The chicken (for Brother Wright puts the chicken first), the cow and the hog are great factors in developing the resources of the farm in the most profitable manner." Brother Wright pins his faith to the chicken, and declares the value of the eggs marketed, not taking into consideration those consumed on the farm, greatly exceed the value of the gold and silver produced in this State. Brother Wright is an old miner, and knows whereof he speaks. From twenty-five acres of raisin grapes "hogged off" he realized $600 and a cash market for his hogs. He prefers Durham cattle. The milk product is very nearly as good as Holstein or Jersey, and as a beef animal it is superior to either. The chicken, the cow, the hog all give the best results where the best feed and the best care are given to them. They are great aids to the farmer of this locality in making the farm profitable. He considers a good education a great advantage to the industrious farmer, and scientific agriculture an essential to making the farm profitable; for this reason the science of agriculture should be taught in our public schools. The public school is the place where the teaching of agriculture should begin. The instruction given there will create an interest in the farmer's calling, and a love of it which will last as long as life and make the farm more profitable.

Brother Thomas Jacob, of the executive committee of the State Grange, told of Grange progress of the past year, and the bright prospects of increased membership during the coming year. The best organizers will be sent out, and greater exertions for more Granges and a larger membership will be made.

It was reported that the supervisors of this county pay the security companies' charges on security company bonds for county officers. Tulare Grange condemns these payments, if they are made. The doing so is an imposition.

At the next meeting the subject will be, "To what extent should the National Grange urge the interests of agriculture before the National Congress?"—Brothers E. C. Shoemaker and C. E. Davis. J. T.

The Enterprising Housekeeper, a book of tested, economical recipes and illustrated kitchen helps, published to sell at 25c, will be sent free if you send your name and address to the Enterprise Manufacturing Co of Pa., 371 Dauphin street, Philadelphia.

The Fruit Growers' Convention Next Week.

The programme for the thirty-first convention of the fruit growers of California, which takes place in Santa Rosa, commencing Tuesday, Dec. 5, and closing Friday, Dec. 8, is as follows:

Tuesday, Dec. 5.—Call to order; invocation, Rev. Wm. Martin; address of welcome, John P. Overton, Mayor of Santa Rosa; address, Governor George C. Pardee; opening address, Hon. Ellwood Cooper, State Horticultural Commissioner; report of the committee on co-operation, A. R. Sprague.

Tuesday afternoon, 1:30 o'clock.—The apple—growing and marketing.—"The Apple in Oregon," M. O. Lownsdale; "The Apple and How it Should be Handled," E. H. Mills; "Preparing the Apples for Market," C. H. Rodgers; "Apples in Northern California," Geo. N. Whitaker; appointment of committees; discussion.

Wednesday, Dec. 6, 9:30 A. M.—"Transportation and Marketing"—Report of the California Fruit Distributors, Hon. Alden Anderson; "Marketing California Products and Exposition Work from a California Standpoint," J. A. Filcher; "Transportation and Marketing," R. D. Stephens; "Marketing Outside of Transportation Lines," A. N. Judd; "England as a Market for Our Fruits," Edward Berwick; "Packing Prunes in Tin Cans in Their Natural State." J. Luther Bowers; discussion.

Wednesday afternoon, 1:30 o'clock.—Address, President David Starr Jordan; address, President Benjamin Ide Wheeler; "Deciduous Fruit Shipments and Conditions," Hon. Alden Anderson; address, Luther Burbank; "Luther Burbank and His Work," Prof. E. J. Wickson; discussion.

Wednesday evening, 7:30 o'clock.—Reception and entertainment by Ladies' Improvement Club.

Thursday, Dec. 7.—"Horticultural Day"—"Diseases of Scale Insects," Prof. S. M. Woodbridge; "The Scutellista—Success or Failure, Which?" J. W. Jeffrey; paper, Prof. C. W. Woodworth; paper, Prof. Warren T. Clarke; "Quarantine Co-operation," Edward M. Ehrhorn; discussion.

Thursday afternoon.—Trips around Santa Rosa over the electric lines, in automobiles and carriages.

Thursday evening, 7:30 o'clock.—"Science and the Fruit Grower," Prof. Vernon L Kellogg; "The Influence of the Weather on Crops," illustrated, Prof. Alex. G. McAdie; "Pear Blight and its Control in California," illustrated, Prof. M. B. Waite; "Pear Blight Work in California," Prof. Ralph E. Smith; "How May the Pear Thrips be Controlled," Dudley Moulton; discussion.

Friday, Dec. 8, 9:30 A. M.—"Viticultural Session"—"Alicante Bouschet and Petite Sirah, Two Wine Grapes Worth Planting," Frank G. Swett; "Importance of Viticulture to California." A. Sbarboro; "The Vine in Sonoma County," A. R. Gallaway; "The Better Refrigeration of Perishable Fruits," A. R. Sprague; "The Citrus Products of Sonoma County," G. B. Baer; "Fruit Growing a Business," H. C. Rowley; discussion.

Friday afternoon, 1:30 o'clock.—"Relation of the Agricultural Society to the Fruit Grower," Al Lindley; "Horticultural Laws from a Nurseryman's Standpoint" M. McDonald; "Practical Horticultural Sanitation," O. E. Bremner; "Possibilities of California Insectary," E. K. Carnes; "Silk Culture in California," S. R. Bellany; "Free Public Market," Thos. Johnson; discussion; adjournment.

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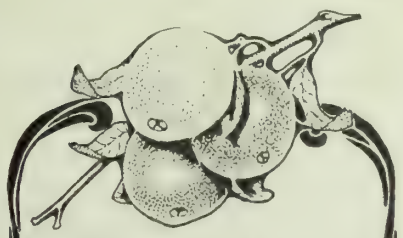
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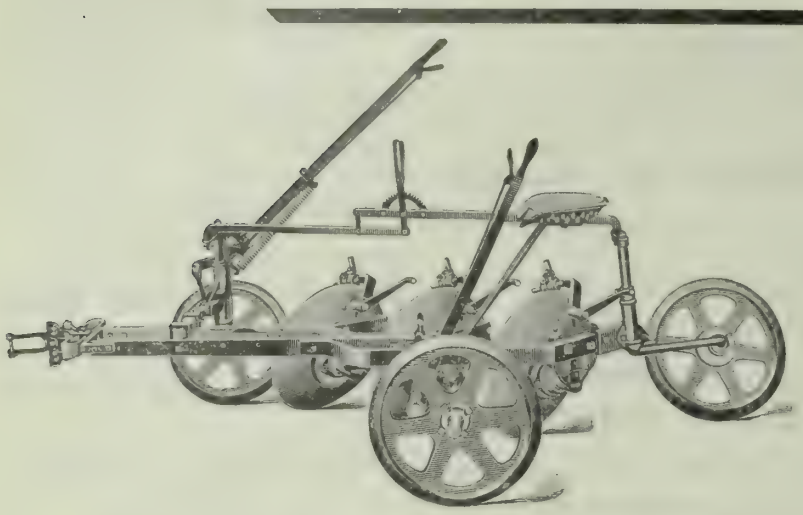
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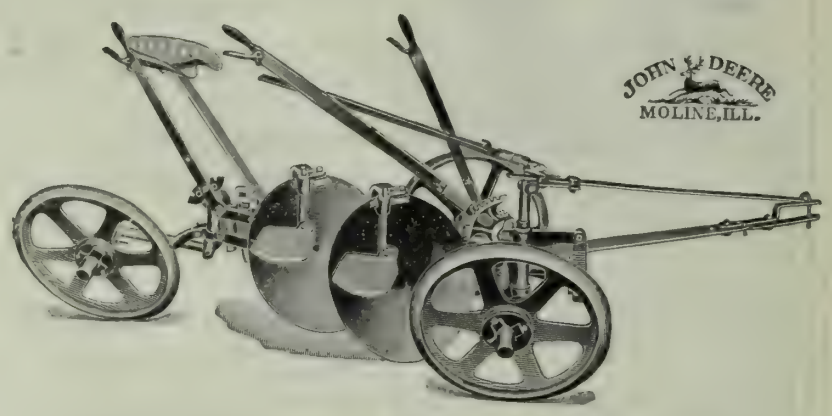
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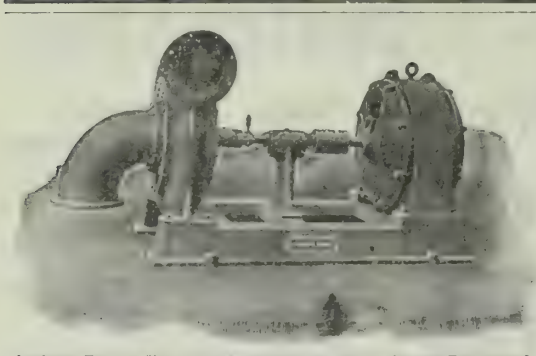


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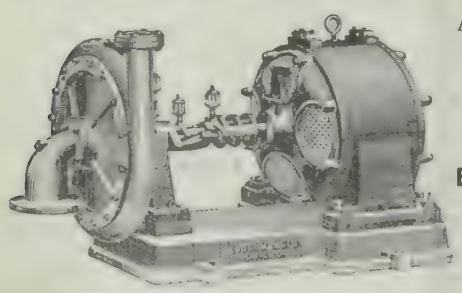


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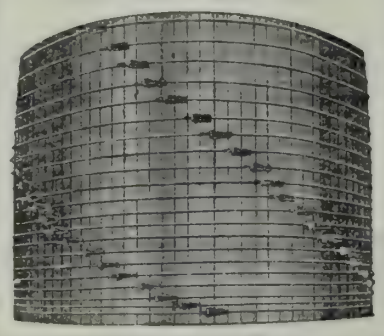
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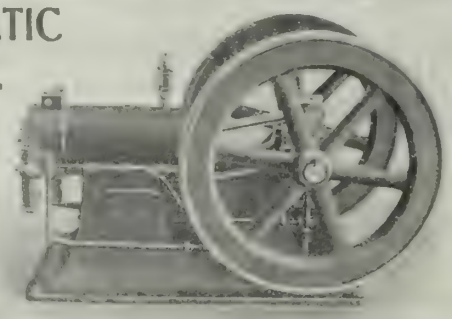
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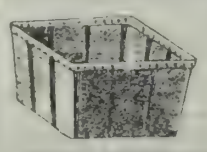
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 24. SAN FRANCISCO, SATURDAY, DECEMBER 9, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

In the Lemon Packing House.

In the two views of lemon handling given in recent issues, we have endeavored to convey the idea that the lemon is one of our most advanced horticultural products, because of the amount of skillfully directed labor which has to be placed upon it to insure commercial acceptability, and the amount of capital required to provide facilities for the best exercise of such labor. There are of course other horticultural products which require these expenditures and investments, but they belong in another class, because they completely change the nature of the product. Grapes are handled, for instance, both for raisins or wine, and the process requires both skill and capital, but neither the raisin nor the wine looks like the grape—both, in fact, have been manufactured out of semblance to the material gathered from the plants. With the lemon no such change has occurred; the lemon is still fresh fruit, and the art of the handler consists in preventing all changes which are at enmity with its fresh beauty and flavors. The lemon is so delicate in its nature that this is not easy to accomplish, and many producers have wearied of the lemon product because of its requirement of time and money. Mr. C. C. Teague, manager of the Limoneira Co. of Santa Paula, recently reviewed the history of lemon curing in southern California in this interesting way: Unfortunately about 75% of California lemons are gathered in the winter and spring months, while the chief demand is in midsummer. The experience of growers and shippers who attempted to hold their fruit until the summer months was very discouraging, on account of the heavy decay, that they had concluded that the most profitable way was to ship the fruit within from four to six weeks after gathering. The result was that the fruit was not equally distributed throughout the year, and at times the market would be so glutted that the fruit sold below cost. Not being able to hold his lemons when the market was low, and having only a small percentage of his crop in summer when the price was usually high, one can, perhaps, imagine how the lemon grower's books balanced at the end of the year, and will probably be able to answer the question often asked: Why are so many lemon groves budded over to oranges?

The old style lemon house, and the one still used by many of our growers, is a double-walled, double-roofed affair, some of them having patent systems of ventilation, and others depending upon doors and windows. When attempting to hold lemons by this method they are massed in the house and the fruit just picked given exactly the same ventilation as that which has been in the house several months, when, as a matter of fact, lemons in different stages of curing require radically different treatment as regards ventilation. As a result of this treatment some of the fruit is usually wilted from receiving too much air, while the greater portion of it is badly decayed from receiving too little.

Proper ventilation is the keynote of success in keeping lemons, and after extensive and expensive experience along the old lines, Mr. Teague concluded that it is entirely impractical to hold lemons in large quantities for any great length of time by the old method. Growers have all been on the wrong track in believing a low temperature first in importance. If the ventilation is right the temperature will take care of itself. Mr. Teague decided that the proper keeping points for lemons is just that point between where they will wilt and where they will sweat.

To put these ideas into practice the Limoneira Co. of Santa Paula was the first to equip a house on the open air plan, and as that company has the most extensive plant and the widest experience in this method, a description of its lemon house and its methods may be of interest, and will be given in connection with other views in a later issue.



Handling Lemons in the Limoneira Packing House—Moving From Washer to Curing Tents.

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E. J. WICKSON.....Horticultural Editor

SAN FRANCISCO, DECEMBER 9, 1905.

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The Week.

Rains have reached nearly everywhere since our last issue and have justified our Thanksgiving admonition not to worry, but to proceed confidently with whatever is worth doing. The rains have been a little spasmodic, it is true, and have not shown the traditional character of a California winter rain, but the soil has been measurably moistened, the mountains have been covered with snow, the streams have risen and various activities which find power and motive in water, each according to its needs, have resumed aspects of confidence. Plowing has commenced almost everywhere, and seeding will follow in the belief that the dry streaks below will be reached by the next storm, and certainly this desirable condition will be rendered more sure by opening the surface, as is now being generally done. Some very interesting peculiarities of this year's storms are noted by Mr. Blochman in another column of this issue.

A sort of a hold-over Thanksgiving proposition in agricultural lines is found in the report of Hon. James Wilson, Secretary of Agriculture, which was made public just after our last issue went to press. It is a matter of so many millions that realization is difficult. Analyzing the principal crops for the year, the Secretary says that corn reached its highest production at 2,708,000,000 bushels—a gain of 42,000,000 over the next lowest year, 1899. Hay is second in order of value, although cotton held second place during the two preceding years. The hay crop this year is valued at $605,000,000. Cotton comes third, with a valuation of $575,000,000; wheat, $525,000,000; oats, $282,000,000; potatoes, $138,000,000; barley, $58,000,000; tobacco, $12,000,000; sugar cane and sugar beets, $50,000,000; rice, $13,809,000; dairy products, $665,000,000—an increase of $54,000,000 over last year—and poultry products aggregate over $500,000,000. "During the last sixteen years," the Secretary says, "the domestic exports of farm products have amounted to $12,000,000,000, or $1,000,000,000 more than enough to buy all the railroads of the country at their commercial value, and this with a surplus for which there was no demand at home." Secretary Wilson points out that the farm contributions to manufactories during the year were $2,673,000,000. Under the amendment to the national banking laws authorizing the incorporation of banks with a capital of $50,000 there have been 104 such banks established in the last year, nearly every one of which is located in a rural community and the capital furnished by farmers. All this is enough to make a farmer sit up straighter on his wagon seat and hit the nigh mule a good whack—just for the style of it.

And then speaking of distant trade it may be unpoetic justice for California to harass the Mediterranean orange growers on their own preserves in the north of Europe, but it seems business-like to make a try at it. California orange growers have practically displaced Mediterranean fruit in American markets, and they have also done enough by shipments to Europe to demonstrate the fact that there is no shipping orange in the world like the best type of Navel orange grown in California. This is due in good part to the arid semi-tropical conditions acting in conjunction with American cultural skill and business enterprise. It looks as though California might turn this way some of the many millions which Great Britain now pays to Spain and Italy. The railways propose to join in the experiment by giving a lower rate to Europe than they do to New York. The new rate to Europe is $1, as against $1.25 a hundred pounds to the Atlantic seaboard. The immediate motive is to dispose in Europe of the outside sizes. What is wanted in Europe, it is said, is the large Navel orange which never is seen there. A contrary situation exists on this side, where the smaller fruit evidently has the preference. Under the new conditions shippers will have a right to divert consignments to the European market in the event there is a congestion in the Eastern city where consignments have been originally made. This seems a very promising outlet for a part of the fruit, though experience is needed to define the matter.

A part of the buoyant spirit which is now rife in California will have opportunity to express itself at a general promotion meeting which is to be held in Santa Barbara on Saturday, December 16th. There will be representatives present from all parts of the State, and the general subject for a dozen orators will be "California's Need for Federal Aid." The distant comment would probably be that apparently California is doing so well that she has no need of Federal aid; but such a claim will not prevail. In the first place, all promoters and investors favor a thing which manifests spirit and promise, and recognize the fact that a condition has greater needs than those of dullness and depression. On this count California has greater needs than ever before in her history. Again, California is coming into such demand for home making and investment that the whole country is interested in the better equipment of the State in its new life by the United States, which has duties in reclamation, interior navigation, scientific and industrial investigation which have never been discharged. It is the duty of our representatives in Congress to secure such attention from the general Government, and the first thing to do here is to demand it. We hope all who can will go to Santa Barbara and help the thing along.

To speak of a specific need in this connection reference can be made to the valley reclamation and river improvement. We read in an exchange that Mr. William Hammond Hall, who was once State Engineer, has just written a pamphlet to show that the National and State Governments should pay two-thirds the cost of reclaiming swamp lands that belong to private persons. His argument is based on the admitted contention that it is the duty of the Government to care for navigable waters. This being so, the lands adjoining such waters should be placed by the same Government in a fit condition to grow produce for shipment by such rivers. Navigable waters and goods for shipment are mutually concerned and should come under the same care. However that may be, there is an indisputable ground taken by State Engineer Nourse at Sacramento, who holds that whatever had been done for the Mississippi river ought also to be done for the Sacramento river. "We are just as much wards of the nation as the people of the Mississippi, and we are entitled to just as much consideration. As a matter of fact we are entitled to more, because the Federal Government permitted the hydraulic mining that ruined our land. They ought, in other words, to help us to remedy the mischief that has resulted from their action." All these things are likely to be pushed by Californians until they are realized.

QUERIES AND REPLIES.

Length of Vine Cuttings.

To the Editor:—I am going to plant vineyard this season and am thinking of planting cuttings 2 feet deep or over. What do you think of that depth? My land is mostly sandy loam 7 or 8 feet deep to hardpan. I would thank you for any information as to best depth for planting cuttings.—Planter, Lodi.

The question of very deep planting of long vine cuttings was very fully discussed and experimented with early in the history of California vine growing. It was found that long cuttings planted deeply in the soil only rooted from the upper joints which were nearer to the surface and that the lower extensions of the cane, not only did not grow, but were undesirable, because of the decay which set in. After that it was proposed to plant long cuttings somewhat horizontally and then turn up the ends, trusting that bringing the whole cutting nearly to the warm surface would induce rooting at all the joints and thus produce a stronger vine. This was found to be a very expensive way of planting and nothing was gained by it; consequently during recent years experience has been general that a proper cutting is a rather short one—shorter in heavy ground and longer in light soils, but still short as compared with the cutting which you propose to use. The cutting must be long enough to reach down into permanently moist soil, then it roots freely and the roots extend themselves quite as deeply as the nature of the soil will permit and there has been shown to be no gain by the effort to carry the wood of the orginal cutting deeply into the soil, because of the general disposition of the roots to extend deeply on their own account. There is no advantage ordinarily in having the cutting down a foot below the surface, except possibly in some very light sandy soils where the top 6 inches count for nothing. In the heavier soils the bottom of the cutting should be about 8 inches from the surface. The subject is one which must be determined according to judgment of the conditions of soil in which the planting is to be made.

Legumes for Stock in the Interior Valleys.

To the Editor:—Can you give me any information on the culture of cowpeas in this valley for stock feed, what variety to use, when to be sown and how cared for, or cultivated, I mean? I want to try feeding them to hogs in the field where grown. Also, any information on the culture of Kafir corn and Soy beans in this valley.—Enquirer, Visalia.

If you have land which is moist in the summer, you can get a great growth of cowpeas, and probably the variety known as "Whippoorwill" is the best of them. They should be sown in drills and cultivated long enough to kill down weed growth until the peas get a good start, and then they will protect themselves; but you cannot grow cowpeas during the frosty season, because they are really members of the bean family and exceedingly sensitive to frost. If you want a winter-growing legume, you must take ordinary field peas or vetches, both of which are quite satisfactory in the valley and quite hardy against frost. Kafir corn is generally grown just as Indian corn is—rather thick planting, if you wish the forage; rather thinner, if you are growing for grain. Soy beans should only be undertaken in an experimental way to see how well they may be suited to your particular conditions.

Burning Rusty Stubble and Straw.

To the Editor:—I had land in wheat last season which was destroyed by rust. I cannot burn the straw, for the reason it has been flooded with water loaded with silt and the silt sticking to the straw so it will not burn easily. Will the rust on this straw affect the next crop if sown to wheat?—Grower, Imperial valley.

Our correspondent is on the old Colorado desert where rust appeared this year and did much injury. It is better to burn the rusty stubble and straw, but this would not give freedom from rust next year if the conditions for rusting are right. Rust spores are always present and one cannot escape them by burning the field, though, of course, many are thus destroyed. For this reason the fact that one cannot burn the field should not give particular concern. If conditions favor rust next year you will have rusty grain; if not, the fact that the rust spores remain on the straw and stubble will not induce it.

The reason why interior situations in California suffer from rust, as they did this year, is found in the fact that the season was very peculiar; that heat and moisture occurring together favor the multiplication of this disease, as it has not occurred for years before and may not occur to the same extent for years to come. For this reason we should advise you to go on with your ordinary operations and not be particularly concerned about burning the field.

Root Bacteria and Grape Vines.

TO THE EDITOR:—The soil here at Florin is shallow and light, and is adapted to the growing of small fruits, such as grapes and berries. I have found that barnyard manure does not give the required result in some parts of my vineyard, so I wish to try the nitrogen-fixing bacteria. What legume would be most likely to grow here where the soil is shallow? Would the short time the seed has to make a stand (three or four months) militate against the success of the bacteria? Would it not be best to plant the seed right at the base of the vine, so the bacteria could come in direct contact with the small roots of the grape vines? Could the seed be planted when the ground is dry and be left until the rains, the same as any other grain seed is planted? Would the subsequent hoeing around the vines (probably in three or four months) tend to kill the bacteria-infected legume?—VINE GROWER, Florin.

The legumes which would be most satisfactory for winter growth with you are burr clover and common field peas. These usually grow very well without the addition of nitrogen gathering bacteria. The bacteria will have no effect whatever upon the roots of the grape vine, as they only establish themselves on the roots of leguminous plants. The only advantage of the course which you propose to your vines would be from the plowing into the soil of a considerable amount of green vegetation, rich in nitrogen, which would decay readily, add to the humus in the soil and improve it both in plant food and in mechanical condition. The growth of the legume should be secured in the winter time, when the vine is dormant, so that its growth and plowing-in would not interfere with the growth of the vine. It would not be desirable to maintain the growth of the legume during the summer, because they would exhaust the soil moisture which should go to the grape vine, and growing them at the base of the vine would not bring them close to the small roots of the vine, which are not there. You seem to be a little mistaken in the idea that the bacteria can communicate anything directly to the vine. It can only be of value indirectly by increasing the growth of plants, which by their decay shall furnish plant food, and this should be distributed all through the soil of the vineyard.

Replanting Peach Orchard.

TO THE EDITOR:—I am digging up an old peach orchard, intending to replant with peach trees. Would you kindly let me know if there is any kind of fertilizer that would make them grow well, as I have reason to believe that trees planted in the same ground again are not likely to grow well.—ORCHARDIST, Fresno county.

It is possible that your land may need fertilizing, but it is rather dangerous to undertake to apply fertilizers directly to young trees. It would usually be better to plant the trees and apply the fertilizers to the surface of the ground, not too near the trees, and plow it in after the chief winter rains are over. If you have available stable manure nothing could be better. If you buy fertilizers the sheep manure, which has been available in your county, would be excellent, if not used in excess, or regular commercial fertilizers, which are specially prepared for fruit trees by a number of dealers, are also good. The fertilizer trade is now under regulation of the law, so that you are quite sure to get good value in purchasing.

Grasses for Coast Situations.

TO THE EDITOR:—In seeking information as to what kind of grass would be best to sow on the hillsides back of Redwood City, just on the foothills, I have been informed that it must be an annual grass to produce good pasturage, and that you could inform me of the name of some such grass better than any one else.—AMATEUR, San Francisco.

For best results, you should secure a stand of the perennial grass, if possible, and what you can do in that direction you must determine by experience, because it is conditioned directly on the retentive character of the soil and the degree of moisture which can be retained for a certain time in the dry season. The grasses which will succeed in maintaining life in the root in the more northerly parts of San Mateo county are the Australian rye grass and orchard grass, and seeds of these grasses should be sown at once, if there is at present moisture enough to enable you to work the land. Success in starting these grasses depends very much upon early sowing and as deep rooting as possible during the first winter. Although it is impossible to tell in advance of experiment what degree of success you will attain, we can advise you to make the experiment suggested, as these are the grasses most likely to succeed. If the land should be too dry for these grasses, the best thing you can do is to get a good winter growth of oats or rye for feeding during the winter time. These grains give better results during the short season than any of the annual grasses known to us.

Grafting Grape Vines.

TO THE EDITOR:—I take the liberty to ask you a few questions concerning grape grafting. I have your work "California Fruits," and have read same with interest and profit, but I would like to know some points more fully. I have in my vineyard, at Imperial, San Diego county, twenty acres planted for Malaga, but which prove to be Feher Szagos. I am thoroughly familiar with fruit tree budding, and have done grafting also, but not in grapes, and cannot find anyone here that has. The vines are one and two years old, and have made a wonderful growth and start early in spring there. 1. Should I graft before vine starts growth, or when? 2. With careful work, what percentage should succeed? 3. Do I need an experienced grape grafter? 4. Where can I get such a man? 5. What kind of graft is best in vines ¾ inch to 1¼ inch diameter?—GROWER, San Diego county.

It is not at all difficult to graft grape vines of the size you describe, and if you proceed according to directions given in "California Fruits," pages 289 and 290 of the third edition, which we presume is the one you have, you will get a very high percentage of success. Your general knowledge of grafting will fully qualify you to follow the suggestions given in the book. With the size of vine you mention, the common cleft graft, the left-hand picture on page 29, will be best, and the time to graft will be early in the spring, just when the sap is beginning to flow, although with such a large acreage it will be necessary to begin rather early to get through.

The Garbanzo Again.

TO THE EDITOR:—In regard to "garavances"—I believe that is what they are called—are they a good deal like beans, and do they freeze easily? Are they good yielders in the average soil of California, or do they have a preference of soil? What are the beans used for? Where are the most of them grown in California? What time of the year is the seed usually sown?—READER, Salinas.

The garbanzo is tender like a bean, although the seed itself looks like a pea. They are not usually successful in California, as late planting has to be done because of danger of frost, and the plant does not like the dry season, although in your situation near the coast it might be more satisfactory than in the interior. The seeds are used for culinary purposes, chiefly in the manufacture of soups. They have also attained some reputation lately as substitute for coffee. There is, however, no commercial product of importance.

Australian Rye Grass.

TO THE EDITOR:—Kindly let me know how many pounds of Australian rye grass should be sown per acre, also, where it can be obtained. Would it be good to sow with alfalfa?—GROWER, Monterey.

Australian rye grass seed is usually sown at the rate of fifty pounds to the acre and it is not usual to sow it with alfalfa, as the latter seems to do better by itself. The seed is sold by parties advertising in our columns.

Buckeyes not Good for Stock Feed.

TO THE EDITOR:—Is the buckeye nut of any food value to cows or chickens, or is it poisonous? What is the scientific name of the buckeye?—FARMER, Sonoma county.

The buckeye is not desirable for stock food. It has sometimes been reported as poisonous, but we are not aware that that fact has been definitely made out. The scientific name is Æsculus Californica.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 4, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cool weather prevailed during the week, with frequent heavy frosts. There was a heavy fall of rain in most places Monday and Wednesday, and the most severe snowstorm for several years occurred on November 29th in the foothills and mountain districts of the Sierra. At Redding and Grass Valley the snowfall was 3 inches and it was much heavier in the surrounding mountains. The rain was of great benefit to farming interests. Plowing and seeding have been resumed and range feed has started. Oranges were not injured by the frosts and harvest is progressing; there is a good yield and the fruit is of excellent quality. Tree pruning is in progress in some places.

Coast and Bay Sections.

Cool weather continued during the week and frosts occurred in nearly all sections, but no material injury resulted. Heavy rain fell on the morning of November 29th and severe thunder storms occurred in portions of the bay district. The snowfall in the foothills and mountains was unusually heavy. A correspondent at Niles states that the soil is thoroughly saturated to the depth of 13 inches and is in first-class condition for plowing; the seasonal rainfall in that vicinity is 2.38 inches. The rain during the past two weeks was general throughout the section and in most places was sufficient to start pasturage and soften the soil. Plowing and seeding are progressing rapidly and work has commenced in orchards and vineyards. Oranges have not been seriously damaged by frost and are in good condition.

San Joaquin Valley.

Generous rains fell throughout the valley the first part of the week and were followed by cloudy and foggy weather the last portion. The rains were very beneficial in conditioning the ground for plowing and seeding and starting new feed, which was getting scarce. Heavy frosts occurred frequently during the latter part of the week, but caused no damage. Plowing and seeding are progressing rapidly since the rains. Some orchards and vineyards are being pruned. A large crop of oranges of excellent quality is being harvested and shipped. Feed is very scarce and stock are getting thin, but are healthy. A few warm days are needed to bring on the green feed.

Southern California.

Cool weather prevailed during the first of the week, with rain on Monday and Tuesday, followed by clear, warmer weather. Frosts occurred in some sections, but caused no serious injury. The seasonal rainfall at Anaheim is 5.46 inches, at Upland 3.13 inches and at Poway 4.92 inches. The snowfall in the mountains has been unusually heavy. High water has caused considerable damage at Imperial. Water is rising in the irrigating wells, streams are running and the soil is thoroughly saturated. In some sections the ground is too wet for cultivation. Early sown grain is making good growth and pasturage has become quite abundant. The bright sunshine during the latter part of the week was beneficial to citrus fruits, but oranges are coloring rather slowly and are being picked in limited quantities.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 6, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	3.16	5 83	9 34	12 03	60	38
Red Bluff	1 88	2 08	10.81	6 48	62	32
Sacramento	1.12	1 23	7.60	4.66	60	32
San Francisco	70	.92	8.59	5.53	60	40
San Jose	1 76	2 06	.....	.....	70	34
Fresno	.70	.86	4 82	2.24	62	32
Independence	.04	.42	.45	1 11	56	26
San Luis Obispo	1.74	2 04	4.73	4 34	72	34
Los Angeles	1.44	3 02	1 49	3 09	78	40
San Diego	.32	4 12	24	1.64	64	42
Yuma	1.14	3 15	.81	1.32	70	36

Those who are disposed to rail at cookery schools, and have no respect for cookery except as their mothers did it, are likely to receive a shock by the announcement that under a new policy decided by the War Department officers of the commissary department are to be taught to make bread, and will be given practical instructions in cooking. Officers of the commissary department will, accordingly, be sent to the school of application for cavalry and field artillery at Fort Riley, Kan., for a course in the school for cooks and bakers. It is the belief of the army officers that with the acquirement of practical and technical knowledge by the officers in baking and cooking of food a great reform will be brought about in the preparation of food in the army. Surely this is a paternal policy in the Government, and the maternal is ruled out of it. It is to be expected that a new demand for handsome lieutenants with cooking certificates will arise among our young ladies. To get men who are Apollos on parade and skillful in the kitchen seems almost too much to expect, but it may go far to balance other inequalities which fall to the lot of soldiers' wives.

THE IRRIGATOR.

Irrigation and Drainage Investigations as Related to the Development of the West.

By A. C. True, Director of the Office of Experiment Stations of the United States Department of Agriculture.

The development of the West in every line depends to a very large extent upon its agriculture. In the past mining and grazing have been the chief industries of this region, and in their early stages both were very largely a gamble. Mining was largely confined to working the rich deposits where profits were large but uncertain, and stock raising consisted in running cattle on the open range summer and winter, with no provision against the dangers of heat and drouth in summer, and snow and cold in winter. To-day a new era has come in both industries.

The bulk of our mineral production comes from large deposits of low-grade ores requiring large amounts of capital and labor, and yielding only a small margin of profit which can be easily overcome by an increase in the cost of working. The profitableness of working many such ores depends upon the possibility of securing a cheap food supply. The starvation and freezing incident to the old system in the live stock industry were repugnant to both business principles and humane instincts. Both demanded a change under which a food supply should be provided for times when the seasons were such that cattle would suffer. The providing of such a supply puts the live stock industry on sound business principles. It is seen, therefore, that the development of these two great industries depends upon the contemporaneous development of Western agriculture.

Aside from its influence upon the other industries of that section, agriculture is itself an important industry in the West, the value of the products of the farms being as great as that of the products of the mines. Throughout the greater part of the West agriculture depends absolutely upon irrigation, and in the remaining sections it is greatly helped if water can be supplied to the lands. In general, the purpose of the irrigation and drainage investigation in their work in the West is the advancement of irrigated agriculture by collecting and publishing information as to the best methods of preparing the land for the application of water and of applying water to the crops; the proper quantities of water to apply and the proper stages of crop growth at which to apply it; irrigation on a small scale as a supplement to dry farming or the live stock industry; the effect of existing laws and institutions on the property of the individual farmer and on the best use of the water supply from the public standpoint; and the drainage of seeped and overflowed lands.

Preparing Land for Irrigation.—The settlement of the lands of the West which are reclaimed by irrigation is largely by immigration. These settlers come from sections where irrigation is not practiced, and therefore are ignorant regarding the steps which must be taken to put their land in proper condition for receiving water. Every year thousands of such settlers go to the West, and for their use there has been prepared and published a bulletin stating what must be done in order that the best results may be obtained, and describing the methods and tools to be used in clearing and leveling land. Thousands of these bulletins have been sent to settlers in the West, and have been the means of enabling them to properly prepare their land without the waste of time and means in useless experiments.

Methods of Applying Water to Crops.—There are in general three methods of applying water to crops in the arid region—flooding, in furrows and in basins. These methods are adapted to different soils and different crops, and what may be the best method for one place or one crop may be unsuited to other conditions. This is not always understood, and the use of any particular method is apt to be a matter of chance, regardless of its adaptability, especially in a locality which is just being brought under irrigation. Studies of the results of applying water by the different methods in general farm practice have been made, and in addition experiments are being carried on to make more exact determinations of these results. Reports are published describing the various methods and the conditions to which each is suited. These are distributed free of charge and are bringing about the adoption of the methods best suited to each locality and each crop. It has been found also that the method of applying water has a great influence on the quantity of water required by a crop, making it possible by the adoption of proper methods to greatly extend the irrigated area.

Water Requirements of Crops.—A knowledge of the water requirements of crops is necessary to the engineer in building irrigation works, to the canal manager in disposing of water to farmers, and to the farmer in securing a water supply and in applying water to his crops. The first work undertaken by the office of experiment stations was the collection of data as to the quantities of water used in general practice. The work covered the whole arid West and has been continued since 1899. In addition to this, experiments are being carried on in co-operation with the State experiment stations to determine what quantities of water applied to different crops will produce the best results. The results of these experiments are published and distributed throughout the arid region, and are promoting a more economical use of water, making it possible to reclaim large areas with our limited water supply.

Irrigation of Small Tracts.—The plains extending from the base of the Rocky mountains are poorly supplied with water and are very largely devoted to stock raising, but within the last few years large areas have been broken up and devoted to "dry farming," that is, farming without irrigation. The cultivation of these lands has been repeatedly attempted, with disastrous results, and it is feared by many that an entire dependence on dry farming will bring only a repetition of former experience. However, it is believed that if the farmers can irrigate small areas, while farming larger tracts, they can raise enough to keep their families and their farm animals over years of drouth when their unirrigated crops fail, instead of abandoning their farms as has been done heretofore. Stream water is not available for most of these farms, and it is necessary to secure a supply either by pumping or storing storm water. During the past two seasons several field agents have been employed to collect information as to what has already been done in this line, the cost of wells and pumps, the cost of fuel and operation, the areas served and the crop returns. In addition, laboratory tests of pumps have been made to determine the best styles of pumps, and the conditions under which pumps work at the highest efficiency. These investigations have for their object, first, the demonstration of the possibilities along this line, and second, the supplying of information which will enable farmers to buy the right kind of machinery and operate it to the best advantage. These studies will go a long way to aid in the agricultural development of a large section which is now used only for grazing, and is deteriorating for that purpose.

Irrigation Laws and Institutions.—The studies of the laws and institutions relating to irrigation have had for their first object the gaining of a knowledge of the effects of existing laws in order that their revision from time to time may be made intelligently, with a view to the best use of the water supply. It is in this line that they have their most intimate relations to the development of the West, since the publications of this office on that line have had a great influence in shaping legislation in several Western States. There is no place where the new settler is more at the mercy of others than in securing a water right. The reports of this office regarding laws, regulations and conditions affecting water rights supply to such settlers information which will help them to understand the subject and protect their own interests.

Drainage.—The diversion of water from the streams of the West and its use upon the land has swamped a great deal of land which was formerly arid and was later cultivated profitably. In the West the chief drainage work of this office is in the restoration of the lands swamped by seepage water from ditches and irrigated lands to productivity. In the East the work includes a study of methods of reclaiming swamped and overflowed lands and of improving farm lands which, although not swamped, are too wet for the best results.

To state again, in general terms, the relation of the irrigation and drainage investigations of the office of experiment stations to the development of the West: The whole development of the West, as of every section of the country, depends primarily upon its agriculture; the agriculture of the West depends upon irrigation; and irrigation necessitates drainage; the work of this office has for its object the promotion of irrigated agriculture by investigations relating directly to the practice of irrigation and drainage, and the use of machinery in farm operations. As a governmental agency dealing with irrigation, its work is differentiated from that of the Reclamation Service of the Geological Survey, which is engaged in the construction and operation of reservoirs and other irrigation works in special districts of the arid regions, particularly where there is Government land not hitherto utilized for irrigation by private capital.

METEOROLOGICAL.

A Further Discussion of Weather Conditions.

To the Editor:—Over 6 inches rain for October and November at Flagstaff, central Arizona, 4 inches at San Diego, 3 at Los Angeles, 2 at San Luis Obispo and about 1 inch at San Francisco is the peculiar rainfall for this season to December 1. Whether the excessive rains in the south will again repeat themselves this year like last remains to be seen. Conditions are starting out somewhat similar; but a season often takes a change of phase as it develops. However this be, the central part of the State need fear no drought whenever ample rains fall south. The dry type seasons. of which for southern California we had three in succession ('97–'98, '98–'99 and '99–'00), have their rains come as tag ends of northern storms (Oregon and Washington lows).

A month ago we stated that no permanent high barometer had as yet formed between Point Conception and the bay, and that if it remained so for a month we were certain that at least an average rainy season would ensue, no matter how belated the season was in opening. The high barometer has prevailed along the coast north of the fortieth latitude—the summer type high; this was the cause of the light rains to date. This must now yield to the incoming low (barom.), the rain bearing areas. The several rains in southern California have not all been Sonora's (Mexican tropical coast rains extending northward); they have been rains right off the ocean that on account of the prevalent high barometer northward were forced southward. This never occurs in drier seasons; thirty years of observation gives an absolute certainty to this fact.

Prevalent low barometers towards the Mexican line gave us our heavy rains south last year. In the storm of November 26th and 27th, a few days ago, the low barometer in Arizona suctioned the storm area which had come in north of Eureka toward itself, so that it took the unusual course to cross the Sierras, the eastern California and Arizona deserts through Flagstaff to Mexico. Usually the rain bearing area follows down the coast, west of the Sierras and the San Gabriel range. We cannot yet believe that these conditions will be permanent; next year's rains and perhaps the latter part of this season may be of the usual type.

In this periodic rain belt great variations of type occur in certain seasons. The dry period in the greater part of the last decade south of Point Conception is apt now to have its reaction to a wetter spell.

This winter is going to be much colder than last. Cold began early in the Arctic—freezing in the whaling fleet early in September—the middle of October saw biting frosts in even western Oregon, followed a month later by cold weather here in California. But our cold weather is only in short spells and has no Eastern rigor whatever.

The atmosphere shows the usual amount of moisture, and there is no reason under present barometric pressure distribution why good rains should not fall this month. L. E. Blochman.

Santa Maria, Dec. 3.

THE VINEYARD.

Pruning the Emperor.

Mrs. M. E. Sherman of Fresno, one of our best known growers of the popular shipping grape, the Emperor, gives the California Cultivator an outline of her conclusions on pruning this variety, which will be interesting to other growers:

The Emperor vine is a shy bearer unless rightly pruned. When trellised it oversets with fruit and produces a large quantity of small bunches of inferior grapes, that often fail to ripen. When low pruned it runs to leaf growth rather than fruit. The approved pruning is that of staked vines, with crowns 4 or 5 feet from the ground.

In buying stakes we prefer them 6 feet long, as they can then be redriven two or more times, for they rot after a few years. It pays to char or tar the end that goes into the ground.

The young vineyard is simply let grow the first year without stakes; in the first pruning, if the growth is long enough the strongest canes are selected and tied up one, two, sometimes three of them to the stake, and they should be at least 4 feet long. The top buds often look weak, but can be depended on to push out promptly when tied up, as vine growth naturally starts out at the top of the shoot when the growth is upright. There will always be vines in a young vineyard that cannot be staked until the second year; these are pruned to one or two buds 8 or 10 inches from the ground. Now to return to the young vineyard that we were shaping up—down on the side of the canes that are tied up trim off the laterals except one about 10 inches from the ground, cut this to two buds to form a spur for next year, as on this spur we depend for the wood to renew the top when necessary. The next pruning the young vine receives two or three buds of the new growth at the top should be left to form spurs for the top crown; this is continued each year until the crown becomes too much tangled, when one spur may be entirely removed and new growth brought up from the lower spur again to take its place.

In case the vineyard has been low pruned for a number of years and it has to be reformed into a high staked vine, one or two canes are carried up to the top of the stake and cut off at a bud pointing outwardly and tied firmly. At the low crown cut off two spurs for every cane carried up. If this only leaves one for the low stump the vine is then pruned the next year the same as the young staked vine. If more than one spur is left it is removed the second season, the reason for not taking away more than we provide for is that the excess of sap may break

through the tissues of the vine and black knot start to grow on the weakened spot. While this is a brief outline it covers an experience of ten years with the Emperor grape and a long series of experiments entered into to be sure of the best way.

We have found that winter spraying with Bordeaux makes the use of sulphur some years superfluous. This is not in accord with the University viticulturist teachings, as they believe in two or three sulphurings.

I can only give you our practice here as you ask for that, but would have you consider that we are in the dry interior and that you had best experiment a little for yourself. We spray heavily in the winter with Bordeaux, waiting for a dry time to do it. This takes the carried-over spores of the mildew clinging to the vine; we prefer this as less expensive than the sulphur. Then we watch carefully, and if the slightest mildew shows we use sulphur promptly. At first we were very timid about trusting to Bordeaux, but now find that when we have any mildew showing it is along the creek bottom, where it is probably an infection from weedy growths. When the use of sulphur is practiced, the first application is at the time of the first growth, when it is not longer than an inch or so; the second when the fruit is set, and the third when it is needed.

The best quality of sulphur should be used and as finely ground or pulverized as possible. The old way of shaking it on the sacks is wasteful; use small bellows, or, better yet, a knapsack arrangement carried on the back of the man doing the work, with a blast attachment to force the sulphur under, as well as on top of the foliage.

THE FIELD.

Mining Debris and Agricultural Lands.

The mining interests are proposing a love feast to the valley farmers and joint action to see if the debris cannot be put in places where it will do most good, instead of filling the river beds and turning the water free upon the lands. Prof. S. B. Christy, head of the mining department of the University of California, recently spoke along such lines at a miners' convention at Grass Valley. He requested all persons who are familiar with cases of the actual growth of plants upon this detritus to send to him at the University of California at Berkeley as much detailed information as actual results from their growth upon the "slickens" they may have at their disposition, with the promise of the Survey that all cases of importance will be given a thorough study by the Reclamation Service.

In order to prove that the interests of the farmer and the miner are not antagonistic, but supplementary, he read a very important letter from Prof. Hilgard, which is here given in full:

It would have given me great pleasure to accept your suggestion to attend the meeting of the Miners' Association at Nevada City, to be held this week. But being unable to do so, I beg leave to communicate to you in writing, briefly, some of my views on the solution of the vexed debris question, which has agitated the State so long and has led to the practical stoppage of hydraulic mining. I do so because this seems a promising time for the rational adjustment of the claims of the contending parties—the miners, and the farmers of the valley—to the benefit of both and of the State at large. It seems to me that a calm consideration of the subject, instead of hot contention in public meetings and in courts having but a limited and one-sided knowledge of the wide bearings, would serve to largely reconcile the conflicting interests.

In your excellent and judicially written paper read at the last meeting of this Association you presented some points of view which are of great importance in this connection. While recognizing the serious injury inflicted upon certain portions of the valley lands by the wholesale rushing down of cobbles and gravel from the hydraulic mines, and that these coarse materials can and should be impounded by the miners within the mountains and foothills, you contend that the fine materials, now all comprehended under the unpleasant term "slickens," are, on the whole, not really different in kind from the natural wash of the mountain torrents, such as must always be brought down by them, and can, if properly distributed over the agricultural lands of the valley, be made a benefit instead of a detriment to the farmer. To this view I fully agree, it being evident from the rapid and vigorous growth of the trees and chaparral on the debris within the placer and hydraulic mines themselves that the finer material is well adapted to vegetable growth, even though lacking in humus content. It is the excessive amounts deposited over limited areas, and sorted into beds of sands of several feet here, and sheets of fine, impervious slickens there, that are chiefly objectionable.

Of course, the same thing happens where there are no hydraulic mines or debris, wherever streams inundate agricultural lands, and it is not easy to define the exact increase caused by these mining operations, aside from the gravel masses clearly originating there. If the fine debris could be so controlled that only a relatively thin layer would be deposited each flood season, to be plowed in, or if they could be deposited on the peaty tule lands, they would be a material benefit to agriculture, as alluvial deposits are all over the world.

But a proper distribution of these materials means control of the flood waters of the rivers, an improvement now called for so urgently by so many interests that enormous sums have been set aside by the United States Government for the selection and establishment of reservoirs wherever possible, to serve for irrigation as well as for the development of water power now so urgently needed in the numerous industries connected with electric power, including therein the working of the mines themselves.

Since it is the turbulent flood waters that have been chiefly instrumental in bringing down the debris promiscuously upon the farming lands of the valleys, this work, placed under the direction of the United States Geological Survey, bears in the most direct manner upon the debris question and the possible renewal of hydraulic mining without injury to the agricultural interests. In fact, such efficient and accurate work as is now being done by the Geological Survey in this connection is the condition precedent of the practical usefulness of any Debris Commission, however competent in its membership. The first thing needed is a thorough ascertainment of the facts as they exist, not only in one limited region, but over areas sufficiently great to serve for the framing of a comprehensive policy, the operation of which shall not need amendment at each legislative session and give rise to renewed agitation and disturbance of industries; for the questions involved bear not only upon mining and agriculture, but as well upon commerce and navigation, upon the maintenance of deep sea navigation of the great port of San Francisco, and its bay and river connections, as well as the Government works for coast defense. The problem is a very large one, but cannot be dealt with piecemeal.

In view of the broadness and importance of the interests involved, it seems to me that few questions of greater importance can come before this meeting than that of making a strong move for executive, or, if necessary, congressional action towards authorizing the Geological Survey to include within its reclamation work the matter of the proper utilization of mining debris and natural detritus for the reclamation of waste lands, in addition to the establishment of storage reservoirs for flood waters. The high character of Director Walcott, and his well-known promptness and efficiency in pushing the work under his charge, encourages the belief that if such action is taken we will in a comparatively short time be brought much nearer to the solution of the debris problem and the resumption of the great hydraulic mining industry, than thirty years of contention and half-way measures have been able to bring about.

It cannot be too strongly urged that, instead of being antagonistic to each other, the agricultural and mining industries are vitally concerned in each other's welfare. The suppression of the development of the foothill and mountain regions of the State is injurious to the welfare and progress of the whole—both country and cities—and all good citizens ought to unite to work toward the establishment of a broad policy for the benefit of all.

Berkeley, Cal., Nov. 20. E. W. Hilgard.

FORESTRY.

Eucalyptus as a Hardwood.

Written by Mr. George O. Brehm for the California Promotion Committee.

Although the eucalyptus is a valuable tree when used as a forest cover, as wind breaks, as shade trees, as a source of honey or of oil, or for sanitary purposes, it is as an important commercial wood that it is to be most useful in California. The attention of lumbermen has of late years been drawn to the eucalyptus as a source of supply for hardwood to take the place of the Eastern hickory and oak, the supplies of which are rapidly becoming exhausted. Numerous varieties of eucalyptus have been used for many years in Australia, their native home, as the chief source of hardwood timber. The uses of eucalyptus are many and diverse. It enters into the construction of buildings, ships, bridges, railroad piers, telephone lines, fences, paving, vehicles, agricultural implements, furniture, barrels and numerous other articles, Having then so many and varied uses, the eucalyptus, which flourishes better in California than in its native home, is destined to occupy an especially important place among the timber products of California.

For the eucalyptus can be grown as any other crop. The common blue gum, which is the foremost commercial variety, is the fastest growing tree in the world. In a grove in California set in 1885 and cut for fuel in 1893 there were, seven years later, some trees 2 feet in diameter and more than 100 feet high. Other trees twenty-five years old have attained a diameter of 6 feet in California. Groves of blue gum when six years old will yield from fifty to seventy-five cords of 4-foot wood per acre. Indeed, the possibilities of this wood are so great that the United States Forest Service is taking up the work of forestation in co-operation with the State of California. Planted close enough to develop forest conditions the eucalyptus will take care of itself. Even in soil too poor for cultivation forests can be reared easily and cheaply, bringing returns three times as soon as that of any other hard wood. The ratio of growth is well illustrated by the fact that the blue gum will attain in twenty-four years the diameter that it will take an oak over 200 years to make. There is much land in California, now considered too poor for growing any crop, that could profitably be planted to eucalyptus for fuel purposes, the return from which would fully justify the planting.

So much for possibilities of rearing eucalyptus forests. There is already a large and valuable supply of this timber extending throughout California from east to west, and from south almost to the northern limits. It is now used more largely than any other wood in California for fuel purposes, but is becoming recognized as too valuable to be used as such. In the Santa Clara valley is a large establishment devoted exclusively to the manufacture of articles from eucalyptus. It is the best known wood for the manufacture of insulator pins for heavy transmission electric power lines; all parts of wagons and carriages are made from eucalyptus as well as the wood work of agricultural implements and carpenters' tools. The proprietor of this establishment who has had fifteen years' experience in working with eucalyptus pronounces it as good as the best hickory for these different purposes.

The severest test of strength and endurance that any wood is called upon to stand has been successfully withstood by eucalyptus in its use as trip-hammer bars. These automatic hammers, whose heads weigh 200 pounds, have broken the best hickory obtainable while eucalyptus has stood the test. In the preliminary tests of strength made at the University of California with green wood grown on the campus the strength was proved to be equal to that of hickory or oak. Tests of seasoned timber are not yet complete, but will show much higher results. With the falling off of hardwood supplies in the East the prices have correspondingly advanced and quality has fallen off. As eucalyptus is not friendly to bitter frost and extreme cold, California with her favorable climate will keep in the lead and is destined to furnish the future supply of hardwood in the United States.

Eucalyptus is specially adapted to the manufacture of piles on account of its long straight stem as well as its resistance to rot and to attacks of teredos and other marine animals. Blue gum piles last twice as long on the Pacific coast as do those made from other woods. Whole piers in the southern part of the State are constructed of it. One man who has his eucalyptus forest, as others have their orange groves and apple orchards, writes that he has sold from his grove nearly $10,000 worth of wood during the last ten years. The demand for these piles is now greater than the existing groves of eucalyptus can supply.

As a source of fuel the eucalyptus is especially valuable on account of its rapid growth—as mentioned above—as well as on account of its oily nature. One grower says that from 200 acres of eucalyptus set largely in soil too poor for crops he can cut 1000 cords of wood per year indefinitely. Two dollars and fifty cents per cord are received on the stump for the crop, thus showing its profitable return.

The eucalyptus is especially useful for sanitary purposes. When planted in low and poorly drained situations it removes stagnant water and purifies the soil. This property of this most useful tree has given rise to its name, "The Fever Tree" in Spain.

But of all the varied uses to which the eucalyptus in its many parts is adapted it promises to be most important from an economic point of view to us here in California as the future source of supply of hardwood on account of its rapid growth, the great strength of its timber, the fact that it is as easily seasoned as other hardwoods of its grade as well as its peculiar fitness to the climate of California. These facts all combine to assure a great future to this important timber.

HORTICULTURE.

More About Berry Growing.

To the Editor:—In my last communication to your paper I answered some of the many inquiries regarding fruit raising, as well as berry raising. I will now tell you first how I stake and wire them:

Most of my berries are cultivated only one way. I set my posts about 20 feet apart and about 5½ feet high. I use wire on each side of the post, when the wire is properly drawn tight and fastened. At each end of the row I cross the wires on each post. If the canes are spread too much I use a piece of wire bent like the letter S, drawing the two wires together. I then prune the berries back within 10 inches of the wire on the top.

I grow blackberries and raspberries the same way. For dewberries I use a single wire about 1 foot above the ground. Prune the cane to about 4 feet long, twist it around the wire, fastening it in two places with a small piece of wire. They are now ready to cultivate and in good shape for pickers when the crop comes.

The Lawton is a good blackberry. The Wilson is early and requires very rich soil to get the best results. As for the "ever-bearing" kinds, I think some of them cannot be beaten.

I use baskets for my berries and ship in crates, the same as they do in the East. I have trays that hold twelve to twenty-four baskets, with a handle to carry them. These my pickers take to the berry field. The pickers are furnished with a pocket with a strap, which they buckle around their waists, and put a basket in the pocket. Now they can pick with

both hands. The trays they keep close to them to set their baskets in when filled. This is the quickest way that I have found.

Only the finest berries are picked for the market. The second quality is picked for jelly. Keep your baskets and crates clean. Have your picker pick the berries clean from leaves and trash that are apt to fall in the berries when picking. I never pick in the middle of the day—always mornings and evenings. Strawberries will keep better in the dark.

In reply to F. W. in regard to the currant worm, spray with buhach. Take two tablespoonfuls of it to a common pail of water and stir well. Let it stand thirty minutes and spray as the bushes start to bloom, and then about eight days after spray the fruit again.

Currants should be picked with the stems on, strawberries with a short stem, as they ship better.

When you set out plants of any kind use water. Make the ground loose, spread out the roots carefully, pour on the water, throw in some loose dirt. Wait till water disappears and be careful not to press wet dirt with your hands. Fill all around the plants, removing all sticks and clods when your plants are set. Do not wet the top of the ground by irrigating for at least twenty-four hours. In all your work use common sense and let your sympathy go with your work. J. B. Everson.

Middletown, Cal.

Experience With the Sugar Prune.

To the Editor:—Seeing an article in a recent issue about the celebrated Sugar prune, that your readers would like some information regarding its habits, quality and growth, I will to my best ability describe these from actual experience.

I purchased the Sugar prune wood when it was at $2 per foot for grafting purposes. I cut down over fifty French prune trees, top grafted all of them; they all grew nicely as far as growing was concerned. The second year they had some fruit, but not very much. The third year they were loaded to such an extent that the tree was all out of shape; in fact every limb was propped up, from one to two props being required to hold the limb up; even then they would break off wherever there was a little limb that had no prop. The fruit on some trees I thinned and it attained a fair size. Those unthinned were very small and did not get any sugar, but hung on to the tree until they turned sour and sort of mushy-sour. The Robe de Sergeant will do the same thing if overloaded. When cured we cooked some of the very nicest of the prunes, but they did not compare with the celebrated French prune. The flesh is very coarse and the flavor cannot compare with the French. While it is a larger prune, when thinned properly, it lacks in flavor. The tree is not an annual bearer; while having a good crop one year it has only a few scattering fruits the next season. No matter how favorable the weather the trees look as if a cyclone struck them. Because the wood is too weak to hold up the fruit the tree has a drooping habit like the weeping willow. A good many trees here are being pulled up by the roots; a good many more will follow. It may be good for a curiosity, but for commercial purposes it never will be planted to any great extent.

We have nothing to equal the French prune. It is the standard all-around tree and fruit. If I was to plant 100 acres it would be the Petite prune. If somebody wants to experiment with the Sugar prune let him try a few trees and be convinced. As far as growing a first quality of prunes here in this locality we grow the best, just as good if not better than at San Jose. If you or any one will take the trouble to come here in the shipping season you would think you were in San Jose, as all of our prunes mostly go out under that brand. If you will further trouble yourself, go to the freight depot at San Jose and you will be surprised; the amount of prunes, carload after carload, from Imperial, Sonoma county, go there to act as facers for the celebrated San Jose ¼% higher prune. It is always the best that reaches the top; so with our prunes, they are always on top. Even if we have not got the name, our prunes get there just the same. I would like to hear from others on the subject. Healdsburg Grower.

Healdsburg, Nov. 29.

Points on Pruning the Orange Tree.

Mr. A. J. Drothzen of Covina is a practical orange grower who thinks while he works, and his conclusions as given to the Covina Argus will be read with much interest by others who are handling the orange tree:

A Subject for Study.—Pruning is one of the leading arts in horticulture that every fruit grower should study—study it from a rational as well as scientific standpoint. The so-called practical or amateur fruit growers have many different ways of pruning that they call systems, etc., but hardly any of those "ways" or modes of the work are recognized as a system by scientists. It is true that a part of the work may be done a little different in different countries, according to climatic conditions.

I think there is only one established theoretical system which has a foundation alike in all fruit growing countries, and when you follow or take that as a base in your work, then your pruning will improve your trees and increase the fruit both in quantity and quality. The amateur who thinks he knows more than those who have served their apprenticeship, and is trying to do things his way, is generally making a failure, or at least a bad job of it.

Manuring or any kind of fertilizing of the land has never been practical or thought necessary in any new agricultural country. We know that from experience, and we do also know that the time will come when the farmer will quit hauling the stable manure and his straw stacks away to be burned to get it out of the way.

It is the same case with pruning in any new fruit country that is being settled by amateur fruit growers before the trees are overgrown with wood that does not set marketable fruit. This was the common run of caring for the deciduous orchards all over southern California in the early days; the peach and apricot trees had to be propped in order to keep the trees from breaking down even with a scanty amount of fruit that had set high up in the tops of the trees. Pruning had to take the place of propping in the deciduous orchards. The growers of citrus fruit have already started to follow the example, or at least not to prop any more than they have to.

Young and Old Trees.—The problem that the fruit in the peach and apricot orchard can be improved by pruning has long ago been solved. But what about the citrus trees? One of the prominent nurserymen and fruit growers of Pasadena 18 years ago gave me at that time a very severe scolding for trimming up some orange trees in the way that I had learned to prune. Mr. Clark said never to use a knife on an orange tree. "The more wood the tree has the more oranges it will bear."

This is true with the orange tree as long as it is young, but after it has borne six or eight heavy crops then it will need a proper pruning or else there will be a decrease in the production of the fruit year after year until the trees turn sickly, etc. This is the main cause for dropping oranges late in the season. It does not matter how you irrigate, cultivate and fertilize your grove, the oranges will drop in spite of everything, because the tree is overburdened with wood foliage that will have to be supported first; the growing crop will take up its sustenance after the tree has supplied itself.

Benefits of Pruning.—Prune your trees properly in the right time, and that will prevent your oranges from dropping after the oranges have once set. There is an exception, though, with the Valencia late, as this tree cannot be pruned without sacrificing the most of the year's crop when giving the trees a hard pruning, but the crop on the early oranges can be increased the first year if the pruning is done as soon as the last crop is taken off, and the work may be continued until the month of May and sometimes as late as June.

Anyone who is interested in orange culture should take a look at the pruning Otto Anderson of the Kerckhoff ranch, south of Covina, has had done. The Washington navel trees were pruned last winter about the time the trees were in bloom. Navel trees pruned on that system and at the time when the trees are in bloom should readily set a heavier crop, but we have had very unfavorable weather for the orange trees this season, and I claim that is the cause of a light crop everywhere this year. But the navel trees on the Kerckhoff ranch have a little more fruit on than most of the unpruned trees in the same neighborhood. The Valencia trees were pruned up in a much better shape. That work was done last summer, a long time after the present crop was set, so of course the Valencia crop is very small this year, but anyone who wishes to study pruning should take a look at that grove now and then return next season after the crop has set. The grove is a beauty to look at, and next year it will be a great sight to see the abundant crop it will set.

Rational Work.—The top of a heavy orange tree should not be cut back, but it may be thinned out so as to let the sunshine in, when a part of the larger limbs are taken out and the remainder are trimmed, then the whole tree will naturally form itself in a uniform way, producing fruit bearing wood and not as many suckers as when a tree is cut back or whole top is cut away. The work done on the Kerckhoff ranch is a fair sample of my pruning a few years ago for Mr. Valentine Peyton at Highlands. It paid him well. After I left the ranch he thought he would give the trees a square cutting back, but I don't think he will do that again. I do not believe in cutting the whole top of an orange tree unless the tree is sick from some cause and a new top is needed.

THE POULTRY YARD.

How an Alameda Squab Grower Houses His Birds.

Mr. C. L. Smith of Fruitvale gives the Petaluma Journal these points: I make no claims that my method of raising pigeons in close quarters is the perfect and only way to raise pigeons, but simply state that it is the best way I have yet found, and I have tried two or three other ways. I am in the business for squabs, big fat squabs, and lots of them. It is results that count with me and I have received better returns from my birds since I moved them into the smaller pens than I ever obtained from them while they were in the larger pens with large flying room.

My present buildings and fly-ways are put up on this plan: There is a building 40 feet long by 6 feet wide. This is divided into 5-foot sections, each section containing fifteen pairs of birds. I will simply describe to you one of these sections. A partition divides the 6 feet in half, this partition making the back wall of two pens. You now have two pens, or houses, 5 feet front by 3 feet deep. The highest part, from floor to comb of roof, is 6½ feet, sloping to 5½ feet at the eaves. The buildings are all raised 1½ to 2 feet from the ground to allow a cat or dog to get under to guard against rats and mice. In front of the house is a fly-way about 5 feet square. I do not allow the birds to have the roof of the house to rest on, as the more room they have to rest, the less they will do nothing else. I have one long perch in the fly-way.

The door is in the front side of the building, but this is kept closed most of the time, the birds going in and out through an opening, 1 foot high, that extends clear across the front just under the eaves. Birds that are sitting on their nests are in this way insured privacy and quiet and are not disturbed by what is going on out in the yard. If two of the females should indulge in a hair-pulling match while their respective husbands are attending to the more serious business of hatching or feeding the squabs, the said husbands do not see or hear the fracas, and of course do not feel called upon to come out to settle the affair, leaving the eggs or small squabs to become chilled.

Small Yards vs. Trap Nests.

A Petaluma grower gives the Journal of last week the following discussion of policies and methods: All those engaged in the poultry business must have some object in view. One party might go into the business having in view the furnishing of fresh eggs for the market. Then he naturally wants the best egg laying strain, and gets some Leghorns. And this would be an improvement if his stock had been mongrel originally. Would this be "better poultry" for the party wishing a good fat hen for Sunday dinner? No; that calls for breeding of another class of poultry. Generally speaking, the best egg producers are the poorest table fowls. For "better poultry" I would say means whatever breed or strain you take up, breed it up to the highest standard of perfection. For "more eggs" breed only from the best layers of a good laying strain and use pens with only a pair in each pen. This is less trouble than the trap nest and gives the qualities of male as well as female. The partitions between the runs or pens should be so made that the males could not see each other at any time. After you have produced the real egg machine comes the matter of care and feeding. As to the matter of feeding, there seems no excuse for the poultryman of to-day failing to get proper rations, as the analyses of the various foods are given in all the leading poultry papers. Besides, there are many prepared foods on the market. Most all the milling companies and feed houses are offering some kind of balanced ration egg food or chick food. Whether this tends to produce better poultry and more eggs, I leave it with you to judge, but all poultrymen can soon learn what constitutes a good balanced ration for egg production and make it themselves. Good poultrymen learn all they can about the poultry business and put it in daily practice.

I consider the management of ten pairs of birds, with only a pair in each pen, will give better results by housing and yarding in this manner than ten hens and one cock that are handled by the trap nesting system. Fowls can lay at will, get off their nests and go at will when penned this way. Otherwise they may remain for hours in the trap nest before being liberated. One can learn the habits of each individual while in single pairs more than if ten were together. Much depends on having the males that have produced the best laying strains, and this yarding in pairs gives the testing of nine birds that the trap nest system would not give. Is it not very important that we know the good or poor qualities of each male as well as each female? A man who is laboring eight or ten hours each day can attend to his birds under this yarding system in pairs, while with trap nests the hens may be obliged to wait a long time till the master returns.

There is considerable excitement about undrawn turkeys arriving from the East in iced cars, and some of the stock is being condemned. A Sacramento doctor, however, makes the point that locally dressed birds put in cold storage are a more dangerous proposition. His claim is that Eastern shippers of frozen fowls, knowing that they are not fit to be eaten if killed and packed when the birds' crops and intestines are full of food, have lately refrained from feeding the poultry a day or so before killing. The result is that there is comparatively little food left in them to decay and poison those who eat the flesh. On the other hand, the local fowls were fed up to the time they were killed, and after being kept for several days they will not be fit to eat. Such is the claim. What truth is there in it?

Agricultural Review.

A DOLLAR RATE FROM HERE TO LONDON.—Examiner: California orange growers and shippers will, in the future, be able to compete with the growers of Florida, Cuba and the Mediterranean in London and on the continent of Europe. At least they will be in a position to land their products abroad almost, if not quite, as cheaply as shippers in the last three named districts. The Eastern connections of the Southern Pacific and the Santa Fe lines, including Atlantic steamship lines, have joined those two roads making a $1 per 100-pound rate on orange shipments from California to London and other points in Europe. To all points in this country outside of California orange shippers are charged $1.25 per 100 pounds. In making a dollar rate to Europe it is said to be the aim of the roads to try and build up a market there for the California variety. It is acknowledged to be an experimental rate, and the outcome of the sale of California shipments in London and ohter European markets during the next six or seven months will be watched with great interest, alike by the railroads and the growers and shippers. The California orange crop for the season just opened will, in the opinion of both growers and railroad traffic officials, yield 38,000 carloads for shipment east of the Rocky mountains. If London and other European centers can be induced to take 5000 or 6000 cars or even half that number this season two distinct results will be attained. It will mean the creation of a foreign demand and market.

BIG PROFIT FROM SHIPMENTS OF FRUIT.—Chronicle, Nov. 30: Lieutenant-Governor Alden Anderson, general manager of the California Distributers, which corporation ships and routes most of the green deciduous fruit sent from California to the Eastern markets, has completed his figures on the green fruit movement for the season now drawing to close. Between April 22, when the first carload moved eastward, up to and including November 20, a total of 8071 cars were shipped out of the State, as against 5626 carloads last year—an increase of 2445. Good prices prevailed during the season, and it is estimated that the growers and shippers netted $800 a car on an average for all fruit that went East. According to these figures, $6,456,800 reached the growers and shippers in profits for their season's labors. The carload shipments of the various varieties of fruit during the season, as compared with last year, were as follows:

	1905.	1904.
Cherries	79	209
Apricots	279	97
Peaches	1,946	559
Plums and prunes	1,391	1,053
Pears	1,013	2,186
Grapes	1,602	1,451
Apples	1 744	43
Quinces, persimmons, figs	17	28
Totals	8,071	5,626

The apple shipments of the season have not been concluded. It is estimated that between 250 and 300 additional carloads of apples will move eastward before the season closes. During 1905 the California Fruit Distributers exploited a number of new markets, and the fruit that moved East reached 135 different cities on the continent. The great bulk of the fruit was sold at auction. The season's business proved a profitable thing for the railroads and the refrigerator car lines. It is estimated that the railroad earnings on the 8071 cars approximated $2,700,000.

Alameda.

A SWEET POTATO WITH KEEPING QUALITIES.—Chronicle, Dec. 4: A sweet potato that will, like the Irish potato, keep for an indefinite length of time under normal conditions, is the discovery of J. A. Macomber of Oakland, who returned yesterday from an extended trip around the world on his schooner Gotama. The box of potatoes, which was carried for eight months on the ship and which remained in a perfect state of preservation for that time, has been turned over to the Department of Agriculture at the University of California, and steps will be taken toward the introduction of this plant into this State. The potato was discovered by Captain Macomber on Pagan island, in the Ladrone group in the South seas. It was taken from the ground on the 10th of last April and was of exceptional flavor and quality. He expected that, like all the other sweet potatoes he had seen, they would spoil in a few weeks, but they did not. They kept until he arrived home on November 2d and are still in good condition. Upon arriving at Berkeley, Captain Macomber took his find, along with some other plants he had gathered on his trip, to Prof. E. J. Wickson, head of the Department of Agriculture at the State University, and Prof. Wickson says that the discovery is as valuable as any that has been made in many years. "It will mean millions of dollars saved if we can get a sweet potato thet will keep as long as the other potato. During sweet potato season and out of it sweets are high because they will not keep. Merchants put them in cold storage and command a high price for them when the crop is all used up. And then millions rot every year in spite of everything that can be done to preserve them. The sweets brought to us by Captain Macomber are large and firm, and although they were not preserved in a special manner are in as good condition to-day as when they were taken from the ground last April. We will raise more of them this season and then distribute them to the sweet potato farmers around Atwater, and eventually to all parts of the State, if the quality is good."

Butte.

FIRST CAR OF PALERMO ORANGES IN CHICAGO.—Chronicle, Nov. 30: Traffic officials of the Southern Pacific have won a wager of $1000 by landing a carload of oranges from the Palermo district in California in Chicago in time to be eaten on Thanksgiving day. The carload was shipped about one week ago and was received in Chicago Tuesday night in good condition. A similar effort made last year failed and the traffic men lost their wager. This year the Palermo oranges ripened a few days earlier, and the Southern Pacific and other Harriman lines quickly put together an entire carload and started them Chicagoward on a passenger train schedule.

GOOD CROP OF CORN.—Chico special to Sacramento Bee, Dec. 3: D. Madigan, formerly a plasterer of this place, but who has recently taken to farming, harvested 175 sacks of corn this season from a 17-acre tract. This netted him $608.75. Madigan attributes his success to the fact that he followed the instructions sent out in the bulletins of the Department of Agriculture. He has now planted his land in alfalfa and expects to harvest a good crop also.

CHICO FARMER HAS SURPLUS OF HAWKS.—Chico dispatch to Sacramento Union, Dec. 1: Finding that the hawks were taking more than he considered their fair share of the dividends of his chicken ranch in Chico Vecino, J. B. Stewart about ten days ago offered a reward of $1 apiece for each hawk killed and brought to him, within a radius of 6 miles from his yard. Since that time hawks have been coming by singles, by doubles, and sackfuls. "I didn't believe there were so many hawks in central California as I have paid for since I put that little ad in the paper," said Mr. Stewart. "However, I don't regret the outlay. A dollar hawk will destroy a dozen dollars in chickens in a single season."

Colusa.

ST. JOHNS TO GET SUGAR FACTORY.—Yuba City dispatch to Sacramento Union, Dec. 1: St. Johns, located near the Sacramento river, in Colusa county, gets the new beet sugar factory to be erected by the Pacific Construction Sugar Co. at a cost of $600,000. The company has just closed a deal whereby it has purchased the Walsh grant of 5000 acres, located in the vicinity of the proposed factory. The town will be connected with the main line of the Southern Pacific Railroad by a spur run out from Germantown, and will be touched by the Northern Electric Railroad, which is to build into Yuba City. Mr. Hamilton of the sugar company has told the people of Colusa that if the people there showed a disposition to grow beets in sufficient quantity his company would erect a similar plant near Colusa. He says Sutter county will grow beets, and that his company is ready to furnish an expert at no cost if the ranchers want to take up this profitable line of farming.

El Dorado.

VEGETABLES ON TARWEED LAND.—Placerville dispatch to Sacramento Union, Nov. 29: H. L. Bryant was in town this week from his home near Sly Park, where he is experimenting with the cultivation of what is known as "tarweed land." His success is shown by some of the products which he has brought with him. Finer vegetables were never grown, even in California soil. The so-called tarweed lands stretch over thousands of acres in this and neighboring counties. The tarweed, or mountain misery as it is sometimes called, and the land that it grows on, have always been deemed utterly worthless. The tarweed is about the meanest weed growing. It is a low-growing, ill-smelling bush, good for nothing. Travelers dread it, for passing through it ruins their clothes; stock cannot eat it; it won't even burn. When Mr. Bryant and a few others attempted the cultivation of this land they were laughed at. But they persevered, and the results have surprised everybody. Orchards planted a few years ago are thriving and just coming into bearing; the finest of apples and peaches were produced this season. The vegetables attain a remarkable growth. Mr. Bryant, for example, brought in a number of purple top table turnips, ranging from 30 to 38 inches in circumference. They were fine and crisp, just right for table use. Half of one of these turnips will make a meal for a family of five. Celery grown by Mr. Bryant this year was as big as a man's wrist. In his rhubarb patch were specimens, the stalks of which were 3 feet long and 1¾ inch in diameter. Mr. Bryant has demonstrated that the tarweed land is worth while.

Fresno.

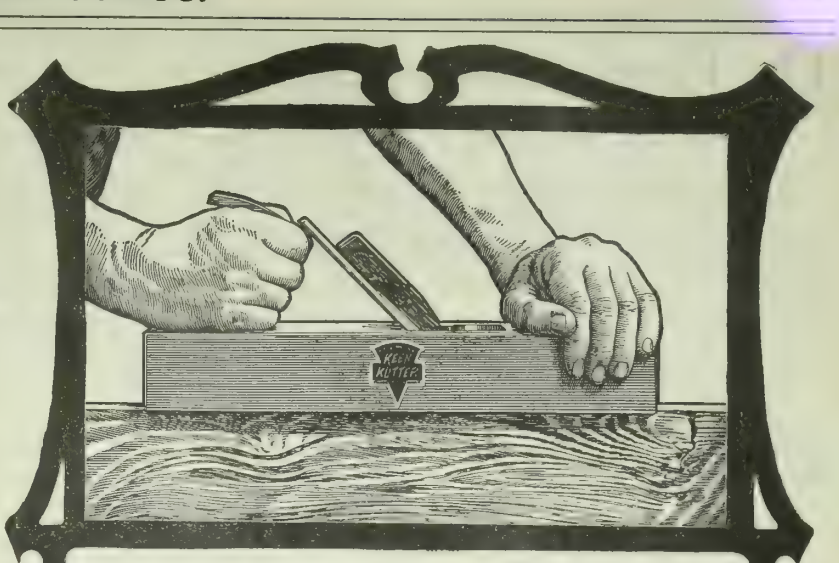
RAISIN GROWERS CALL A MEETING.—Fresno dispatch to Chronicle, Nov. 30: The board of directors of the California Raisin Growers' Co., through A. W. Goodfellow, has issued a call for a meeting of all the stockholders of the company for December 18. The membership of the company includes about half of the total acreage of raisin grapes in the State, and the meeting is to be held to decide the question of making a struggle to abrogate the so-called trust combine with the packers. The combination was first denounced by President Kearney, and while the directors refused to give him a free hand in the management of its affairs, they have called the meeting to head off the meeting that Kearney would probably have called himself. Kearney did not attend to-day's meeting. The packers have expressed their willingness to abrogate the combination with the growers, but will not do so without providing that the growers' company shall first distribute to its members the $12,000 set apart for building a growers' packing house next year.

Sonoma.

HOP GROWERS SIGNING THREE-YEAR AGREEMENT. — Press-Democrat: The result of the meeting of the Sonoma Hop Growers' Exchange was the adoption of by-laws for the government and regulation of the exchange with the exception of the amount of the bond to be given by the members joining to insure their staying in and paying their pro rata of the expenses. This will probably be fixed at $1000 for the small growers, increased in proportion for the larger growers as regards acreage. The by-laws are to be printed and distributed among the growers with a blank for them to sign, agreeing to enter the membership of the exchange when 12,000 or more bales of hops have been secured. Those present have signed up for about 8000 bales and a committee of four of those interested will make a canvass of the growers between now and the next meeting of the exchange, Saturday, December 16th. The by-laws provide for the payment of $1 a bale by all members for the hops which they raise in any one year and all members are to remain by the exchange for three years.

Sutter.

YUBA CITY WINERY. — Yuba City special to Sacramento Bee, Dec. 4: Interest in the proposition of erecting a winery in Yuba City is rapidly developing, and there now seems little doubt that a big plant will be in operation before the beginning of the next grape season. A winery has been talked of for this city for the past two years, but as there was a plant in Marysville which was securing a good share of the grapes from this county, the proposition could not assume shape for the want of sufficient acreage of grapes. Now that the Marysville plant has been destroyed, the talk of building one on this side of the river has revived, and may soon lead to the incorporation of a company for the purpose of erecting and maintaining a plant that will utilize not only grapes, but the great amount of peach and apricot peelings which annually go to waste or are fed to hogs.



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The Home Circle.

When the Cows Come Home.

With klingle, klangle, klingle,
'Way down the dusky dingle,
The cows are coming home;
Now sweet and clear, and faint and low,
The airy tinklings come and go,
Like chimings from some far-off tower,
Or pattering of an April shower
That makes the daisies grow;
Ko-ling, ko-lang,
Ko-ling, ko-lang, kolinglelingle,
'Way down the darkening dingle,
The cows come slowly home;
And old-time friends, and twilight plays,
And starry nights, and sunny days,
Come trooping up the misty ways
When the cows come home.

With jingle, jangle, jingle,
Soft tones that sweetly mingle,
The cows are coming home;
Malvine, and Pearl, and Florimel,
De Kamp, Red Rose and Gretchen Schell,
Queen Bess, and Sylph, and Spangled Sue—
Across the fields I hear her loo-oo,
And clang her silver bell;
Go-ling, go-lang,
Go-ling, go-lang, golinglelingle,
With faint, far sounds that mingle
The cows come slowly home;
And mother-songs of long-gone years,
And baby joys, and childish tears,
And youthful hopes, and youthful fears,
When the cows come home.

With ringle, rangle, ringle,
By twos and threes and single,
The cows are coming home;
Through violet air we see the town,
And the summer sun a-slipping down;
The maple in the hazel glade
Throws down the path a longer shade,
And the hills are growing brown;
To-ring, to-rang,
To-ring, to-rang, toringlelingle,
By threes, and fours and single
The cows come slowly home;
The same sweet sound of wordless psalm,
The same sweet June-day rest and calm,
The same sweet scent of bud and balm,
When the cows come home.

With tinkle, tankle, tinkle,
Through fern and periwinkle,
The cows are coming home;
A-loitering in the checkered stream,
Where the sun-rays glance and gleam,
Clarine, Peachbloom and Phœbe Phyllis,
Stand knee-deep in the creamy lilies
In a drowsy dream;
To-link, to-lank,
To-link, to-lank, tolinklelinkle,
O'er banks with buttercups a-twinkle,
The cows come slowly home;
And up through Memory's deep ravine
Come the brook's old song and its old-time sheen,
And the crescent of the silver queen,
When the cows come home.

With klingle, klangle, klingle,
With loo-oo, and moo-oo, and jingle,
The cows are coming home;
And over there on Merlin Hill
Hear the plaintive cry of the whip-poor-will;
The dewdrops lie on the tangled vines,
And over the poplars Venus shines,
And over the silent mill;
Ko-ling, ko-lang,
Ko-ling, ko-lang, kolinglelingle,
With ting-a-ling and jingle,
The cows are coming home;
Let down the bars; let in the train
Of long-gone songs and flowers, and rain,
For dear old times come back again
When the cows come home.

—Agnes E. Mitchell.

The Cicacia.

Aloysius sent them, two tiny pellets, no larger than grains of wheat, each swathed in seven pounds of cotton and wool packing. The express charges were $84, for which I paid, not Aloysius.

"They are doubtless the seed of some prehistoric tree," he wrote, "perhaps the sacred flower, worshipped by the Arcadians. For why else should old King Apalonius, whose remains we have just exhumed, have had them concealed in a ring which he still wore on his finger?"

As Aloysius directed, I planted one seed in a sheltered spot beside the bench in my patchwork of a garden, where I spent my few hours of leisure daily, and where, as Aloysius intimated, there would be the least danger of my neglecting the precious weed. The other one I stowed away in the tray of a casket, locking it up with my most valuable keepsake, namely, the manuscript of "Patricia."

By midsummer—it was early spring when I received them—the seed had taken root and had grown into a magnificent shrub, not unlike an enormous lilac bush, though the leaves were larger, resembling those of the water lily in shape, and waxen like those of the begonia. And then in a single week a large stalk, capped by a bulb, shot out of the very center of the bush and, after describing a great parabola, rested on the back of the bench with the enormous bulb tilted upward.

For a fortnight the bud continued to swell. Meanwhile I wrote a letter each day urging Aloysius to hasten home if he would witness the blossoming of the remarkable plant.

It was the night Aloysius should have arrived. I remember it quite distinctly. And, dear me, why shouldn't I? As I sat there in the moonlight I was startled by a rustling sound at my side. I turned quickly and, behold! The blossom was opening. The green calyx rolled back and there—! The most exquisite colorings of purple and orange and saffron, as nearly as I could make out in the uncertain light. Still the petals unfurled until—heavens! A girl lay in the very midst of them, asleep! A golden-haired maid, clad in white raiment that drooped about the contours of the body. What eyelashes! What a throat, so full and round and white! One slender hand and wrist rested across her bosom, which rose and fell in restful slumber.

She moved, stretched an arm above her head, yawned, then sat bolt upright and said, "Oh!" But, dear me, I was too startled to offer an apology.

"Where is Hecula?" she asked, looking anxiously about the garden.

"I beg your pardon," said I, "but did you inquire for somebody?"

"Hecula; where is Hecula?" she pleaded.

"If Hecula is your maid, you need have no fear; Annette will attend to any little want—"

"No, no; he is my lover. Where is he?"

"My child," I protested, soothingly, "if you cannot find your sweetheart do not be distressed. There are a thousand, aye, a million gallants such eyes as yours may choose from. Now, there is Aloysius—"

"What have you done?" she cried; the blossom swayed with her violent outburst. "Did you—what did you do with Hecula?"

"Nothing, I assure you."

"No, no; the other seed. King Apalonius promised that we should bloom together."

"I believe I understand you now," said I, humbly. "Hecula still exists in the embryo, safely tucked away with my 'Patricia.' I fear some frightful mistake has been made."

"Oh, you musty old fool—you meddler! Oh, I could—oh, oh, oh!" she buried her face in the soft petals and sobbed bitterly.

"My child," I said, edging closer to the blossom and taking her hand in my own, "my child, forgive me. I didn't know; and, well, that incubus Aloysius is responsible. He told me to plant one seed, not both of them. It was his command." I said some other things, too, which sound quite silly to me now that I recall them. But she was very beautiful and it distressed me sorely to see her weeping.

"But if you only knew how dear Hecula is to me. And Apalonius promised that we should bloom together every hundred years, forever and ever. Tell me," she raised her face and looked into my eyes, her own limpid ones glistening with moisture, "has it been a hundred years?"

"I'm afraid it has. You see, Aloysius, who is always exhuming things and sending them to me with a lot of nonsensical instructions, disinterred Apalonius last spring from the tomb where he had lain for eight thousand years—"

"Eight thousand years! Oh, the pity of it! Eighty times should I have seen Hecula. And now—" The damask lips trembled ominously.

"Never mind," I said, soothingly, "lovers must have their trials with their pleasures and it will all come right in the end. I promise it."

"Nevertheless, I think I shall just lie down again and let the petals fold up once more. It is the only way I can forget. But you must promise to preserve the seed which you will find in the dry pod to-morrow morning."

"I promise. But before you go, do you mind telling me how you come to be locked up with the life of a plant? You see, Aloysius will be in a fine rage if I do not make a full report of this affair."

"Very well, I shall, to please you, not Aloysius. Did you ever hear of Demartus, the great scientist, who wrought so many wonders during the rein of King Virginius?"

"No."

"How odd! Some great misfortune must have befallen my poor country. But anyhow, it was this scientist, Demartus, who discovered a method by which he could ergraft human beings into the life of this plant, which, by the way, is the perpetual cicacia. It blossoms only once every century for one night, then withers into a single seed. Hecula and I were lovers who guarded the king's flocks on the plains of Arcadia. We reasoned that to bloom together one night every hundred years forever and ever would be better than to live and grow old and die in a few short years. You see, one night in a hundred years forever amounts to a good bit more."

"Of course; and you consented to test the experiment. He must have been a remarkable man. Did he do many such things as this—this reincarnation of the two lovers?"

"Oh, yes, many such things. It seems so odd that you never heard of him. I can't imagine what has happened to the world."

"Did he attempt to solve the riddle of perpetual youth?"

"He was working on that; but since you never heard of it—"

"Yes. I presume he died before he brought the work to completion."

"He must have."

"Such a man could do a great deal of good in this world."

"Not always. One of the saddest things I ever heard of was the result of a mistake on his part. A pitiable occurrence."

"Indeed!"

"Yes. You see, there was a noble shepherd called Donald, the Pure, who was known throughout the kingdom for his beauty and his virtue. Such a youth, said the king, should be a maiden; and he offered a great largess to Demartus if the latter should succeed in changing Donald into a damsel. For three whole years he worked on the experiment before he succeeded; that is, if you may call the tragedy which resulted a success. For no sooner was Donald transformed into the maiden Donaldine than she remembered the beautiful Donald and fell desperately in love with him. She pined and sickened and fretted until the king, out of compassion, ordered Demartus to turn Donaldine back into Donald. But, lo! when she became Donald, Donald in turn was in love with Donaldine. It was distressing. The end of the matter was that Donald killed himself and Donaldine was never heard of again."

"Dear me!"

"And now, if there is nothing more you care to ask, I shall fold up the petals and intrust myself to Hecula and to you."

"My dear," I said, "I feel that I owe you some reparation for the annoyance I have caused you. A hundred years is a long while to be shut up in a plant. Isn't there something I can do which will take the edge from the wearisome wait?"

"Oh, no. The time passes just as in sleep. Why, it seems like last night that Hecula and I bloomed together in the banquet hall of King Apalonius. The greatest favor you can do me is to guard well the seed which you will find to-morrow when the bloom is withered into a dry pod. Preserve it, together with the other one, as you would the apple of your eye."

"That I shall do, and as for Aloysius, I shall give him a piece of my mind."

"You must not grieve over this little mistake. I suppose it is good for us to suffer occasionally." As she spoke she leaned forward. "Good-by." I felt the tremulous touch of moist, warm lips on my forehead.

The next moment, with a rustle and snap, the petals folded back over her figure until the flower was only a withering bud.

And then came the clatter of horses' hoofs outside on the pavement, together with the rumble of a cab. A little later there was a wild, exultant shout in the street. It was Aloysius.—James Yeiser.

Blood Circulation.

The secret of health, as every intelligent physician knows, is free and full circulation of the blood, and this circulation is dependent absolutely on thorough oxygenation. In many cases where erroneous habits of living have been so long continued that congestion has become chronic in one shape or another—obesity, gout, rheumatism, constipation or tuberculosis having camped in the system and crippled it—the patient is not apt to be in a condition to readily assimilate a sufficient quantity of oxygen direct from the atmosphere. The breathing apparatus must first be properly developed, so that the patient shall be able to gradually increase the supply of air to the systems until at last he recovers the normal power of deep breathing.

With the building up of the lungs through proper breathing there is a metabolism of all the tissues and organs, so that, for most men, breathing exercises are more important than any mere muscular exercise. Not only the lungs, but all the internal organs, are brought into play by correct breathing. It develops the heart, stomach, liver and kidneys directly and indirectly, and nourishes all these organs as they should be nourished, by more blood and better blood in constant and regular circulation. Breathing, therefore, is a sovereign remedy for our national disease of nervous depletion. It might well replace the countless tonics, stimulants and anodynes now so commonly resorted to, where results are nothing less than tragic in thousands of cases. —Morris Manning, M. D.

Domestic Hints.

Sweet Apple Pie.—Stew and sift sweet apples as you would pumpkin for pies. To one pint of sifted apple, use one quart of new milk, two eggs, well beaten. One teaspoonful of ground cinnamon, one cup of sugar, two teaspoonfuls of cornstarch dissolved in a little of the cold milk, one-half teaspoonful of salt. Mix all together and bake as you would pumpkin pies. This makes two pies.

Extracts.—Get three fresh vanilla beans of a druggist, break in small pieces, and put them into a half pint of alcohol. It will be fit for use in a few days. To make the lemon extract grate the rind of three lemons into a half pint of alcohol. In four days pour off into a bottle and add one ounce oil of lemon. This will make a strong flavor at less than half price. Orange extract may be prepared in the same manner as above.

Fried Liver, Bacon and Onions.—Cut the liver in thin slices, pour over it boiling water, let stand a moment, pour off the water, drain on a napkin, salt lightly, put thin slices of bacon in the frying pan; when browned nicely remove to a hot platter, put the liver in this drippings to fry with enough chopped onions to cover it, cover the pan and let it cook for half an hour; when thoroughly done remove to a shallow dish; scatter bits of butter over it and a dust of pepper; place slices of bacon on top and put in the oven until ready to serve.

Mince Meat.—Four pounds lean meat, two pounds suet, three pounds apples, four pounds sugar, two pounds raisins, two pounds currants, one pint molasses, five pints cider, four nutmegs, one-half cup salt, two tablespoonfuls cassia, two tablespoonfuls cloves, two tablespoonfuls lemon, one tablespoonful allspice. Mix in the order given. Use enough of the meat liquor to make quite moist. Cook until the apples and raisins are quite soft. If the pies are to be eaten cold omit the suet.

Hints to Housekeepers.

Lemons and cranberries kept in water will retain their freshness for a long time.

A slate with pencil attached by a string should hang in every kitchen, to aid the memory of a housewife.

The candles for your entertainment will burn slowly and steadily through the evening if they are kept on ice all day.

An ordinary headache may generally be cured by applying water as hot as it can be borne to the feet and back of the neck.

To keep salt dry add cornstarch to salt in the proportion of one teaspoonful to one cup and the salt will never gather dampness.

If the brass top gets loose on a lamp, melt alum and fill in the top and adjust it to the lamp at once. It is much more durable than plaster of paris.

Pickle bottles and jars that smell of onions will be quite sweet and odorless after being left out of doors for three or four days filled with sand or garden mould.

To prevent rust heat the articles well and rub in thoroughly common beeswax. Then rub well with a cloth until the wax is well rubbed in. Knives, tin or iron kettles or any article which will rust have been kept for years in this manner.

Frequent washing with soap will dim the surface of a mirror. The occasional use of alcohol is recommended, but for frequent washing, damp newspaper with a polishing with chamois skin will keep mirrors and table glassware in good condition.

Wall paper that has become bruised or torn off in small patches and cannot be matched may be repaired with ordinary children's paints. Mix the colors till you get as nearly as possible the desired shade, and lightly touch up the broken places, and at a distance of a foot or two the disfigurement will be quite unnoticed.

Fly marks and general griminess may be removed from gilding by dipping a small piece of cotton in gin, and with it rubbing gently over the soiled parts. The cotton wool should be squeezed before being applied to the gilding, for this must not be made really wet, and any damp on it should be dried by the fire as soon as the marks have been removed.

Almost every housekeeper has an accumulation of rolls of wall paper left from papering. If these rolls have a white, or nearly white, back, they make very nice papers for shelves as the smooth surface and the firm texture can be brushed or even wiped with a slightly damp cloth, and they will not need a renewing so often as newspaper, and will look better.

Black kid gloves generally wear out at the finger tips, and then assume a rusty brown tint, which is anything but pleasing, although the other part of the glove may be perfectly good. When this happens take a little black ink, mix it with a small quantity of olive oil, and apply it to the finger tips. Leave it until dry, and the gloves will be very much improved in appearance.

Sandpapering furniture is a tedious job, and the woman who wishes to revarnish or paint a chair or table will find her hands and patience saved if she will use one-third of a cupful of common washing soda to a pint of warm water, with a good scrubbing brush to remove the old finish. Rinse off with clear water and do not attempt to put on the new coat until the piece is thoroughly dry.—The Pilgrim.

To make waterproof glue, soak it in water until softened through, but preserve the shape. Heat slowly in linseed oil until dissolved, then mix thoroughly. To make fireproof glue, pour water over good glue and let it remain over night, then slowly melt and add white lead to make the right consistency. This will withstand fire but not boiling water. To fasten labels to tin, take good yellow glue, break it into small pieces, cover with water and leave three or four hours. Pour off the water, place the glue in a wide-mouthed bottle or pint can, and cover with acetic acid. Set in warm water until dissolved, and incorporate the two by stirring.

To mend iron kettles, heat two parts of sulphur until melted. Add one part black lead and stir briskly; pour out, and when cold break into bits. Apply to the cracks and melt with a soldering iron. Those that are discarded by the tinner will do very well for household use and cost little or nothing. Litharge mixed with glycerine to the consistency of putty will close cracks in kettles. Do not use after applying for 24 hours. —The Country Gentleman.

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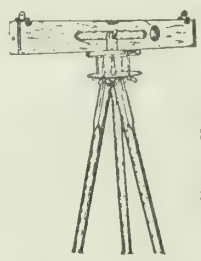
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The Markets.

San Francisco Produce Report.

San Francisco, Dec. 6, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the eek named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 85⅛@ 84¼	88⅜@ 87¾
Thursday	—— @ ——	—— @ ——
Friday	85½@ 85	88⅛@ 88
Saturday	85⅛@ 84⅝	88⅛@ 87⅝
Monday	85 @ 84¼	88⅛@ 87⅛
Tuesday	86½@ 85	89 @ 88⅛

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	44¾@44	45 @44
Thursday	—— @ ——	—— @ ——
Friday	44⅞@44¼	44⅞@44¼
Saturday	45 @44⅝	44⅞@44⅜
Monday	45 @44⅝	45¼@44⅝
Tuesday	45¼@45	45¼@44⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 36½@1 35½	$1 42 @1 41½
Thursday	—— @ ——	—— @ ——
Friday	1 34 @1 34	1 42¼ @1 41½
Saturday	1 34 @1 34	1 41 @1 41
Monday	1 34 @1 33½	1 41½@1 41
Tuesday	1 41¾@1 41¾	1 21 @1 21

Wheat.

Heavy arrivals from the north have fully supplied the wants of the local trade, and though there has been plenty of Northern Club offering at $1.42½, there have been but few takers. The quotation on California No. 1 shipping wheat is the nominal price at which that grain is held, although there is practically none to be had at that figure. There is of course not sufficient for export purposes, even if the prices should warrant it. Prices of futures are largely a reflection of those ruling in the Chicago market, and little or no trading is being done. December option has been abandoned by the trade, and practically all of the trading which is now being done in futures is in May option, the price of which has held very close to $1.42½ during the entire week. Recent Chicago advices say: "In the domestic field all conditions appear to be normal. There is no plethora of supplies, no burdensome accumulation, and no difficulty in filling all wants at a reasonable price. Buying plainly indicates that there has been no over-speculation in wheat or flour by the millers or distributors. Nevertheless, large accumulations of wheat are expected with the closing in of winter. These are expected to become burdensome ultimately and to influence values.

California Milling	$1 40	@1 42½
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 42½@1 43¾
Northern Bluestem	1 45	@1 47½
Northern Red	1 35	@1 37½

PRICES OF FUTURES.

Tuesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.42½@1.41¾ and December wheat from $1.40@1.40.

Flour.

Locally there is little change to report in the flour situation. The mills are all busy grinding on Northern wheat, which has arrived in quantities entirely large enough to supply the demand. There has not been the difficulty experienced in securing Northern cargoes the past week that there was a few weeks previous, and the consequence is that the market is somewhat oversupplied. The usual local demand and a fair demand for shipment to Central America have maintained prices at their former level. In the North the export demand for flour is very large. November shipments of wheat and flour from Portland, Or., were considerably in excess of $1,000,000.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

The barley market, under the influence of very light receipts and light offerings, has climbed back to the extremely strong position which it has been occupying until the past two weeks. The cash grain is in very light supply and the prices for choice feed are considered very conservative. In fact, a good, bright lot would probably bring an advance, though such lots are extremely scarce. The off grades are moving rather slowly at appearing quotations. The only thing resembling activity in the local market for grain futures has been in the barley option market. May option sold as high as $1.24½ during the week, but under the influence of a rather large speculative movement it backed down again to $1.22½.

Brewing	$1 22½@1 25
Feed, No. 1 good to choice spot	1 20 @1 23¾
Feed, fair to good	1 16 @1 17½
Chevalier, No. 1 to choice	1 30 @1 35
Chevalier, common to fair	1 15 @1 25

Oats.

The local market is rather quiet and quotations remain unchanged. As was expected, the demand for seed oats has improved quite materially since the rains, and good choice red and black seed oats are bringing an advance on the appearing quotations. In the north the market is steady and prices firm. The demand for good oats shows no abatement, and whenever any good lots are offered buyers readily snap the same up if the price is right. Some good, choice oats have been shipped to San Francisco, but the price is too high to warrant very much coming in this direction. Stocks in the country are becoming smaller on account of fair prices being offered, and farmers have been liberal sellers. White and grays are selling readily at $26.50 to $27 per ton.

White oats	$1 47½@1 55
Black oats	—— @1 75
Red, choice new	1 35 @1 60
Red, fair	1 20 @1 30

Corn

There is nothing particularly interesting in the local corn situation. There is no life to the trading and stocks have a tendency to accumulate. Old corn for milling purposes has been in fair demand, but at prices somewhat lower than last week, owing to the fact that the new crop will begin to arrive soon and can be landed here at considerably less than the price that has been asked for old corn. Large yellow corn is now selling at $1.32½ to $1.37½, while the small round variety is moving rather slowly at appearing quotations, which will probably be shaded somewhat next week.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 32½	@1 37½
Small Yellow	1 50	@1 55
Egyptian White	1 37½	@1 40
Egyptian Brown	1 25	@1 27½

Rye.

Despite the fact that stocks in the hands of local millers are said to be entirely adequate to supply immediate demands, and despite the fact that reported arrivals of Utah rye have been free, prices refuse to decline. Millers are practically the only buyers there, and they have been holding off with the expectation of lower prices. These, however, have persistently failed to materialize.

Good to choice	$1 45	@1 52½

Buckwheat.

Some new buckwheat has come into the market lately, and has been sold at about appearing quotations. The rains have created a fair demand for seed, and this will bring an advance over appearing quotations.

Good to choice	1 50	@1 75

Beans.

This year's crop of pinks has been enormous, but owing to the fact that a large amount of the crop is being warehoused, and that a comparatively small portion of it is coming to this market, prices are unusually high for so early in the season. Dealers here say that the warehoused beans will be let loose before tax day in March, and that prices are then sure to decline. Limas appear to have reached the top notch for the present, the price being $4.25 per cental in a jobbing way, though they are not meeting with much favor at this figure, owing to the fact that the crop is an unusually large one this year. Bayos and Blackeyes are firmly held, and owing to rather short stocks the price is expected to be well maintained.

Small White, good to choice	$3 00	@3 25
Large White	2 00	@2 60
Pinks	1 75	@2 10
Pinks, damaged	1 00	@1 25
Bayos, good to choice	3 50	@3 65
Red Kidneys	3 00	@3 50
Reds	3 00	@3 10
Limas, good to choice	4 00	@4 25
Black-eye Beans	4 60	@4 75

Dried Peas.

Arrivals from Mendocino have been free and are readily taken up at appearing quotations. The Eastern situation is fairly strong and has something of a reflection in the situation here. It is reported by jobbing interests that Eastern peas can be landed here at $2.40, which precludes the possibility of any further rise in the price of California stock in the near future. Very few Salinas peas have been landed here, as most of them are in good demand for fertilizing purposes in the south.

Green Peas, California	$2 25	@2 40
Niles	1 75	@2 00

Hops.

The slight improvement which appeared in the hop market continued through this week, and, though there was no life to the market and practically no buying of a speculative character, the slight advance of last week has been maintained. Statistically, however, the situation is far from being encouraging from the growers' point of view, and scarcely from the jobbers' either, as they will scarcely be able to handle the crop at a profit, unless they can succeed in convincing the growers that an enormous overproduction has taken place. Brewers are thoroughly familiar with the situation and are not buying except for immediate requirements.

Good to choice 1905 crop	7½@ 11

Wool.

The local market is an exact reflection of the Boston market, where very little trading is being done on account of the fact that the high prices at which growers are holding make the market an uninteresting one to the jobbers. Some San Francisco dealers, who were too eager to contract for the fall clip early in the season, have been obliged to send their holdings forward on consignment to await a better market. The situation is hard to define from the growers' point; but as for the jobbers, all they have to say in regard to the local market is that it contains nothing of interest to them. Usually at this season of the year they have their buyers stationed throughout the wool-growing districts; but this year, owing to the high prices being asked by growers, all buyers have been withdrawn.

FALL.

Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

The receipts of hay during the past week again show a falling off. The majority of all rail shipments comes by stock cars, and bay schooners are still being utilized to a large extent. There is an increasing country demand from a number of points which were reported to be well supplied for the winter. The present cold weather is unfavorable to the growth of green feed, and grass is still very short. The San Francisco market is exceedingly dull. There is a scarcity of the cheaper grades of hay, owing to the fact that much of these grades has been sold in the country for stock feed. So far there is no export, although a little enquiry has developed.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	6 00	@ 9 50
Stock hay	5 50	@ 7 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The late rains followed by good growing weather have already had a quite noticeable effect on the millstuff's market, though it will be some time before green feed will be in any supply. Rolled barley has advanced in price, the advance corresponding with a similar one in the price of barley. Middlings are in rather light supply and firmer. Bran and shorts are weaker in price and other varieties also have an easier feeling. Cocoanut cake or meal is now quoted at $22 to $23 per ton, and oilcake meal is also in the market and is selling at $37 to $37.50 per ton.

Alfalfa Meal, ₱ ton	$22 00	@ 23 00
Bran, ₱ ton	21 00	@ 22 00
Middlings	27 50	@ 29 00
Shorts, Oregon	21 00	@ 22 00
Barley, Rolled, choice	26 00	@ 27 00
Cornmeal	29 50	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	37 00	@ 37 50
Cocoanut cake or meal	22 00	@ 23 00

Seeds.

A better market for all kinds of seed was created by the rains of last week, and alfalfa seed is in good request, at the top quotation for choice seed. Flaxseed is still nominal. Mustard seed, both yellow and brown, is firmer and higher in price. On other varieties the market remains steady.

Alfalfa	$13 00	@14 00
Flax	——	@ ——
Mustard, Yellow	3 50	@ 3 75
Mustard, Trieste	4 50	@ 4 75
		Per lb.
Canary		6¼@ 7
Rape		2½@ 3
Hemp		3¾@ 4
Timothy		5½@ 6

Honey.

Honey is being offered more freely at appearing quotations than for some weeks past, and it now appears that growers are awakening to the fact that they can not force prices any higher by holding their honey. At these figures there should be a good profit to the bee men and a small margin to jobbers. Hawaiian extracted amber is selling at 2½ cents, at primary points, but it is not likely that California apiarists have anything to fear from their competition, as their crop is all marketed in England.

Extracted, Water White	4¾@ 5
Extracted, White	4½@ 4¾
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax

Plenty of choice wax is now offering in the local market and is readily bringing the top quotations. Some extra fine lots have brought advances.

Good to choice, light ₱ lb	26	@27
Dark	24	@25

Live Stock and Meats.

The market remains steady, with a slight tendency toward firmness on the part of beef and large veal. The hog market is in excellent shape and very steady. Mutton and lamb are in good request at appearing quotations.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5¼
Beef, 2nd quality	4	@ 4¾
Beef, 3rd quality	3	@ 4
Mutton—ewes, 8@9c; wethers	9½@10	
Hogs, hard grain, 150 to 250 lbs	5¾@ 5¾	
Hogs, large, hard, over 250 pounds	5¾@—	
Hogs, small, fat, under 150 lbs	5¾@—	
Veal, large, ₱ lb	6 @ 7½	
Veal, small, ₱ lb	7 @ 8½	
Lamb, spring, ₱ lb	9 @10	

Hides, Skins and Tallow.

The local hide market is still in an unsettled condition, and, though dealers still claim that there has been no reduction in prices, the low quotations in Chicago have a very depressing effect. So far there is no accumulation in any grade here.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	13 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4¼	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

Stocks of all kinds are about cleaned up and there is little demand except of a desultory nature to supply an unexpected shortage. Local bag men report that this has been one of the best seasons the industry in this city has ever had. The Calcutta market on futures is very strong, June bags being quoted at 7c to 7½c.

Bean Bags	$ 6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7⅛@7¾
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7¼@7¾
Wool Sacks, 4-lb	— @ 36
Wool Sacks, 3¼ lb	— @ 34

Poultry.

The market continues very favorable for fancy and large California poultry of every kind, and top quotations are frequently exceeded for large and extra heavy fowls. Four cars of Eastern have arrived, but are not in fine condition. There has been no reaction in the turkey market since Thanksgiving trade, and inquiry has been rather limited. It is believed that an advance may be anticipated in about ten days.

Turkeys, choice Young, ₱ lb	$ 18	@ 20
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	5 50	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 50	@ 6 50
Fryers	5 00	@ 5 50
Broilers, large	3 50	@ 4 00
Broilers, small to medium	2 00	@ 2 50
Ducks, old, ₱ dozen	5 00	@ 5 50
Ducks, young, ₱ dozen	5 00	@ 7 00
Geese, ₱ pair	2 00	@ 2 25
Goslings, ₱ pair	2 25	@ 2 50
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	2 00	@ 2 25

Butter.

The butter market remains unchanged since the last report with the exception of a slightly firmer feeling in the choice grades. The intermediate and off grades are moving slowly at appearing quotations. The quality of the arrivals has improved greatly since the cooler weather began.

Creamery, extras, ₱ lb	26	@28
Creamery, firsts	—	@25
Creamery, seconds	21	@23
Dairy, select	20	@25

Dairy, firsts	22	@	—
Dairy, seconds	20	@	—
California storage	23½	@	24½
Mixed Store	—	@	20

Cheese.

The cheese market remains steady with a slight tendency towards firmness, owing to a very good export demand for the Orient. Prices have been well maintained, and top quotations of 14½c for fancy flat California cheese may be exceeded during the coming week.

California, fancy flat, new	13	@	14½
California, good to choice	—	@	13
California, fair to good	11	@	12½
California, "Young Americas"	13	@	14
Eastern, new	16	@	17

Eggs.

Since the last report the egg market has sagged badly, but at this writing it has again strengthened somewhat, and it may now be said to be an advancing market. It is probable that selected ranch eggs will advance somewhat during the coming week. The main cause for the declining price is attributed by buyers at this point to the fact that people are learning that, by using a good storage egg, they are able to bring down the price of fancy ranch eggs.

California, select, large, white and fresh.	43	@	45
California, select, irregular color & size.	—	@	42
California, good to choice store	26	@	28
Eastern firsts	23	@	26
Eastern seconds	20	@	21

Potatoes.

There has been little variation in the local potato market during the past week. Fancy Salinas Burbanks are in good request, and firm in price, while all cheap stock is moving slowly and is having a tendency to accumulate. The large shipping demand for the south and southwest did not continue long enough to clean up much of the exceedingly large crop, which was produced in California and Oregon this year. Sweet potatoes are somewhat easier, owing to large receipts.

River Burbanks, ₱ cental	60	@	80
Salinas Burbanks	1 00	@	1 35
Oregon Burbanks	75	@	1 15
Tomales	80	@	90
Sweet Potatoes	1 60	@	1 75

Vegetables.

The onion market is somewhat easier this week, and only strictly choice stock will bring quotations. Other stock is dragging somewhat at a reduced figure. The general tone of the market for other vegetables is steady and prices remain about as last quoted. Choice garden cabbage is firmer, and very scarce Green peas are also very scarce and show an advance in price. Cucumbers are quoted at $1 to $1.50 per box, carrots 65c to 75c per sack, and Hubbard squash $20 per ton.

Beans, String, ₱ lb	9	@	11
Cabbage, choice garden, ₱ 100 lbs	60	@	1 00
Egg Plant, ₱ lb	5	@	7
Garlic, ₱ lb	5	@	6
Onions, New Yellow Danvers, ₱ ctl.	1 10	@	1 25
Onions, Australian Brown, ₱ ctl	1 15	@	1 30
Peas, Green, ₱ lb	8	@	9
Peppers, Bell, ₱ lb	5	@	6
Peppers, Green, ₱ lb	4	@	5
Tomatoes, ₱ box or crate	40	@	1 25
Artichokes, ₱ doz	90	@	1 00
Cucumbers, ₱ box	1 00	@	1 50
Carrots, ₱ sack	65	@	75
Hubbard Squash, ₱ ton	—	@	20 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The demand for fresh deciduous fruits in the local market has been good for such as are still appearing. Arrivals have been very light, however, of late, and in many varieties have now terminated altogether. Apples continue in good demand and the supplies now coming into the market are showing up somewhat better as to quality, there being much less wormy stock than formerly. There are no fresh figs left and grapes are in very light supply, the only varieties now appearing being Verdel, Tokay and Muscat. These are of poor quality and show clearly that they belong to the extreme last end of the crop. They are being held at $1@1.25 per crate by jobbers on the street. Huckleberries, raspberries, whortleberries and plums of all varieties are now out of the market entirely. Strawberries of the large variety are still appearing and are meeting with ready sales at $5@6 per chest. Persimmons are firm from 75c@$1.25.

Apples, choice to select, ₱ 50-lb bx	85	@	1 25
Apples, good to choice, ₱ 50-lb. box	50	@	75
Apples, fair to good, ₱ 40-lb box	25	@	50
Figs, ₱ two layer	85	@	1 00
Grapes, Verdell, crate	1 00	@	1 25
Grapes, Tokay, ₱ crate	1 00	@	1 25
Grapes, Muscat, ₱ crate	1 00	@	1 25
Huckleberries, ₱ lb	—	@	—
Strawberries, large var., ₱ chest.	5 00	@	6 00
Whortleberries, ₱ lb	—	@	
Persimmons, ₱ box	75	@	1 2
Pomegranates, ₱ box	—	@	—

Dried Fruits.

Statistically, the dried fruit situation is a very strong one, but the market on most varieties is for the moment somewhat sluggish. The prune market continues to gather strength, the consuming demand which has developed rapidly within the past few days having stimulated the upward movement in values for which holders on the coast have been looking, in view of the unusual statistical situation. On the spot in New York the available supply, outside of that owned by jobbers, who are now getting the bulk of the receipts, has been reduced to very small dimensions by the recently greatly enlarged demands of consumption in the East. The apple market continues to advance as it becomes more and more apparent that the shortage of the crop throughout the country has not been overestimated.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	—	@	8
Apples, extra choice to fancy, 50-lb boxes.	8½	@	9½
Apricots, Royal, good to choice, ₱ lb	7½	@	8¼
Apricots, Royal, fancy	8½	@	9
Figs, 10-lb box, 1-lb cartons	55	@	62½
Nectarines, White and Stanwick, ₱ lb	8	@	8½
Nectarines, red, ₱ lb	—	@	8
Peaches, unpeeled, good to choice	7¾	@	8¼
Peaches, unpeeled, fancy to extra fancy	8½	@	9
Pears, standard, ₱ lb	—	@	8½
Pears, choice to fancy	10	@	12
Plums, Black, pitted	5½	@	6½
Plums, Red, pitted	7	@	8
Plums, Yellow, pitted	6	@	8
Prunes, Silver, good to fancy	5	@	8

Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4¼c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c 80-90s, 2¾@3c, 90-100s, 2½@2¾c; small, 2¼@2½c.

COMMON SUN-DRIED.

Apples, sliced	5	@	5¼
Apples, quartered	4¼	@	5¼
Figs, White, in bulk	2½	@	3
Figs, Black	2½	@	3

Raisins.

A feeling of weakness and uncertainty has been developed in the California seeded raisin market within the past few days by offerings of resales of fancy coast seeded stock at ¾c a pound or more below the Association's prices. While the quantity of such offerings is not large, coming on a dull market it has a very depressing influence. Whether it will precipitate a general reduction in prices is a question upon which opinions differ. Some in the trade are confident that the growers' company will be forced to succumb to the pressure brought to bear by the commercial packers, who, tied up by their contracts with the growers' company, have had to remain idle while the outsiders were getting the business, but are now anxious, while there is yet a possibility of catching some of the later holiday trade, to have prices made that will prove attractive to buyers. For the present, however, prices remain unchanged so far as the Association is concerned.

CROP OF 1904.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40	@	—
London Layers, 3-crown, 20-lb box	1 50	@	—
Fancy Clusters, 4-crown, 20-lb box	2 00	@	—
Dehesas, 20-lb box	2 50	@	—
Imperials, 20-lb box	3 00	@	—
2-Crown Standard loose Muscatel	5¾	@	—c
3-Crown Standard	6	@	—c
4-Crown Standard	6½	@	—c
Seedless Thompsons, 50-lb boxes	6½	@	—c
Seedless Sultanas	5	@	—c
Fancy, 16-oz. Seeded	8¼	@	—c
Choice, 16-oz. Seeded			8 c
Fancy, 12-oz. Seeded			6½c

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JACOBSON, REIMERS & CO., Commission Merchants, 210-212 Davis St, San Francisco.

—50,000— **Turkeys Wanted** From now on, until after the holidays, we shall require large quantities of dressed and live turkeys and live chickens to supply our trade with. Write us immediately how many turkeys you have on hand. Ship us your poultry. Highest market prices. Immediate cash returns guaranteed Choice large young turkeys selling today as high as 25c per lb. Mark and consign all shipments of produce to the POULTRYMEN'S UNION, 215-217 Clay St., S. F. Incorporated, $25,000 Cash Capital.

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We have been handling Turkeys in this market for the past thirty years, and with such a long experience can give you the best results. Full weight, full prices and prompt returns is our motto. Write us for information.

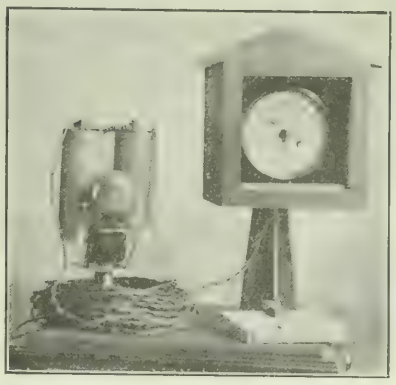
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Have you any on hand and unsold? If so, tell us how much and kind, and we will give you valuable information that will help you in selling.

CENTURY MERCANTILE CO.
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BOLTON'S ELECTRIC Frost Alarm Thermometer



AN ORCHARD THERMOMETER that rings the bell in bedroom when temperature reaches danger point.

Write for Illustrated Matter, Prices, etc.

THE FROST PREVENTION COMPANY
FRESNO, CAL.

Choice, 12-oz. Seeded	6¾c		
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ₱ lb	11	@	12
Almonds, Ne Plus Ultra, ₱ lb	11	@	12
Almonds, Nonpareil, ₱ lb	11	@	13
Almonds, Languedoc, ₱ lb	7½	@	—
Almonds, Golden State, ₱ lb	7	@	—
Hard Shell, ₱ lb	5	@	—

Citrus Fruits.

Arrivals of all kinds of citrus fruits have been free and oranges and lemons are showing up much better as to ripeness and size. The new grape fruit is still rather green, but there is considerable old stock left in the market, and this is being held at $3.25 per box. The general agent of the New York Central lines in this city has been notified by the freight traffic manager that the road will join the California roads on export orange shipments destined for London and other markets, effective November 30, at $1 per hundredweight, from California to New York. This is in order to help out the growers and to meet competition of Florida and other orange producing points.

Oranges, fancy	1 75	@	2 50
Oranges, choice	1 25	@	1 75
Oranges, standard	90	@	1 25
Oranges, Seedlings	90	@	1 15
Lemons, California, fancy, ₱ box	3 00	@	3 50
Lemons, California, good to choice	1 75	@	2 50
Lemons, California, fair to good	1 00	@	1 50
Grape Fruit, ₱ box, new	1 75	@	2 50
Limes, ₱ box	3 00	@	4 00

Nuts.

Walnuts are now being forwarded as rapidly as possible, and while there is a possibility of the present needs of the holiday trade being supplied, there remains a certainty that for the year's consumption as a whole the crop will be entirely inadequate. The largest purchase made by any local concern last week was the purchase of thirty-four tons of walnuts in one lot by the J. K. Armsby Co. at an average price of 10c to 11c per pound. The almond market remains rather featureless and prices are unchanged.

Peanuts, fair to prime	4½	@	5½
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½

SEEDLESS APPLE.—Pomona Progress, Nov. 30: F. K. Adams is exhibiting a curiosity in the way of a seedless apple, which was grown on the property of C. P. Frissell of Los Angeles. The apple is said to be a Rhode Island greening and its exterior differs little from the well-known shape of that apple. In cutting, however, there is no core or seeds whatever, but in their place there are the radiant lines of a five-pointed star, the openings of each point being scarcely wide enough to insert a knife point. This is the second year that the tree has borne fruit and both seasons the apples have been of this nature. So far as known, no effort has been made to produce this kind of fruit on this particular tree.

PEANUTS.—Modesto News: Among the many industries that are destined to make Stanislaus county famous for the variety and quality of its products is that of peanut growing. This is the first year that the toothsome nut has been planted to any extent in this county, and the result was satisfactory in every particular. The soil in the vicinity of Turlock, between Modesto and Salida and north of Oakdale, is especially adapted for peanuts, and there is no reason that the farmers in these sections should not make it one of their best paying crops.

CONTROLLING NATURE.

Everybody knows that of late years natural forces have been wonderfully subjected to man's need. We are dazzled by the spectacular achievements in steam and electricity, but are likely to forget the less noisy but no less marvelous conquest of animal and plant life. Horses are swifter, cattle heavier, cows give more milk and sheep have finer fleeces than in days gone by. In plants the transformation is even more marked. People now living can remember when the number of edible fruits and vegetables was far less than at present and even those that could be grown were vastly inferior to what we now have. For example, our parents knew nothing of the Tomato except as a curious ornament in the garden. Sweet Corn was hardly better than the commonest field sorts. All oranges had seeds. Celery was little known and poor in quality. In the flower bed the magnificent Pansy has replaced the insignificant Hear 's Ease from which it was developed, and the Sweet Pea in all its dainty splendor traces its origin to the common garden vegetable.

This progress has been made in spite of the great tendency manifested in all plants and animals to go back to the original type. It is indeed a battle to keep strains pure and up to the standard they have already attained, let alone any improvement. The practical results are accomplished by men operating largely for love of the work, like Luther Burbank in California and Eckford in England, as well as by the great seed merchants, D. M. Ferry & Co., of Detroit, Mich., who are not only eternally vigilant to hold what ground has been gained, but have a corps of trained specialists backed by ample means to conduct new experiments. The results of their experience can be found in their 1906 Seed Annual which they will send free to all applicants.

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T. W. JACKSON, 123 California St., San Francisco.

THE DAIRY.

Methods of Feeding Skim Milk Calves.

(CONCLUDED FROM LAST ISSUE.)

ANOTHER PLAN.—The management in the early stages of weaning the calf and substituting skim milk for whole milk at the Idaho Station was practically the same as at the Kansas Station. As soon as the substitution of skim milk for whole milk begins, the teaching of the calf to eat whole oats was undertaken. This was done by placing not more than a tablespoonful in a box in front of the calf after it had drunk the milk. In nosing about the calf got some of the oats in its mouth, and in a very short time learned to like them.

Whole oats are preferred to rolled or ground oats, for the husk of the oat is then so thoroughly attached to the grain that it will be masticated with the kernel, and the calf having sharp teeth will have no difficulty in grinding it. The ration of oats will be gradually increased as more of the whole milk is withheld and separator milk substituted, until at the end of three or four weeks the calf will be getting half a pint twice a day. The amount depends on the calf, for some animals will eat more readily than others. * * * * After the calves have finished the ration of oats, which requires an hour or so, they are released (from stanchions) and allowed to pass into a box stall. This stall is provided with feed racks about the walls which are filled with the choicest hay the farm affords. The calves, even those only five or six days soon learn to pick this tempting bit of hay instead of sucking each other's ears, as they are apt to no when fed in the ordinary way.

Quite a difference was found by the station in quality of oats for the calves. Oats with a thin hull have been found the best. Large, coarse, thick-hulled oats were not so easily eaten, and appeared to injure the calf's mouth. The average gain for the first 150 days for calves thus raised at the Idaho Station was at the rate of 1.59 pound per head per day.

Calves brought up on skim milk are most attractive from six to twelve months of age.

"They develop a stomach out of proportion to the rest of the body, and their coat is not quite so smooth as it is when calves run with their dams. However, the calves have learned how to eat and digest coarse feed in larger quantities than calves reared on whole milk. The digestive organs are better developed for practical feeding from this period on to maturity than in calves fed on whole milk."

HOW TO DO IT.—The following suggestions stand out prominently in the recommendatious by the stations: Make the change from whole milk to skim milk slowly. Substitute about one half pint of skim milk for whole milk at each feeding until the calves are wholly on skim milk. Do not feed too much milk. The milk should be fed warm and sweet. The right temperature is between 85° and 100° F., and this should be determined by a thermometer rather than by hand. The grain should not be mixed with the milk, but be fed dry after the milk has been drunk.

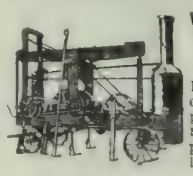
"Undoubtedly the greatest difficulty that the calf feeder has to contend with is scours. Here, as elsewhere. "an ounce of prevention is worth a pound of cure."

The principal causes of this difficulty are overfeeding, sour milk, feeding cold milk, feeding grain with milk, using dirty milk pails, very cold water, too much water after periods of thirst, and irregularities in feeding. The careful feeder will watch very carefully the effect of his feed upon his calves, and as soon as there are any signs of scours the milk should be reduced one-half or more and gradually increased again as the calf is able to stand it.

The Kansas Station has been very successful in using dried blood as a tonic for weak and scouring calves. A mild case of scours can usually be cured in from one to two days by reducing the milk and adding a teaspoonful of dried blood while the calf is drinking.

* * * * * * *

"In severe cases of scours, the addition of one or two eggs with the dried blood has been found very effective. Another remedy that has been found to be successful is to give from one to two ounces of castor oil in the morning and follow in about twelve hours with fifteen to twenty drops of laudanum and a teaspoonful of dried blood. If the case is a persistent one, one or two raw eggs may be added.



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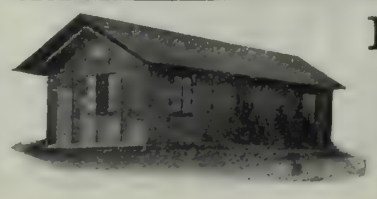
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THE KENNEL.

How to Raise a Puppy.

Mr. E. M. Tidd, foreman of the stock department at the State University, is a dog fancier of good standing. In the Live Stock Journal he writes to help those who are intending to raise a pup, or to those who have made a failure. In the first place, be sure that you buy a good, strong, well-developed pup, eight or ten weeks old—a pup should never be shipped until he is that age or older—and in buying it is always best to obtain them of a reliable and reputable breeder. If there is not one in your neighborhood, or if you are not able to deal with one personally, see that they can give good references. When the pup arrives place him in his new quarters, which should be a light and airy room in the barn or in some of the outbuildings, and be sure the place is dry and warm enough to be comfortable. Feed him very light the first day, and see that he has plenty of fresh water to drink. His bed can be a box with a few sacks placed in it.

To one side of the room place some sawdust or dirt, and do not try to housebreak the puppy too young. A good many pups are spoiled by making too much of them on the start.

Do not allow him to do something to-day that you will scold him for to-morrow. It sometimes looks cute to see a pup shaking a rag or chasing a hen, but he soon arrives at the age that he has to be corrected, and you will find it is much easier to correct him at his first offense.

He should soon be taught his name, but do not call him too often, especially if he is playing, and always let him know that you have a reason for calling him. It is a good idea at first to give him a little piece of meat to reward him for coming. Later on a pat of approbation will suffice.

Never allow strangers to pet, handle or tease the pup under any circumstances.

In training you should never undertake what you are not reasonably sure of accomplishing. Try to secure the dog's attention and get him interested in the work. As soon as he understands he will try to do what has been commanded. In case he should not, he must not be whipped. If you are trying to make him come to you and he will not by coaxing, put a line on him and in a mild tone of voice call him to you, at the same time gently pulling on the line, and he will soon learn to obey. Other lessons can be taught in this same way.

The puppy should understand as soon as possible that he has a master—kind, honest, intelligent and firm.

In regard to feeding, when the pup is two months old he should be fed five times a day. Some kennel men feed as many as eight times a day, but the writer always has good results feeding them five times a day until they are five months old, then three times until a year old. After that age two meals a day is sufficient.

The principal food for a pup is fresh milk, stale whole wheat bread, well-boiled rice and oatmeal, beef or mutton soup, to which add vegetables, occasionally a piece of garlic. It is always best to give lime water when feeding milk—about two tablespoonfuls to one cup of milk. When a puppy is three months old he can be fed meat either boiled or raw. It must not contain any fat and should be chopped fine. You must not feed the pup enough to satisfy his appetite, for the largest proportion of his food should be as has been mentioned first.

After the puppy is six or eight months old he may be fed like older dogs, on table scraps, and will thrive.

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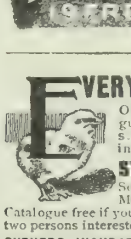


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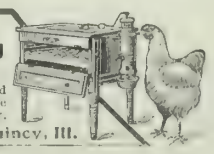
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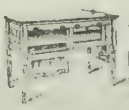


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Patrons of Husbandry.

Tulare Grange Meeting.

To the Editor:—Tulare Grange convened in regular session on the 2nd inst. Two applications for affiliation and one for the degrees were balloted on and all elected. The third and fourth degrees were conferred in an impressive manner on a class of two.

Brother Thompson of Bridgewater Grange No. 284, Vermont, visited the Grange and told of the high standing the Order of Patrons of Husbandry has in that State. His Grange has a membership of 400.

Brother Thos. Jacob, chairman of committee to enquire into the payment of premiums by the county on security companies' bonds for county officials, reported that, under a bill passed by the Legislature of this State in 1903, the premium on the bonds of State, county and municipal officers are to be paid by the State, county or municipality requiring bonds of its officers, but that not all of our county officers have sent in bills for such charges.

At the December meeting of 1904 the Auditor, Treasurer and Tax Collector sent in bills for the premiums on their security company bonds. These were rejected, but at the following January meeting Supervisor Martin put in a bill for the premium on his bond, which was laid over until the February meeting, when, on motion, the rejection of the bills the previous December was reconsidered, Supervisors Martin, Birkenhauer and McFarland voting yes and Supervisor Lout voting no—the chairman, Supervisor Twaddle, not voting. At the March meeting the following claims were allowed: Coroner, $75; Treasurer, $180; Tax Collector, $150; Auditor, $90; J. W. Martin, $14; Geo. Birkenhauer, $10. The County Clerk has announced that he will not put in such a claim.

The subject was fairly discussed and much surprise expressed that the bond security companies should have found a Legislature so complaisant as to enact such a manifest graft. The following resolution was offered and adopted unanimously:

Resolved, Tulare Grange No. 198, P. of H., Cal., has considered the justice of the State law requiring the State, county or municipality to pay the premiums charged by the security companies to State, county and municipal officials for whom they give bonds and disapprove the same. It is, in our estimation, a graft to get business for the benefit of the security company at the expense of the taxpayer, of which, we regret, some of our officials are too ready to avail themselves. We unqualifiedly condemn the payment of any more such bills.

The subject of farmers' mutual fire insurance was considered and it was resolved by Tulare Grange that a mutual fire insurance company should be organized in Tulare county.

The subject of the day, "To what extent should the National Grange urge the interest of agriculture before the National Congress?" was discussed.

It was agreed that agriculture is the greatest of all the United States industrial interests. As such, it should receive all the assistance Congress can give it for its furtherance and for its betterment; and the National Grange, being well informed on this subject, should with all its force and influence urge favorable congressional action thereon.

A committee of three was appointed to prepare a programme for the first six months of 1906.

The following officers were elected for the coming year: Worthy Master, Sister O. E. Swanson; Overseer, Bro. Lawson; Lecturer, Bro. Tuohy; Steward, Bro. E. C. Shoemaker; Assistant Steward, Bro. F. H. Styles; Chaplain, Sister O. P. Styles; Treasurer, Bro. C. E. Davis; Secretary, Sister B. I. Morris; Gate Keeper, Bro. Albert Woods; Ceres, Sister Islay; Pomona, Sister Griffith; Flora, Sister Field; Lady Assistant Steward, Sister Nelson; Organist, Sister Ella Styles.

The subject for next meeting is: "If the United States builds storage reservoirs, how should the water impounded therein be allotted?" Brothers Barber, Tuohy and F. H. Styles were appointed to open the discussion. J. T.

How to Improve the Grange Page.

To the Editor:—We very much enjoy reading Bro. John Tuohy's articles from Tulare, such as in the issue of the 18th, and wish there were more such writers as he in the membership, so as to make an interesting department Are the rank and file expected to fill all the space? The newly elected State Secretary gave us a nice little letter once, but no more. It seems to us that the State officers should contribute with, if not news, something conducive to the good of the Order. Let them try to fill up a page, if you can spare as much. We are very much in need of something to keep up enthusiasm.

I have been waiting for some one to correct the statement made in an issue shortly after the State Grange meeting in October, to this effect "that at present the wife of a Master is not allowed a vote at the State meeting," whereas the voting members of each subordinate Grange are the "Masters and their wives, or their husbands," as the case may be. Sisters are as eligible for the office of Master as Brothers. In case the Master and wife, or husband, are not able to attend the State meeting, then the alternate and his wife, or her husband, are voting members. Should alternate or Master be unmarried, the subordinate has only one vote.

Mrs. R. S. Twitchell,
Sec. of Grass Valley Grange.
Grass Valley, Nevada county.

The obligation certainly rests upon the members of the Grange to make this page interesting and useful. We cannot undertake to load it with clippings, nor to fill it with merely personal mention of good people and the good times they have. Let us have letters with reference to good farming and good home life, and to things which the Grange does which are worth doing and worth talking about. There ought to be scores of writers along these lines, and the Grange page will be just as good as they make it. Mr. Tuohy's work is a model, but, alas! he has no imitators.

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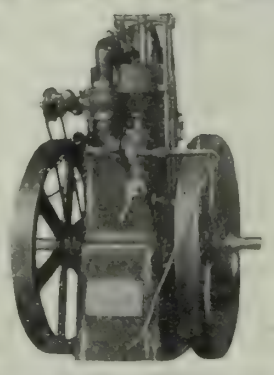
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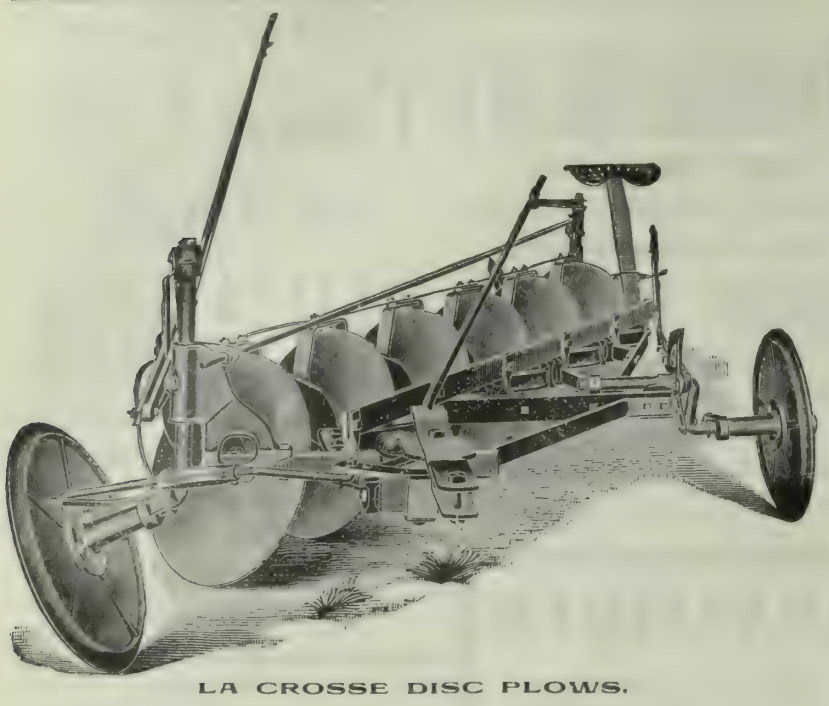
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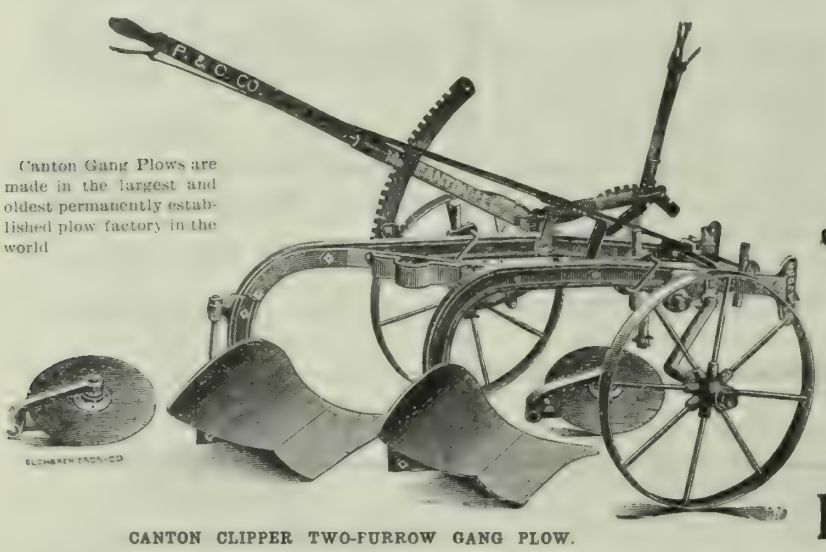
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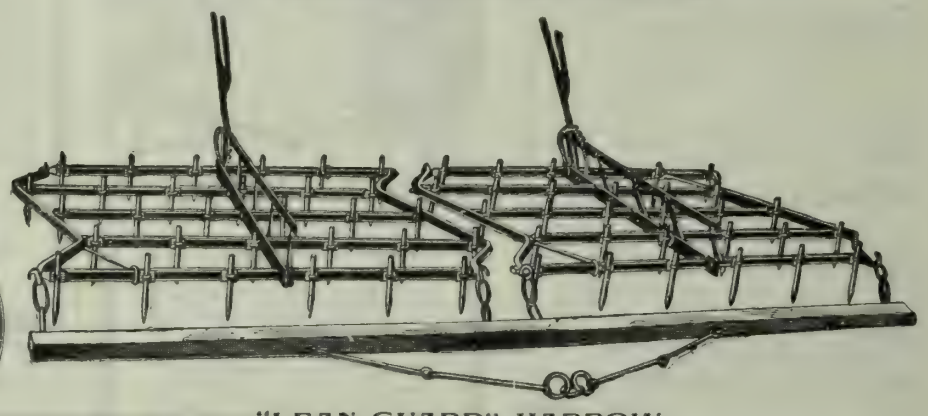


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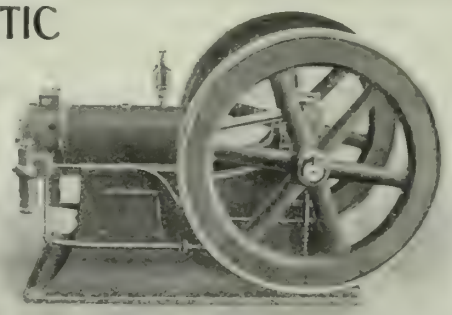
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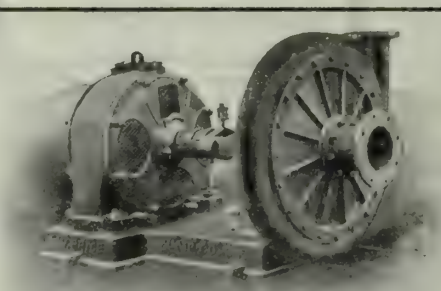
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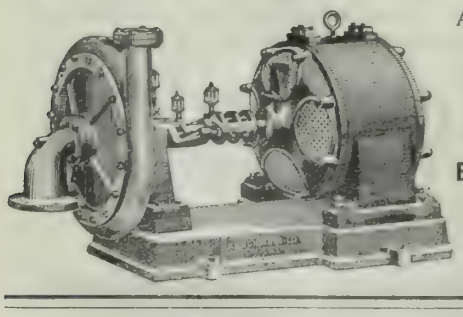
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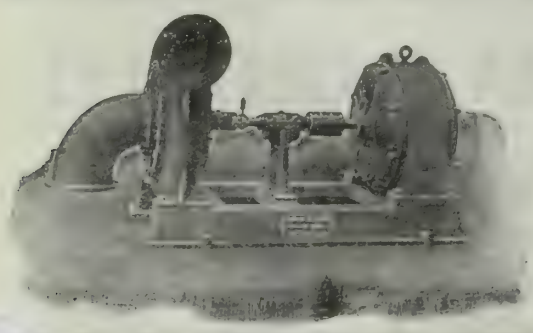
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Vol. LXX. No. 25. SAN FRANCISCO, SATURDAY, DECEMBER 16, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Tent-Curing of Lemons.

While the subject of lemon curing is fresh in mind from our reference to it last week, we desire to follow with the description of curing devised by Mr. C. C. Teague, of the Limoneira Co. of Santa Paula, and which is proving excellently adapted to its purpose, at least in the coast district of southern California, where the temperature is very equable and the atmospheric moisture regulated by proximity to the ocean and aerial influences proceeding from it. The picture shows clearly the tent system of curing, and will assist in making descriptive notes intelligible.



The Teague System of Tent-Curing of Lemons as Practiced by the Limoneira Co. of Santa Paula.

The Limoneira Co.'s house is 300x100 feet. The flooring is 2-inch planking and the roof covered with gravel-paper roofing. The building has no sides whatever, allowing free circulation of air. The fruit for storage is put into regular shipping boxes, piled in blocks of 560 boxes. There is a double row of these blocks on either side of a 20-foot space which extends to the entire length of the building, and which answers the double purpose of a work room and an air space. The boxes are so piled as to permit of the circulation of air around each box. Each block of fruit is covered by a canvas 10x10x20, made box shape and open at the corners. The ventilation is controlled by raising or lowering this canvas, and each block of fruit can be given exactly the ventilation that it requires, irrespective of the other fruit in the house. By this method 50 or 100 cars of fruit can be handled and kept in as good condition as if there was only one. Each block being numbered, a complete record of the lemons from each of the six sections of the ranch is kept from the time it is picked until the fruit is shipped. The fruit is all washed in a lemon washing machine, and is piled up in the house wet, just as it comes from the machine. The canvas covers are not dropped over it, however, until it is thoroughly dry.

The Limoneira Co. handled over 100 cars by this method in 1902, with perfect success, some of the fruit being kept for six months in good condition. Not a lemon was shipped under ice, and no allowance or claim was made for decay, excepting on one car which contained weak stock and which by reason of a mistake in transportation was nearly a month in transit. In this case, 5% deduction was allowed. There were in May, 1903, about sixty-five cars of lemons in the company's packing house and the owners did not feel uneasiness regarding them, knowing that by this method they were masters of the situation. Since then their experience has been notably in favor of the new method and others have followed them in its introduction.

At a fruit growers' convention in 1903, Mr. Teague gave a contrast between his system and cold storage as follows: "We hear a great deal of late about sending our lemons East as soon as cut, there to be held in cold storage for a favorable market. The following are a few reasons against cold storage: First—The lemons when picked and handled properly should stand shipment to the Eastern markets without ice, and the ventilated lemon that arrives in good condition invariably gives better satisfaction than fruit that has been iced. True, sometimes fruit that is a little weak can be iced and be made to arrive in fairly good condition and will, perhaps, sell well; but what does it do when taken out of the low temperature of the car and subjected to the hot, humid atmosphere of the East? It decays and goes in as evidence that California lemons are not good keepers. The keeping quality of hundreds of cars of California lemons is injured every year by icing. In the early summer months a few cars of lemons will, perhaps, arrive in bad condition and the order will be sent out, 'In the future ice your cars,' and the shipper immediately goes to icing regardless of whether the fruit to be shipped is hard, good-keeping stock or not. If it is a bad practice to refrigerate fruit in transit, it is certainly not good practice to put it in cold storage after it arrives in the East.

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The Week.

First-class tourist weather has continued, the days and nights rivaling each other in brilliancy and temperatures, as a rule, delightful. The winter-flying element of our population is delighted beyond expression and votes California the best of all the warm winter countries. This is a good thing for that side of our resources and income, but, from an agricultural point of view, the comment is not as appreciative. We are in the midst of scant feed, which must soon bring considerable losses if continued. It is getting late in many places for winter growing grain crops and there must be a rush in tree planting whenever the soil gets into condition. At the extreme south there have been dry gales of exceptional severity and some harm has been done. The wish for something very different in the way of weather is wide among producers and all are looking anxiously for signs of it.

The Fruit Growers' Convention at Santa Rosa last week was one of the best we have ever attended. The arrangements were good, the attendance was very large for an interior situation, the subjects were timely and forcibly presented and we believe all who attended were delighted and edified. We give upon other pages some of the earlier proceedings and shall continue as opportunity offers with others. The spirit of the meeting was more confident and hopeful than has been manifested for several years. It is wonderful what an effective influence good prices have toward optimism, and those who expected the customary wrangle over the condition of the industry were disappointed. Even those who have proclaimed most loudly for a reduction of all acreage of trees and vines except thier own joined in the general shout that the outlook warrants expansion, and that California may go ahead in fruit lines. Of course, most people know that it would go ahead anyway, but it is delightful to have all at work to help it go.

It seems poetically proper that the old landmark, Sutter's Fort, at Sacramento should be filled with a demonstration that California was worth defending, as is now proposed by Mr. J. A. Filcher. He desires that the fine display of farm products brought from the Portland Fair should be set up in the fort, instead of being stored in some cellar or warehouse, where they never will be seen again, unless called for to be used at another big exposition. In the meantime the exhibits will deteriorate, and many of them will be found practically worthless. In the fort there is plenty of room for display and the location is appropriate, for the reason that the fort is visited by many Eastern people and tourists from all parts of the world. The fort and the surroundings, by contrast with the choice products of California farms and orchards, should appeal to fancy the more strongly as showing the result of the civilization induced through this pioneer settlement. All these claims seem warranted. These exhibits are not, to be sure, such historical objects as will finally find a resting place in the fort, but they are of a nature sufficiently interesting to draw attention to the spot, and as the historical objects are gathered these less prized articles may be displaced, and many of them, having served their purpose, may be discarded, if that course is deemed proper. In this way the fine property can be put to good use, and we trust the Sacramento people will arrange for the display.

It now looks as though Congress would not go to its Christmas dinner without making a good thrust at the Panama canal project and, if this is done, Californians will enjoy their Christmas dinner all the better. The telegraph says that the emergency measure appropriating several millions for the Panama canal will occupy the coming week in the Senate. It is expected that the Senate will restore the $5,500,000 cut off the proposed appropriation of $16,500,000 by the House. It is believed the bill will become a law before the week is ended, but many members have signified their intention of raising at this time question of sea level or lock canal, and it may not pass until next week. Either week will do well enough, but it must be some week pretty soon. California is in full sympathy with President Roosevelt in his declaration that there must not be a moment's unnecessary delay in this matter.

All believers in the correction of the common school curriculum, so that subjects of fresher and more pertinent nature shall be included, should prepare to take part in the joint session of the California Teachers' Association and the State Farmers' Institute, which will be held at the University in Berkeley on December 26 to 29. A very full program of addresses and discussions has been provided, which we expect to have ready for printing next week, and meantime we trust that many will set apart the days indicated for the broadest agricultural assembly ever held in California.

Professor Wickson is out this week examining sites offered in the San Joaquin valley for the University Farm provided for by the last Legislature. Next week he expects to be in Sacramento valley on the same mission. Several important organizations have recently adopted resolutions strongly protesting against the location of the farm in Berkeley. This is all very well as an expression of the public mind, but it does not appear that the Farm Commissioners ever seriously thought of such a location. The farm will, no doubt, be located as strictly in conformity with the terms of the law as possible.

Members of agricultural societies, which have been for years discussing the importance of reforms in taxation that shall place a share of the burden upon property which does not lie out in the sight of the assessor, will be interested to know that the Commission provided for by the last Legislature has been diligently at work and is likely to have the reforms advanced as rapidly as possible. At its last meeting there was discussion of the constitutional amendments that would be necessary to make operative the suggestions that Professor Plehn has put forward. These suggestions are, in a general way, in accord with the claims made by the farmers in their declarations on the subject.

The State Fruit Growers' Convention at Santa Rosa took vigorous hold upon transportation problems, declaring that California growers should have as good rates as those of Oregon and Washington, and that the rates of refrigeration should also be as favorable to shippers as at the north. Upon the question of recrimination, this was the declaration:

The establishment of a court of interstate commerce, clothed with powers to enforce summarily the orders of the Interstate Commerce Commission and the laws forbidding carriers or shippers to give or receive rebates, concessions, or discriminations. Such court is to concern itself solely with interstate commerce cases, and shall have power to enforce its orders by writ of injunction, attachment or other process. It may act upon the application of the Interstate Commerce Commission or any aggrieved person, and may punish violation of its orders as contempt of court, by a fine of not more than $5000, or imprisonment for not more than one year.

This seems to be clear enough against the darkness which has prevailed in fruit handling hitherto.

QUERIES AND REPLIES.

Legumes Instead of Bare Summer Fallow.

To the Editor:—I desire to obtain information regarding the growth of field peas on grain lands of the Sacramento valley. You have knowledge of the fact that growing grain on these lands is fast becoming unprofitable, due to the gradual decrease in yield. The principal cause of this decrease is probably due to the successive cropping of grain from the land without rotation of crop. The practice of summer fallowing one-half the land each year has no doubt extended its life, but has failed to renew Would it be practicable to rotate the field pea with grain on the land in question, and of course do away with the summer fallowing, as a benefit to the land? If the field pea could be successfully raised, in what way could the crop be disposed of to the best advantage—that is, would it be more profitable to pasture or to cut the yield for hay? What preparation does the land require to sow the pea, and how long does it take to mature?—Farmer, Sacramento Valley.

The feasibility of growing legumes in rotation with wheat crops in the place of bare summer fallow is a very important and interesting proposition, concerning which we cannot at present give definite judgment. The University Experiment Station has experiments already planned for the present season to test this matter, and various hardy legumes, including ordinary field peas, will be tested on the cereal station near Yuba City. Until results are attained, we cannot undertake responsibility of advising you. It would be very desirable indeed, however, if you could make an experiment yourself, using the common field pea and sowing early enough so that it would be rooted before the dry season comes on. As the field pea is quite hardy, it could be sown while there is still likelihood of frost. The crop can be pastured or can be cut for hay, or can be plowed in to add its decayed vegetation to the improvement of the soil, both in increasing its plant food and making it more friable and retentive of moisture. Field peas can be broadcasted before plowing and covered with a shallow furrow. The length of time required for maturity depends upon the local climate—say from three to four months.

For Moist Land With Little Alkali.

To the Editor:—I am writing for information in regard to soil in this vicinity, which is of a sandy loam impregnated, I should judge, with alkali in spots. The land produces a very heavy growth of vegetation and is naturally subirrigated, keeping the land moist through the entire summer. I would like to know if the land is adapted for onions, tomatoes or hops, or if the alkali would be a detriment to the above. Will you kindly tell me what crops the land is adapted to? The corn and Irish potatoes that were planted this year did not amount to much. The corn grew to a height of from 10 to 12 feet, with few or no ears. The potatoes looked very nice on the outside, but were spotted black all through the center. The beans grew all to vines.—Farmer, Turlock.

We can not tell you definitely about what can be done with the land which you describe. You will have to do some experimenting with it; for instance, a little experimentation will be necessary to determine whether you will not get too coarse, thick-necked onions. You could perhaps get tomatoes by planting pretty late, so as to be sure that too much moisture did not remain, for that would soon send them all to tops, just as the potatoes acted. Hops are worth trying. They have been successful in certain moist lands in your county. That result would depend, however, on whether the alkali was too strong or not, and that could only be told by experiment. One would think that such land would produce a very large yield of red clover, if the moisture remains near enough, and moisture that would be too great for a good many other crops would simply give you more clover, unless, of course, the alkali should be too strong. So again you see definite answer to your questions must come from such experiments as you are disposed to make. It seems fair to expect

that on such land, holding moisture so well, you ought to be able to find something which would produce magnificent results; but the attitude of the plant toward the continuous moisture and toward the alkali has to be learned by experience.

Success With Long Cuttings.

TO THE EDITOR:—Upon showing your reply to my question about growing long vine cuttings to a neighbor, he declared he had planted cuttings 3 and 4 feet deep and that they had rooted clear down to the bottom, and to prove it we dug up two vines to-day which were 30 and 33 inches deep, well rooted and healthy, and I will send them to you.

If there is anything we enjoy more than a demonstration that we are right it is a demonstration that we are wrong. Nothing is worse than doubt and uncertainty. Your excellent specimens are certainly a demonstration that, in your soil and in your moisture conditions, a vine cutting will root strongly at a depth of 2½ feet from the surface. The total length of the cutting is shown by the specimen to be 3 feet, of which 6 inches remained above ground. Whether this deep growth can be depended upon in other soils and under other conditions than those which prevail with you is not demonstrated. Our earlier comments upon the general question were, it seemed to us, justified by general experience in the use of long and short cuttings, and we shall certainly take great interest in seeking farther information as to whether such a cutting can be depended upon under different conditions and whether from various points of view it is desirable. On this subject we shall be glad to hear from any grape grower.

Drainage and Subsoiling.

TO THE EDITOR:—If a person was to lease a ranch for a term of five years, would it justify him to go to the expense of subdralning it, to get the best of results, and to work the soil properly? His object in doing so is that he might be possibly the purchaser when the lease expires. How close and deep should a subsoiler go near a vine or tree; should it follow the plow as it is turned, or should it be done separately, before or after plowing?—SUBSCRIBER.

Whether it would pay in five years or not depends upon how valuable crops you can grow on the improved land. No one can answer that in a general way. To put in a lot of money with the possibility of purchasing will make it necessary for you to have an option to purchase at the end of the lease at an agreed price. If you do not, you will have the fun of paying for them over again, for any wide-awake owner would charge you as much more for the improved land as he thinks the traffic will bear. The just way for a tenant to make improvements is to arrange for it as they do in England, where the landlord has to compensate the tenant for certain kinds of permanent betterments he may make, the value to be determined by appraisers. You can subsoil in the furrow or not. It is done both ways. Do not go too near a tree or vine; a few deep cuts in the center of the roots is best. Plowing deeper occasionally to break up shallow hardpan is not subsoiling.

The Canaigre Ventures.

TO THE EDITOR:—I desire to find out the exact reason why the production of canaigre for tanning purpose was discontinued. I understand that you have given the subject a good deal of attention and might enlighten me on this particular point. As far as I can make out the production of beets, requiring similar water and attention and being a more valuable crop, has replaced canaigre with the grower.—ENQUIRER, San Francisco.

The undertakings with canaigre have failed in part because many of them were undertaken by people who did not know much about agriculture, and second because there was a great exaggeration of the demand for the product and of the feasibility of marketing the roots. Even in New Mexico, where they went extensively into putting up factories for the preparation of the extract so as to avoid the cost of marketing the roots themselves, we understand the undertaking was disappointing. Whatever canaigre seems to be in demand can be easily supplied from the plants which grow wild in southern California. The whole canaigre proposition was boomed without sufficient actual testing of growing and marketing conditions. Because collectors could make a few hundred or thousand dollars it was inferred that growers might make millions. We have had too many such booms and sensations.

Almond Pruning.

TO THE EDITOR:—Regarding the pruning of almond trees the point I wish to know principally is, whether the shoots which extend from the crown of the tree should be cut back or whether the tree should be thinned in the middle. I have about 1000 twelve-year-old almond trees which have never been pruned. Some have grown very tall, others very bushy, and some have done both. I want to know how to prune them and get better results than have been realized thus far.—GROWER, Poplar, Tulare county.

To get your old almond trees into proper shape you must prune according to your own idea of desirable form. Trees which are spreading too much can have their outside limb removed or shortened to an upward growing lateral and trees which are too bushy in the season should be thinned out. It is not customary to shorten-in almond trees as peaches are shortened-in. The main point is to prevent the tree from becoming too dense and brushy and at the same time, particularly in the interior valley, not to open the center too much to the heat of the sun. Observing these general suggestions you cannot fail to safely proceed with the pruning as your judgment dictates.

Acids and Alkalies.

TO THE EDITOR:—We know that an acid will destroy an alkali. Now if I should take blue vitriol or bluestone and scatter it over a piece of alkali land and turn water in on it until the stone is dissolved and soaked into the ground, will it destroy the alkali and will it injure the earth to prevent plants from growing? I know that if I had plenty of water and a good drainage that I could drive it away that way, but I have not got a large amount of water, so I cannot do it.—ALKALI IKE, Kings county.

Blue vitriol or bluestone is not an acid, but it is an acid united with a base in such a way that its acidity is neutralized thereby. For this reason it would not act upon alkali as a free acid would, and then to fill the soil with a solution of bluestone would render it sterile for a considerable period. Caustic alkali could be rendered less active by the use of a dilute solution of sulphuric acid, but it would be more expensive than the land would be worth and another salt would remain which would be injurious to vegetation.

Seedling Walnuts.

TO THE EDITOR:—I have some very fine nuts from a grafted walnut tree seven years old and I would like to plant them. Do you think the immature age of the mother tree will affect the development of the young walnut? Will it be all right to plant them right away?—SUBSCRIBER, Hollister.

The age of the tree will not matter. You must remember that as your tree is grafted it has all the age of the tree from which the scion is taken and is not like a seedling first coming into bearing—although we have no definite knowledge that that fact has any particular pertinency. If the nuts are large and well filled, plant them at once in soil where the water will not stand, or put them into moist sand until you are sure you will have no standing water.

Seeding Themselves.

TO THE EDITOR:—Will you have the goodness to mention in your next issue a few of the best grasses which can be grown on our dry California hillsides for improving the common native grasses? I mean grasses that do not have to be seeded down again after they are once established, and which will seed themselves after six months of absolute dryness. I know of burr clover. Are there any others as good?—A. T., Placer county.

Australian rye grass, Hungarian brome grass, orchard grass and some others will do that and start quickly with the first rain, but you must give them a chance to make some seed toward the end of the rainy season. The reason our lands fail of good winter grasses is because they are overstocked and too closely grazed, and the plants are not given a chance to make seed. The weeds are shunned by the stock and seed well, consequently the land runs to weeds. Treat the pasture better and it will do better for you.

Alfalfa and Morning Glory.

TO THE EDITOR:—I see in your last number an inquiry about how to kill wild morning glory. My experience is, a good stand of alfalfa will do the business.—T. G. HERMAN, Wadsworth, Nev.

This is interesting. We have seen just the reverse, for we have seen alfalfa fields go to morning glory. Who can give experience to settle the issue one way or the other?

Growing Magnolia Trees.

TO THE EDITOR:—Will you please tell me how to sprout magnolia seed? I have tried several times and failed.—AMATEUR, Orange county.

Magnolia trees are commonly grown from seed, the seed being taken when fresh, the pulp crushed somewhat or removed, and the seed put into the ground before drying. It is exceedingly hard to get a start from dry seed. Perhaps this has been your difficulty; otherwise the handling of magnolia seed is not different from other tree seeds. You can also get trees quite readily from green cuttings cut with the heel and grown with bottom heat.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 11, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Clear, cool and frosty weather prevailed during the week. The frosts in some places were quite heavy, but caused no damage to oranges or other crops. The rain of the preceding week, although beneficial in localities where the precipitation was heavy, was generally insufficient to put the ground in good condition for plowing or to sprout early sown grain, and pasturage was not materially improved except in a few places. Feed is scarce and stock are suffering. The soil is very dry and but little plowing is being done. Farmers and stock raisers are becoming anxious over the unusual drought, fearing a failure of crops and feed. Orange harvest is progressing rapidly and large shipments are being made. Tree pruning continues.

Coast and Bay Sections.

Clear and cool weather prevailed most of the week in the central and northern sections, with frequent frosts. In the southern coast districts the weather was clear and warm and conditions were favorable for farm work. Light rain fell in the northwest coast districts on the 6th. The frosts caused no damage to crops, but the cool, dry weather is causing much anxiety to farmers, stock raisers and dairymen. In the vicinity of San Luis Obispo new grass is up and making fair growth, but rain is needed soon to make good feed. Plowing and seeding are in progress in most places. Work continues in orchards and vineyards. Oranges are ripening and will soon be ready for market.

San Joaquin Valley.

Cool, fair weather prevailed during the week, with frequent dense fogs during the night and forenoon. Heavy frosts occurred on many mornings, but caused no damage. The rains of the previous week were not sufficient in all sections for general plowing, and farm work is making but little progress in most sections. Range feed is scarce, and more rain and warm weather are needed to start the new grass. Pruning orchards and vineyards is progressing in some sections, but the work is not being rushed. The orange harvest in the Porterville district is practically over, and a large crop of excellent quality was gathered. Heavy snow is reported in the Sierra. Stock are being fed in most sections and are getting thin. Rain is badly needed.

Southern California.

Warm and clear weather continued during the week, with frosty nights in some sections. High winds and sandstorms prevailed on Saturday and Sunday, and it is reported that great damage was done the orange and olive crops in San Bernardino, Riverside, Orange, Los Angeles and San Diego counties. Fruit was blown from the trees and in some orchards the trees were broken and uprooted. Drifting sand interfered with railroad traffic, and the high winds damaged shipping. Previous to the windstorm conditions had been unusually favorable to oranges and all other crops, but it is probable all farming interests have been damaged by the extremely dry winds. Plowing and seeding continue. Oranges are being gathered for the holiday trade. Prospects are good for a very large yield of honey.

LOS ANGELES SUMMARY.—Drying land winds during the week turned into severe norther Saturday, with sandstorm in the interior. Reports so far do not state effect except that a few say some oranges were blown off and trees uprooted.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 13, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.02	5.85	11.38	13 83	64	36
Red Bluff	.00	2.13	11.63	7.83	70	40
Sacramento	.00	1.23	7.89	5.50	68	38
San Francisco	.00	.92	9.00	6.58	68	45
San Jose	.00	2.17	5.05	.....	70	32
Fresno	.00	.96	5 07	2.62	66	34
Independence	.00	.43	.45	1.19	68	26
San Luis Obispo	.00	2.00	4.73	4 85	76	38
Los Angeles	.00	3.06	1 49	3.83	78	40
San Diego	.00	4.29	.24	2.09	74	48
Yuma	.24	3 39	.91	1 42	72	40

FRUIT MARKETING.

Commercial Aspects of Our Fruit Industries.

A Report by Lt.-Gov. Alden Anderson at the State Fruit Growers' Convention at Santa Rosa.

Those who are interested in deciduous fruit growing in California can at the conclusion of any one season generally truthfully exclaim, "The past season was an unusual one," and this exclamation would certainly be entirely true as regards the one just past. No two deciduous fruit seasons in California have ever been exactly alike, and the growing and handling of the product is affected by so many different influences that are apparently far removed from here that even were the crops exactly the same the conditions for the selling and marketing might be entirely different for the two seasons. This year, in addition to the size of the crops and the different varieties of fruit being different from that of last year, the fruit was some three weeks earlier in ripening, and this, of course, had a large bearing on that portion of the crop handled in the fresh state.

In 1904 the first carload of deciduous fruit (cherries) left California for the East on May 13th, while this year the first carload was shipped on April 22d, being twenty days earlier. This means more than would appear on the surface, for in the places where our fruit is sold it has to compete with horticultural products from all other districts, and an "early" year here admits of a greater distribution of our products before the time of heavy competition.

The following is a statement of the deciduous fruits shipped in a fresh state from California beginning April 22d and ending November 20, 1905. The figures are for actual carloads shipped and not estimated ton cars. For comparative purposes, I also include the shipments of 1904:

	1904.	1905.
Cherries	209	79
Apricots	97	279
Peaches	559	1,946
Plums and prunes	1,053	1,391
Pears	2,186	1,013
Grapes	1,451	1,602
*Apples	43	1,744
Quinces, persimmons, figs, etc	28	17
Totals	5,626	8,071

* Shipments not finished.

Cherries.—It will be seen from this statement that the cherry and pear crops were particularly light, while of the other varieties some were normal and some heavy crops. The shipment of the two varieties first mentioned was lighter this year than for eleven or twelve years, and the cause of this shortage is attributed to heavy and continuous rains which fell at the time of the blossoming of the trees, thus injuring them so that they did not "set" their fruit. In addition to the short crop of cherries, considerable rain was had at the time of the harvesting of them, which further reduced the output. However, returns for those shipped, even under adverse conditions, wery very satisfactory.

Pears.—The pears that were available for shipment and for canning and drying brought exceptionally high prices this year, and for the future for those that are raised there certainly should be good prices. The pear blight has made its appearance the last year or so in districts heretofore free from it, and great concern is felt as to the probable extent of its ravages. It would not be the part of wisdom to plant new pear orchards until it is fully demonstrated whether this disease can be effectively combated or not. Federal and State officials and experts are now working hard on the problem. It is to be sincerely hoped that the orchards that we have can at least be saved.

Apricots.—The shipment of apricots was heavier than for any previous season. The markets on this variety of fruit do not expand, and it is only in the larger centers that carload lots can be handled to advantage, and even then the distributing capacity is limited. I doubt if the shipment of this year will be exceeded for a number of years, unless the season and conditions come so that they can be distributed in assorted carload lots to outside places. Smaller consuming markets that can handle a carload of peaches or pears will comparatively only handle from 50 to 100 crates of apricots. This assertion in respect to shipments in a fresh state has no relation to or bearing on their status in a dried state, where the facts are directly reversed, for the market for the dried product is broadening every year. An improvement in refrigeration and transportation that would permit their being picked riper and consequently with more flavor and quality might eventually result in their becoming more popular in a fresh state with the consumers.

Peaches.—1946 cars were shipped the past season, and this fruit, on the whole, found very good markets. This is for two principal reasons. First, the earliness of the season allowed a large quantity of them to go into markets before other districts had ripened their peaches, and second, because of the marked shortage of the peach crop in some of the large and competing horticultural districts near the large distributing centers. The number of cars above referred to was, as before said, marketed at very remunerative prices, while for the season of 1904, a late season with big crops in other horticultural districts, only 559 cars were shipped, with indifferent results. These facts tell their own story more forcibly than I can, and in reply to a number of inquiries that I have received on this subject I have invariably replied that some years it would undoubtedly pay to ship moderate quantities of peaches, and in other years large quantities could be profitably shipped, but that there would be years when, on account of ripening conditions and large crops in other peach growing districts, where planting of this fruit has been greatly increased, it would not pay, and their forwarding would only mean loss. It stands those who contemplate increasing their pear orchards in hand to plant only those varieties that in the "off" years can be diverted to the dry ground or cannery.

Plums and Prunes.—The shipment of plums and prunes was the heaviest, with one exception, ever shipped from the State. The product was well distributed throughout the season and brought uniformly good prices. The extreme hot spell the first part of July injured some varieties badly, notably Kelsey Japan plums, which prevented their realizing the prices they otherwise would have. California shipping plums and prunes. as usual, are valued foremost in the markets, and there will always be a market for a goodly quantity each year, if harvested under normal conditions and well packed, no matter what the size of the crop in competing districts.

Grapes.—On this fruit shipped this year results have been very remunerative. Many more cars would have been shipped had it not been for the extreme and long continued hot spell the first part of July, which injured them, especially in some of the earlier districts, quite severely. Had the grapes so injured matured and been shipped and strung along throughout the shipping season the several hundred cars so injured could have easily been handled without affecting the prices realized. Based on results achieved the last four years and using prices as a criterion, I believe grapes promise as much or more for the future than any other variety of fruit we raise, for the varieties of fruit we raise are not raised in any other place in the United States, and the market for them is extending and the demand apparently increasing yearly.

Apples.—On apples there was a very good crop this year and the shortage of the Eastern apple crop made possible the widest distribution this fruit has ever had. The splendid packing of the fruit and its unexcelled quality has enabled it to hold its own in all markets.

Transportation.—Taking the season as a whole, we have the best service so far as regularity and expedition are concerned from the transportation companies we have had for any time in the last five years. This is particularly true in regard to the main through lines and direct routes. By this I do not mean that the service is as yet perfect, but there seems to have been an earnest and concerted action on the part of the highest railroad officials to give us the service which we must have to reach the best state of perfection in shipping and in distribution. For some of the smaller places on the side line routes there is yet very much to be desired in the way of more expeditious service.

A very earnest attempt was made by this company last winter and early spring to secure a reduction in the deciduous fruit rate to extreme Eastern points. It other words, it was desired to secure a "Postage Stamp Rate" for deciduous fruit shipments, so that fruit could be diverted to any point at the same freight rate. At present the far Eastern points pay 25 cents per hundredweight higher rate than Chicago and the West, and our keenest competition, particularly on peaches, which compete more or less with all deciduous fruits, comes from Georgia and the Southern States, which places are comparatively so much nearer the Eastern distributing centers that they naturally market the bulk of their products there. This rate is also desirable to enable a better distribution from this State, as growers will not hesitate to go into any market because of a higher freight rate.

Thus far our efforts for reduction have not been successful, but the effort to secure same will be persistently prosecuted.

Refrigeration.—In connection with the subject of irrigation some very interesting and pertinent experiments were made by the Federal Government in California last season. Every assistance asked for by the officials sent here for the purpose of making tests and experiments was gladly given by growers and shippers. Just how successful the results were has not as yet been publicly announced, but the object sought for was the precooling of fruit before putting into refrigerator cars, with the idea in view of allowing a more nearly matured product to be packed than would otherwise be the case. If this could be accomplished the fruit would arrive at destination in better order and condition, would have a better color and appearance and more quality and flavor, and would thereby please and satisfy the consumer better. Such conditions eventually lead to a very much greater demand. The experiments as carried on had to do with the holding of fruit here from twelve to thirty-six hours before shipment.

Another process was brought forward by a prominent shipper, which is known as the "Cyclone Cooler Process." The equipment of this process seems to have been very well developed, and from a personal examination of one of the lately improved plants I can only say that it seems thoroughly efficacious. Its application lies in precooling the fruit immediately after it is loaded. This process seems more practicable and effective than the cool air chamber, as experimented with by the Federal officials, as the "cooling" of the fruit requires only a few hours. That a perfected arrangement of this kind will be of benefit in the handling of the more perishable forms of deciduous fruit there can be no doubt.

After noting the experiments that were carried on by the Federal Government last year by direction of the company of which I am manager, I addressed a letter to the Secretary of Agriculture at Washington, pointing out a number of other lines on which it was very desirable that experiments be conducted in regard to the refrigerating and shipment of fresh fruit. It is particularly desirable that these experiments should be carried on by trained observers who are fully equipped by training and with apparatus, and it is quite true that there is no one so well equipped or in whom more confidence would be placed than the agents of the Federal Government. It is to be hoped that the experiments will be continued to determine positively several points on which at present there is much diversity of opinion, and a correct and exact determination of which would be of great benefit for the fruit interest to know.

As regards shipping, sufficient cars were at all times available for the loading of the fruit, and very little cause for complaint has arisen during the season.

In response to appeals for reduction in refrigeration tariff, promises have been made that if cheaper ice can be secured a further reduction would be made another season.

Co-operation.—The increase in the planting of fruit trees in other and competing horticultural districts makes it more necessary than ever that those engaged in the industry in this State should work closer together for their own interests and for the benefit of the industry at large. It is only by co-operation in shipping that the very best results can be had, first, by an even and proper distribution of the product shipped, comparatively, and by varieties, to the several markets, and second, by the working up and exploiting of new markets and in the preventing of California fruit competing with itself. I advocate no particular kind of co-operation. If one system is not the best, a better one should be devised. If one management is not good, another one should be substituted, but all having the best interests of the industry at heart should work together.

As manager of a large company engaged in its distribution, I have constantly acted along these lines at all times. Although a private enterprise, we have given to the public press the total shipment of cars by varieties that were shipped daily from the State, as collected and compiled by the company, and have also given the result daily of sales of all their cars at auction in all auction markets.

For the Future.—In giving these facts and in making these statements I do not desire to be placed in the list of those who advise the planting or nonplanting of any particular variety of fruit or fruits. I only desire, in line with your request, to give the conditions as I see them and let those interested judge for themselves. In speaking of deciduous fruit growing in California of any variety, or in any of its phases, it is well to remember that we have the most natural orchard country in the world; that in no place where fruit is grown do they get such quantities, such variety and such a regularity of crops as we do, and while some of the older orchards will have to have special care and be fertilized to continue in the same condition, there is no doubt that if properly attended to the trees are longer lived as regards producing possibilities here than in any other horticultural district.

In speaking of these favorable conditions, though, it is well to remember that we are on the extreme western edge of the continent and that we have farther to transport our products to market than any other fruit growing district, and no matter what the conditions are or whether comparatively we receive a lower rate of transportation as compared to nearby and competing districts, this will always be a matter to take into consideration when disposing of products.

Taken by and large, for all varieties and in all districts, the past season has been one of the most remunerative ever had in this State. Of course, there will be individual growers in some districts who had poor crops, and other districts that had short crops of some varieties, but on the whole, as before said, it has been very satisfactory.

As a portent of the future I can only repeat what I have heretofore declared, that "those who diversify their planting, with the average regularity of crops as judged by the past, and to those who attend closely to the matter of attending to their fruits, cultivation, spraying, thinning, etc., the prospects for average satisfactory and remunerative results seem to be fully as good as at any time in the history of the business since it attained large proportions."

Governor Pardee's Declarations on Our Fruit Industries.

From an address by HON. GEORGE C. PARDEE, Governor of California, at the State Fruit Growers' Convention at Santa Rosa.

I realize that this is a gathering of men who are, in one way or another, specialists, and I shall not undertake to instruct any one of my hearers in his specialty, whether it be orchard or vineyard, wine or raisin making, the marketing of fruit products or the study of plant and tree diseases. All I shall attempt to do is to talk to you about the general economic aspects of our great fruit industry, and then add something in regard to the efforts which the State and Federal Governments are making to promote it.

No one knows just what the value is to California of this great industry, because there are no complete statistics, although it is by common consent agreed that it constitutes our largest single interest. In the census of 1900 the value of the fruit products of the United States was given as $131,000,000, of which California claimed $28,000,000, or 21½%. These figures were sufficient to show how far California had outstripped every other State, for New York, the next largest producer, contributed less than $16,000,000. But these figures are six years old. One expert now estimates California's fruit products at $50,000,000, while another competent judge places the figure at $80,000,000.

FRUIT SHIPMENTS.—During the shipping season just closed there have been forwarded more than 8000 carloads of deciduous fruits, which went to 135 Eastern cities, from which it was redistributed so widely that there was scarcely a town in the Northern States in which the inhabitants could not enjoy fresh California fruit.

But the magnitude of this movement of fresh fruits, great as it is, will be far outdone this year by the trade in citrus fruits, just commencing. More than 30,000 carloads of oranges and lemons were sent to Eastern markets last season, the value amounting to not far from $15,000,000, and even this wonderful record will be surpassed during the coming year. Add to these figures 4000 carloads of raisins, 5500 carloads of prunes, 500 or 600 carloads of walnuts, the canned and dried fruit and the wine and brandy, and you will have a quantitive measure of the fruit industry of the State.

QUESTION OF EXPANSION.—The fruit producers of California have already conquered so many difficulties that there is reason to believe they will continue to win success, and, although excessive expansion is to be deprecated as dangerous, further development, if judiciously managed, is probably as safe as most business investments. The whole question is one of education. We will have all of the market we need when we succeed in convincing the consumers that they need the articles which California alone can produce, or can produce in greater perfection than any other region. In the natural order of events, demand and supply will be equalized, and the regions in which fruit growing will be prosperous will be those in which fruit can be produced at lowest cost and of the first quality, because in fruit, more than in most other things, quality is something about which everybody is particular. And here is where we will win in the competition, thanks to the California climate and soil, supplemented by the greater intelligence of our horticulturists.

WHAT THE GOVERNMENT DOES.—Now about the relation of the Government to the horticultural and other farm industries. You all know how rapidly in this country our conceptions of the value of agricultural education and of research and of experiment have enlarged. And you all know that the Department of Agriculture has grown faster than any other of the departments of the Federal Government. And I am glad to say that in the head of that department, Hon. James Wilson, California has a very good friend. Mr. Wilson has sent us the leading expert of the country to investigate pear blight, which threatens the Bartlett pear industry, and the expert has carte blanche to do everything which may be needed, or which he can devise, to assist us in combating the disease.

You have all heard of the Plant Introduction Garden of the Department of Agriculture recently established at Chico. The department each year imports 1000 to 1500 new plants, scouring the world for them, and as some place was needed to test their value and to acclimatize them, an introduction farm was established in California, because a greater variety of things will flourish in our soil and climate than elsewhere. It is natural to assume that if the new introductions will acclimatize here this State will be the first to derive advantage from those which prove to be valuable.

The third advantage I will mention is the establishment of an experimental date farm on the Colorado river. Africa and Asia are being ransacked for date plants to be tested on the farm, and the possibilities are immense. It is a fact, and not merely a theory, that dates will grow in California, and all that is necessary to create a valuable new industry is to discover the right varieties and the most favorable districts in which to grow them. In the same liberal manner Secretary Wilson has come to our assistance in the Smyrna fig industry and in soil surveys, irrigation investigations and viticultural experiments.

STATE HELP.—And our State, recognizing the importance of these industries, has not been idle. It appropriated in the last Legislature $150,000 for a university farm, which is bound to be of lasting benefit to horticulture, as well as to the animal industries and every kind of farming. It also provided for a pathological station to be established at a cost of $30,000 for the study of diseases of orchard trees, fruits and vegetables. Equally important was the appropriation of $20,000 to be spent in viticultural research by the scientists in the University. Other appropriations and laws of benefit to the farmers were passed.

As an evidence of how everything agricultural tends to come to California we expect next year three national conventions of peculiar interest to farmers, and there will also be three national educational conventions.

In conclusion, I wish to say that while the horticulturists of California have accomplished wonders, more and greater things will be done by the generation which is to come after us. There is no limit to California's possibilities.

THE POULTRY YARD.

Fattening Turkeys for Christmas.

Mrs. N. Frank Morse of Fullerton, Orange county, who has written two interesting letters for the PACIFIC RURAL PRESS during the last few months, expands her description of fattening turkeys for an Eastern exchange. As her experience is California, we undertake its local circulation:

Fattening should begin from twenty-five to fifteen days before marketing, according to the method used. First see that the fowls have comfortable roosting places—not 1-inch boards nor small round sticks, but boards at least 2 inches wide, placed low. The feet of fowls are not made to cling like the claws of birds, and they must be made comfortable, for comfort and plumpness go hand in hand. The hardier fowls are those that roost out of doors at all times, but if they have been accustomed to roosting indoors no change should be made at this time. One method of fattening is to confine the fowls in small pens, a space of about 40 feet each way for 100 turkeys. If they fret to get out, sacks, canvas or boards may be placed all about the pen from the ground up for about 4 feet. Fowls not accustomed to being penned will usually fret and refuse to eat, thus losing much flesh. Several drinking vessels of ample size should be placed in brackets against the sides of the pen, about 18 inches from the ground, and fresh water furnished twice daily. A very little lime in the drinking water two or three times a week will keep the digestive organs in good order. Feed ample rations three times a day. An hour after feeding remove all soft food remaining, so as to feed nothing but fresh food each time. Turkeys seem to fall an easy prey to digestive trouble, and soured or fermented food is one of the prime causes of this.

Good fattening foods are whole or cracked corn, Egyptian corn, corn meal and bran mash, pumpkin and rolled barley or cracked corn steamed together, and sweet milk to drink. About the quickest results may be obtained by keeping whole corn before them all the time, and feeding the steamed pumpkin and rolled barley three times a day. The first few feeds should be light. Of course, a pile of grit and some charcoal should be placed in the pen where they may have free access to it. By following the above plan, turkeys may be fattened in fourteen to eighteen days.

Another method is to allow the fowls to range while fattening. They may be called up three times a day and fed a generous ration of any of the above foods. In a few days they will quiet down and will range but little. Indeed, they will be underfoot at all hours of the day, expecting to be fed. They should, of course, have free access to fresh water, grit and charcoal. Turkeys will fatten by this method in eighteen to twenty-four days.

I fatten my turkeys by the latter method, and find the flesh and muscles more firm and the turkeys in better condition to market than where the former plan is followed. When a fowl has been accustomed to ranging all its life and is suddenly penned up and stuffed, sickness is often the result, unless in the hands of an expert or one who is willing to give all his time and attention to them. They will get "off their feed" in ten to fifteen days when penned, and unless one is ready to market them he must look out for losses. The loss of one turkey takes the profit from a good many.

The breeding stock should not be allowed to fatten, but may be placed in a pen by themselves while the market fowls are fattening. For breeding, be sure to get a tom not related to the hens, and thus insure strong poults for next year. Leave the line breeding for the fanciers. What we want is good, strong, marketable fowls that do not have to be nursed from the time they are hatched in order to pull them through, and by starting out with hardy parent stock, not related, much trouble and discouragement may be avoided.

HORTICULTURE.

Some Mistakes in Pruning.

TO THE EDITOR:—There may be nothing new to be said upon the subject of pruning, but, as new people are being constantly born into the world, and some of them aspire to become fruit growers, and as, moreover, many others in the far Eastern States, attracted by the seductive literature on California now scattered broadcast throughout the land, and by the "cheap rates" offered by the railroad companies, it is just as necessary as ever to instruct, to advise, and to warn those who would throw in their lot with the ofttimes perplexed grower of California fruits.

California needs at this time intelligent horticulturists. Most of the old teachers of a quarter of a century ago have passed to their reward and there are few to take their places. Many of our orchards are passing into the the hands of newcomers from Minnesota, from Oklahoma, from Alaska or Kansas. These are men of ripe years, of much experience, and who have had many hard knocks. But a bull in a crockery shop would hardly do more damage than would they in a California orchard. Many other orchards are being run by Japanese, Armenians, Slavonians and Portuguese, while the owner has a suite of rooms in a San Francisco hotel.

Tenant farming and growing fruit by men whose ideas and habits were formed long before they ever saw California will tend to largely diminish the output of fruits from this State within the next ten years. The reports of County Horticultural Commissioners are generally optimistic, naturally, as, being more or less political appointees, they want to stand in well with everybody. But careful and expert examination reveals a very unsatisfactory condition generally. On the one hand, growers have not the pride and ambition to excel that they had twenty years ago; and on the other hand they have neither the knowledge nor the willingness to learn.

But, for fear the editor will prune my remarks, I will hasten to mention a few mistakes which are prevalent among orchardists at the present time. The use of the long, two-handled pruning shears is causing the decay and slow death of hundreds of thousands of fruit trees in California to-day. It is a tool which should never be allowed in an orchard. In the vineyard it may be tolerated, and of course is preferred by Japanese who prune at so much per acre. Trees so pruned are full of stubs, snags and dry, decaying ends, where there should be a clean cut at the proper angle so that the wound may heal over. I recently saw trees in an orchard (owned by a Minnesota farmer), pruned at 2½ cents each, and by white men. No ladder was used, but everything that could be reached from the ground with these two-handled abominations was cut off or shortened. Many others, expert woodmen, use an ax when an unusually large branch has to be removed. Perhaps the apricot is abused more than any other tree. Purely as a matter of convenience it has become the custom to prune this tree any time after the crop is gathered, usually about midsummer. While harm may not inevitably result from this practice if resorted to occasionally, as opposed to the theory of horticulture, it cannot fail to work ultimate injury. Buds are forced prematurely during the warm days that occur during late fall and winter, and later on trees die or lose their crop. Apricot trees are very often cut back into old wood, without the least effort at intelligent reasoning. As an apricot grower remarked to me the other day, "What's the difference between the peach and the apricot? Why shouldn't they be pruned the same way?" The spurs on the apricot are rarely shortened—"a mere waste of time." They elongate, bearing clusters of inferior, unmarketable fruit at the ends, and soon die. These dead spurs are left; a "waste of time" again to remove them, with the result that the buds lying dormant at the base fail to start the next season, circulation of sap is impeded and slow death ensues. A "tale of woe," I grant you, but the half has not been told. Neglect, ill-usage, ignorance are tremendously apparent in California orchards.

What is the remedy? Education, by means of a constant, seasonable repetition of the first principles of pruning in the horticultural press; a study by every fruit grower of Wickson's "California Fruits, and How to Grow Them;" a reprint and circulation by the State Horticultural Commission of valuable papers on the subjects which have appeared in reports during the last twenty or thirty years, and forcible presentation of the subject at meetings of the Farmers' Institute and the Grange.

Edenvale. LEONARD COATES.

The Great American Desert.—I.

Written by George J. Bancroft.

A very large part of ten States and three Territories is generally known as the Great American Desert. All that region where the rainfall is less than 15 inches per annum may be considered part of the desert.

The word "desert" is such a harsh one and carries to many hearers an idea of such a hopeless waste that it has been customary to speak of this territory as the "arid regions." I prefer to use the word desert because of its brevity, but it must be understood that I use it very broadly and apply it to that territory which is only just a little too dry to raise ordinary crops without irrigation, as well as to that country where conditions are more severe.

Using the word in this way, the desert is one of the most productive areas in the Union in proportion to its population. About 2,300,000 people have found good homes and profitable employment on the desert up to date and the day of the desert is only just beginning. In this wonderful stretch of country, blessed with the finest climate on earth and with uniformly rich soil, with water sufficient to reclaim a large acreage of it, with mineral deposits surpassing the treasures of Solomon, and with grazing potentialities sufficient to feed the herds of a nation, the desert is one of the most valuable and the least generally appreciated possession of the American people. It is an empire within itself.

I have heard sincere but untraveled men say that the United States must soon be looking abroad for additional territory to meet the growing demands of an increasing and ambitious people, while right here within our borders we have the best field imaginable in which to expend our surplus energies for the next two or three generations. The Steppes of Russia, which not only supply the fatherland with grain, but export 400,000,000 bushels yearly, have a climate more arid than two-thirds the land known as the Great American Desert. Vast areas in China and India, which teem with millions of people, are much the same in general characteristics as that which our census report shows have an average of seven-eighths of a man to the square mile.

Our desert differs from the stereotyped impression of a desert, in that the whole area is broken and and beautified by mountain ranges of all sizes, heights and kinds of contour. Many of these ranges are high enough to receive a very generous precipitation of rain and snow on their summits and some of the most beautiful little garden patches in the world are to be found clustered at the bases of such mountains where the little streams run out upon the thirsty land. Near the main ranges and larger streams there are very large areas under cultivation, as, for instance, the beautiful stretch of irrigated farms extending along the eastern slope of the Rockies and extending down the valleys of the Arkansas and Platte rivers.

The desert-grown fruits and melons are among the best known. The combination of damp soil and dry air gives a crispness to peaches, pears and melons which can not be duplicated elsewhere; moreover, the desert gardener is relieved of the eternal fight against worms, moths and disease which besets him who gardens in less isolated localities. The desert is the natural home of the sugar beet. To produce a high percentage of sugar, an abundance of sunshine is necessary, and to produce a large tonnage per acre, rich damp soil is necessary, while the beets are growing. The irrigated desert supplies these conditions. The desert produced $20,000,000 of sugar last year.

The driest country in the United States is the southwest desert surrounding Death Valley, Cal., and it has 2½ inches of rainfall per annum. From 2½ to 15 inches of precipitation, the land must be irrigated more or less to produce the ordinary crops, but even our driest land is used for grazing, and there are places in Nevada and Utah where the rainfall is only 5½ inches annually, that are so favorable to equine existence that the wild horses are a pest.

The topography of the desert country is admirably adapted to agriculture. It is a country of broad, gentle sloping valleys and picturesque little ranges. The soil of the valleys is deep and rich. The mountains relieve the monotony of the landscape. One can not travel through this vast, arid country in any direction without thinking what a beautiful country it would be if only there were a few more inches of annual rainfall, and one of the tantalizing things about it is that all through the central part of the arid country there is unmistakable evidence that the country was comparatively well watered, and not so many centuries ago either.

To the casual observer, the desert is apt to be uninteresting. The tourist, eager with interest to catch every view from the car window in California, pulls down the shade and reads a novel in Nevada. Yet the desert is as varied in its flora and fauna as any other area of equal size, and in scenic attractions, I think, there are few localities that can surpass it. Certainly, there is nowhere else where such brilliant rock coloring can be seen, and nowhere else where the soft lavender, grays and purples of the desert can be reproduced. I am speaking now of the ordinary every-day sights of the desert, such views as the Colorado canyon, the eastern scarp of the Sierra Nevada, or the view from the Panamint range, where at a glance one may see the lowest national place (Death Valley, 350 feet below sea level) and the highest national place (Mt. Whitney, 14,897 feet above sea level), now recognized as being among the foremost scenic wonders of the world.

Although the flora of the desert presents a gray, barren and uninteresting appearance to the superficial glance, a little closer scrutiny reveals a wonderful variety of species and a great range of utilities. Take the so-called sagebrush country, for instance. There are thirty or forty species of brush which go to make up the gray verdure commonly called sagebrush, and most of them are in no way related to sage at all. Among the commoner varieties may be mentioned the following: Shad scale, which sheep will eat, but which is not very good pasture; white sage, which is the best winter horse feed possible, and which cattle and sheep are also fond of; sheep clover, which, as its name implies, is the finest desert sheep feed; black sage, which is not good for much except that it grows high and strong and is seldom covered by snow; rabbit bush, whose succulent green stalks give nourishment to the jackrabbit when all else is dry and parched, and whose roots contain a gum which is practically the same as the



The Cholla—a Desert Cactus.



The Yucca Palm, Common on the American Desert.

guest South American rubber; greasewood, which makes a good camp fire, and whose roots also contain rubber gum and salt bush, which is an "all around" feed.

As the tourist gazes from the car window he sees a monotonous unchanging sea of grayish green, while the dweller of the desert looking out of the next window sees an ever-shifting panorama, replete with interest to the sheepman or cattleman, horseman or miner, whichever he may be. As a general principle, it may be said that stock feed on the desert is far more abundant than water, and that herein lies the great future of the desert as a grazing country. As wells are sunk and reservoirs built, more and more live stock can be profitably raised. It is not that stock die of thirst on the desert, when the range is overstocked, but they eat all the feed close to water, and then as they must walk farther and farther from grass to water and back again, they suffer from thirst and starvation combined. With frequent wells and windmills I venture to say the present number of stock on large parts of the desert could be increased ten times.

The rubber industry mentioned above gives promise of becoming one of importance. There is a practically unlimited supply of raw material and an ever-increasing market. There is one factory already in operation at Buena Vista, Colo., and several others are planned.

Among interesting flora may be mentioned the beautiful everlasting flowers found in the Mohave Desert, and near Death Valley, and probably many other places. They grow in great profusion after an unusually heavy rain, and have the most beautiful colors imaginable. The accompanying picture of flowers is from the Death Valley country.

On the deserts of southern Idaho and Oregon the desert mahogany reaches its maximum growth. The wood resembles the true mahogany in all essential particulars, except that it has a most unfortunate habit of "checking" during the seasoning process. There is an old man near Wells, Nev., who seems to have learned how to season the wood properly, and he makes most beautiful canes, which he sells for a living. These trees make the best firewood I have ever seen, not excepting the ironwood of the Australian desert. One cord of desert mahogany is equal to a ton of good coal.

Another interesting desert tree is the pinon, which produces the most tasty and wholesome nut that grows. The Piute and Gosiute Indians use these nuts as a staple article of diet. In central Nevada they grow to the size of peanuts and could be gathered by hundreds of tons, yet I have never seen any but the small Mexican nut on the Eastern market.

Many parts of the desert are clothed with a heavy growth of timber, and profitable lumber enterprises flourish; in fact there are 120,000,000 acres of woodland on the desert, of which 75,000,000 acres are valuable for lumbering. I only aim to touch here and there on some matter that arrested my attention in traveling through the desert mines, believing that these same subjects may interest others.

One of the noticeable characteristics of the desert flora is, that north of latitude 37° the flora is practically destitute of thorns, except on the eastern slope of the continental divide, while south of latitude 37° thorny plants are in the majority. In southern Arizona and Sonora it is said that there are 400 different varieties of brush, and 399 have thorns, while the remaining one is poisonous to the touch. I cannot vouch for the figures being exact, but the saying gives an impression of the conditions.

The worst of the thorny plants is the Cholla cactus, which is illustrated in an engraving on the front page. These plants have barbed thorns set so closely as to resemble a thistle going to seed. The knowing little desert rats gather pieces of these cacti in great quantities and place them around their burrows. They have tiny secret trails through the mass, and they know full well that no wildcat will follow them nearer than the edge of their abattis, that no coyote will ever undertake to dig them out. One of the most horrible tortures invented by the Apaches was to roll their naked victims in a bed of chollas (pronounced cho-yas).

In this same southern country are found the palo verde, whose bright green trunk and general appearance seem to indicate an abundance of water, yet they grow in the driest places, where the rainfall is only 2 to 5 inches per annum. Then there is the "niggerhead" cactus, whose outer skin is as water-tight as rubber, but whose inner pulp is almost as juicy as a watermelon. The juice is not very pleasant to the taste nor very wholesome, contrary to the popular story, but it beats going dry a whole lot, and I can imagine that one who was about "all in" with thirst might find it sweet and delicious. Some lives have no doubt been saved by the niggerhead cacti, but as a rule the man who knows enough of the desert to pick out a niggerhead knows enough to find the water holes.

Agricultural Review.

Alameda.

PALMS FOR SEED FARM.—Livermore Herald, Dec. 9: The Cox Seed Co. have received their first shipment of 10,000 young palms and ornamental shrubbery which they are going to plant on the land recently leased from Theodore Winfield. Before the season is finished they will have close to 100,000 young trees of all kinds planted. All of the young stock has been grown by John Vallance at their Oakland nursery, which place has been found totally inadequate to handle their increasing business.

Butte.

PACKING ORANGES.—Oroville Register, Dec. 7: The Butte County Citrus Association is shipping about three carloads of oranges a day, and before New Year's will have finished up the crop in this locality. So far as the returns have come in from the East they are better than they have been for some years past. The oranges are not quite up to the usual size, but they run uniform and are thin skinned. The packing house is jammed to its utmost all the time, and it has taken exceptionally good and active work on the part of the Association to handle the fruit as expeditiously as they have.

Los Angeles.

ORANGES HAVE BEEN DAMAGED.—Los Angeles dispatch to Chronicle, Dec. 12: Reports from several southern counties swept by the gales of last Saturday and Sunday indicate that the damage to the orange crop is considerable, though no accurate estimate of the harm done can be given at this time. W. H. Stewart of the Stewart Fruit Company said to-day: "One reason why it is hard to estimate the damage immediately after a storm of this kind is that the bruises which are inperceptible at present will show up in such a manner as to make culls of a great deal of the fruit two months from now. The orange growing season is about ten days behind as compared with other years.

Nevada.

WINTER WATERMELONS.—Gardnerville special to Sacramento Bee, Dec. 9: Martin Shields, a gardener and rancher in Antelope valley, claims to have perfected a winter variety of watermelons. He has been raising melons for a number of years and by a series of experiments says he has produced a variety that will keep during the winter without rotting. He now has his cellar filled with them and at this time they are sound and have not lost their flavor.

Orange.

TOMATOES.—Fullerton correspondence in Santa Ana Blade, Dec. 8: Fullerton oranges sold in New York recently for $10 a box; the first shipment of Fullerton new crop potatoes sold at $5 a sack; local tomato producers have been selling their product to local concerns at $40 and $50 a ton; poultry men are selling turkeys at 25c a pound and peanut growers are offered fancy prices for the coming crop while cabbage men are figuring on receiving about $15 a ton net this season, and the outlook for the producer was never better than at the present time. Last season one or two independent growers shipped a few tomatoes by express East to be sold in the auction market. They expected to receive $50 a ton, but the product sold for nearly $200 a ton. At present John Hetebrink, Arthur Edwards, J. M. Woodward, Bosworth & Gage, Henry Schulte and Otto des Granges are shipping their tomatoes to Chicago and New York to be sold by the auction houses and the net profits realized are above $100 a ton net to the grower, while if they sold at home they could not expect more than $40 or $50 a ton. Shipments are being made in crates of twenty pounds each, going out by express at a special low rate. The tomatoes are marketed when first showing a ripening color and the present output now is 200 crates a day, and shipments will continue for some time unless the remainder of the crop is caught in a heavy frost.

Riverside.

ORANGE PACKING.—Perris Progress, Dec. 7: The Alessandro packing house will open in a few days, when from seven to ten cars of oranges will be packed and shipped for the Christmas trade. George Smith, who managed the house two years ago, will again have charge. The crop at Moreno this year is estimated by Mr. Smith at about 145 cars, of which probably 125 cars will be packed at Alessandro and the balance hauled to Riverside or Highgrove. Last year 117 cars were packed at Alessandro.

Sacramento.

LEMON GROWING.—Sacramento Union, Dec. 8: Lemon growing near Fair Oaks is becoming one of the leading industries. Many orchards are now coming into bearing. Owing to the fact that the lemon tree thrives on less water and poorer soil than the orange, there are many localities where a special advantage is gained in planting to lemons.

San Bernardino.

ORANGE PACKING. — Rialto correspondence Sun, Dec. 7: Yesterday saw the opening of the fruit packing season in Rialto, the Orange & Lemon Association being the house to get off the first car. The shipment was billed to eastern Pennsylvania. The house will probably put out six or seven cars of Christmas fruit. The other packing houses, with the exception of the Stewart Co., are putting out fruit at as lively a rate as a somewhat inadequate force of packers can accomplish. It begins to look as though there would be serious difficulty in getting enough help this year, considering the enlarged packing facilities and the increase of fruit to be packed.

Sonoma.

POULTRYMEN ROBBED OF EGGS.—Penngrove dispatch to Chronicle, Dec. 12: Considerable complaint is being made by the local poultrymen who ship their eggs to San Francisco on account of their cases of eggs arriving at their destination short. The shortage ranges from one to six dozen a case, and, at the present high price of eggs, makes a considerable item to the shipper. One of the largest poultrymen in this section has been losing eggs in this manner for some time past, and last week, after a thorough investigation, he traced the theft to the driver of a special delivery company in San Francisco, who drove with an express wagon load of eggs up to the rear of a restaurant, where he abstracted a few dozen from each case. The poultrymen are determined to put a stop to the evil and will within a few days take some radical steps.

Stanislaus.

BIG DAIRY FARM ON THE SAN JOAQUIN.—Modesto Herald, Dec. 8: F. D. McClure of Bakersfield and E. L. Foster have purchased 500 acres from Osmun Johnson and 80 acres of the E. W. Brush land adjoining. They have also contracted for the purchase of the M. Moyle ranch of some 550 acres, adjoining the above lands. They will make a dairy and stock ranch of their holdings. A contractor is now on his way here with 40 head of stock, and will at once check 200 acres of uplands and plant alfalfa. Next year a still larger acreage will be similarly treated. The entire upland will be devoted to alfalfa.

Tehama.

WILL RENT HENS TO RANCHMEN.—Red Bluff dispatch to Call, Dec. 12: Plans for the incorporation of a big poultry farm at Corning are about completed. This farm was started a couple of years ago by an experienced poultry man who has made a few thousand dollars by following the poultry business on a small scale near Corning. He arranged to go into the business in a wholesale manner, and last year succeeded in hatching and raising 16,000 thoroughbred White Leghorn fowls on his farm. The hens were kept for laying purposes, while the roosters were sent to market in San Francisco. It is understood that the new corporation is backed by business men who are interested in the upbuilding of the Corning section. They plan to raise thoroughbred chickens on a large scale, at the same time paying attention to sanitary conditions, and making the poultry farm a model for smaller growers to pattern after. The hens will be rented to small landholders of the community on a percentage basis. The eggs will be gathered daily. It is figured that the excess in price will be equivalent to the rental charged for the hens, thereby allowing the farmers about the net market price for the eggs. The promoters contemplate the erection of a cold storage plant, and when the market price falls below twenty cents a dozen, the eggs will be gathered and placed on cold storage to later compete in the winter months with Eastern cold storage eggs. It is expected that the farmers will have over 1,000,000 hens producing eggs in the next few years.

Tulare.

SUGAR BEET GROWING.—Porterville Enterprise, Dec. 8: G. E. Slater of the Pacific Sugar Co., building a factory at Visalia, gives the following facts: The average yield per acre last year throughout the whole United States was 10.47 tons. It is fair to assume that a good farmer in this vicinity will obtain at least twelve tons per acre, some will get as high as twenty or even twenty-five, but we will say the average is twelve tons. Our sugar company at Visalia will pay $4.50 per ton for all beets delivered at the factory; then the farmer receives on an average of $54.50 per acre for his beets, less 25c per ton for freight, the company building and maintaining a loading and weighing station at the depot at their own expense. The following statement from Custafson Bros., Anaheim, Cal., giving expenses and returns from cultivating twenty acres, shows the cost on small tracts to be about $30 per acre. These items include their own service at $1.50 per day. On large tracts the cost does not exceed $20 per acre. Custafson's crop was sold and shipped to the Chino factory:

Gross returns from 20 acres, 436 tons of beets at $4 50 per ton $1,962 00

	20 Acres.	Acre.	
Plowing	$40 00	$2 00	
Harrowing twice	12 00	60	
Seed	30 00	1 50	
Seeding	8 00	40	
Thinning	80 00	4 00	
Cultivating twice	12 00	60	
Weeding	20 00	1 00	
Topping and loading	170 20	8 51	
Digging	40 00	2 00	
Hauling	174 40	8 72	
Total expenses	$586 60	$29 33	$586 60
Net profit			$1,375 40

Net profit per acre	$68 77
Cost of cultivation per acre	29 33
Cost of cultivation per ton of beets	1 34
Yield of beets per acre in ton	21 80

The above yield of beets being rather larger than the average, the expenses will consequently be a little greater than the average, and all was contracted.

BLINDED BY A COW.—Call, Dec. 6: Six weeks ago Wherry Curtiss was a healthy and robust farmer residing near Visalia. To-day he is totally blind and helpless, the result of the swish of a refractory bossy's tail. While engaged in milking one morning Curtiss was struck in the eyes by the switching tail of the cow. Though the pain was intense, the farmer did not think seriously of the occurrence until blood poisoning set in. He lost the sight of one eye and then that of the other.

Yuba.

BIG HOGS. — Marysville dispatch to Sacramento Union, Dec. 11: Hogs are profitable in Yuba county. Indeed, they are more profitable than horses or cattle in some instances. James McDowell of Sicard flat does not raise hogs extensively, but two that were raised by him have just been sold, and he received for the dressed meat $69.12. They dressed 464 and 400 pounds respectively, and were but a year old. The price received was 8 cents a pound.

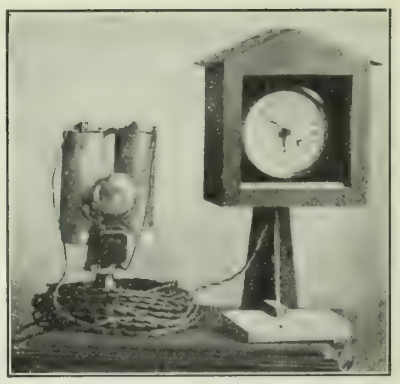
GROWS CARLOAD OF ALMONDS.—Sacramento Union, Dec. 6: Sheridan Harding has over three tons of almonds at Wheatland ready to be shipped to Seattle as soon as a car can be secured. These nuts were raised here on what is called second bottom land. It has been thought that such land could only grow wheat, but Mr. Harding has demonstrated that labor and proper management can turn these big wheat ranches into first-class fruit and nut orchards, and all this has been accomplished without irrigation.

TO TEST FERTILIZER FROM COPPER MINE.—Marysville special to Sacramento Bee: The experiments made last season at the farm of C. F. Boardman, near this city, to test the fertilizer which the Mountain Copper Co. is thinking of placing on the market for the aid of wheat growers, not coming up to expectations, other formulas have been introduced by the company to be tried this season. Yesterday a shipment made up of four different formulas was received at the Boardman farm. The soil in different parts of the tract—a fertile portion of the county—will be enriched with these deposits when plowing and seeding time comes, and results noted. The main object is to develop a fertilizer which will lend strength to the lands of California and at the same time guarantee a better grade of milling wheat than is now the rule. One of the company's chemists accounts for the poor results last year because of the fact that the proper ingredients were not introduced for the soil of this section.

THE Studebaker Farmers' Almanac for 1906 is now ready for distribution. This is the seventh year. It has always been filled with valuable information to farmer folk in addition to the regular calendar and almanac features. An article on the "Evolution of the Vehicle," picturing and describing practically every type of conveyance ever devised, from the crude contrivances of earliest times on down to the present, is a valuable feature of the 1906 book. Studebaker dealers have the almanac for free distribution or it may be had by sending a 2c stamp for postage to the Studebaker Company, South Bend, Indiana.

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AN ORCHARD THERMOMETER that rings the bell in bedroom when temperature reaches danger point.

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Address C. S. C., care of this office.

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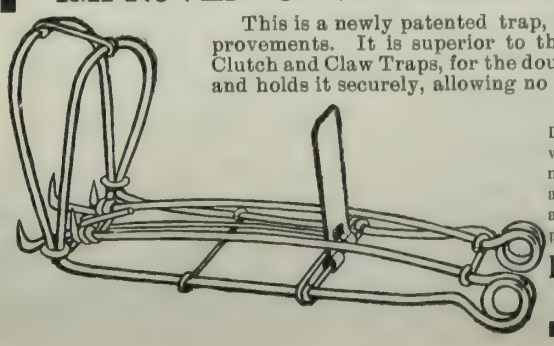
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THE LAWRENCE-WILLIAMS CO., Cleveland, O.

TRAPPED TO STAY TRAPPED.

The trouble with most gopher traps is that they permit the rodent to escape after the trap has been sprung. This not only makes the old style traps worthless, but prevents the recapture of the gopher. The only sure means of destroying gophers is with the

IMPROVED C. V. 2-RING GOPHER TRAP.



This is a newly patented trap, embodying all the latest improvements. It is superior to the Single ring, as well as the Clutch and Claw Traps, for the double ring disables the gopher and holds it securely, allowing no chance for escape.

See that you get the genuine Improved C. V. 2-Ring. Sold everywhere for 25c.; or if your dealer does not have them, send us his name and 25c. for sample trap or $2.50 for a dozen, which we will forward postpaid.

Falls Manufacturing Co.

12 Drumm St., San Francisco.

The Home Circle.

Sunshine.

I know the whole crowd of young fellows,
Who travel the run through our town,
And some are all laughin' and smilin',
While others are robed in a frown—
But the one that does business, I notice,
No matter what may be his line,
Is the man who pours out with each measure
A "bonus" of bubbling sunshine.

I'm not much for readin' nor learnin',
Nor copyin' wisdom from books;
I ain't stuck on new fads nor fashions,
Nor wearin' tight shoes for their looks;
Just jamming your house full of money
May seem to this age a good sign,
But I b'lieve in the old-fashioned doctrine
Of filling your heart with sunshine.

The world has gone mad over gainin'—
The preachers are carpin' at trusts—
The rich ain't content with the centre—
They grab and they fight for the crusts—
The palace is dark, damp and dingy,
Where shadows and ghosts-fears intwine;
While the cot of the poor, humble peasant
Is bright with the rays of sunshine.

Would I barter the light for the darkness?
Would I give up my life for your gold?
Would I sacrifice precept and manhood
At the altars where honors are sold?
No, still let me live free and simple,
And practice His teachings divine,
To fill one sad heart, dark with sorrow,
With the blessings and light of sunshine.

—Kenneth Bruce.

Parting.

If thou dost bid thy friend farewell,
But for one night though that farewell may be,
Press thou his hand in thine.
How canst thou tell how far from thee
Fate or caprice may lead his steps ere that to-morrow come?
Men have been known lightly to turn the corner of a street,
And days have grown to months
And months to lagging years ere they
Have looked in loving eyes again.
Parting at best is underlaid
With tears and pain;
Therefore, lest sudden death should come between,
Or time, or distance, clasp with pressure firm the hand
Of him who goeth forth;
Unseen, Fate goeth too.
Yea, find thou always time to say, some earnest word
Between the idle talk, lest with thee, henceforth,
Night and day, Regret should walk.

—Coventry Patmore.

Breaking the News to Him.

It was a difficult situation. To be sure, Marcella had not actually flirted with Ackley Henderson—she refused to include the verb in her well-bred vocabulary—but then—

Men are so queer—so apt to think that one means things when really one is actuated only by ordinary courtesy and the gayety of the moment and cheerfulness toward the world in general. When a man calls very regularly is that any reason why a girl should consider him in love with her? It would be abominable conceit, Marcella assured herself, indignantly, as she twisted up her hair. Why, dozens of men had called on her in the last five years, and only three or four had asked her to marry them. Each of these men had seemed surprised when she refused. Therefore, why should she worry for fear Ackley Henderson would take it badly and think himself ill-treated when he learned she was engaged to an Eastern man? The wedding was set for June, and Marcella felt that she must break the news. She told herself that she would do it that very evening, and was surprised to find herself turning to ice at the thought.

She stared at her own face sternly in the glass. It was not that she had a lingering fear lest she cared for Ackley—not a bit of it! The man down East had all her heart, but she did like Ackley immensely in a friendly fashion and dreaded his displeasure. Just why should she think he cared for her? She demanded a reply as she fiercely searched for another shell hair-pin. He had never said anything; but, then, words were not always necessary. Only a week ago, when she had been playing at the piano, on turning suddenly she had caught his gaze fixed on her with such open tenderness that the blood had rushed to her face. He had carried it off well by asking in the next breath some irrelevant question, but it had started her to thinking.

Really, it was too bad of Ackley. He was such a reserved, odd person that one never could tell what he was going to do next. He never confided in his friends, though apparently he was free and open.

She searched her memory sharply. Had she ever given him the slightest right to fancy she was especially attracted by him? Of course, she had been interested in his yachts and his theories on the proper way to drive a horse, and his favorite books, but that was only what ordinary politeness called for. If one did not talk to a man about the things in which he was interested what on earth would become of conversation?

Marcella jabbed in the last pin and straightened her side combs, and just then the bell rang. Heaving a long sigh, she went down to greet Ackley Henderson. He was so particularly happy and cheerful to-night that it made her task doubly hard. How should she begin? She could not plunge into the subject abruptly—she wanted to glide into it gracefully and by degrees—but somehow she could not manage the conversation. And all the while Ackley sat beaming joyously at her.

Marcella shivered. She wished she could remember a few times when she had been rude to him—the memory would brace her up—but there was nothing but unremitting and gracious kindness on her part in the hateful past. She wondered if he would tell her what he thought of her when she told him of her engagement, or whether he would take it quietly and go away and brood over it. She didn't know which would be worse

She chattered fluently on everything under the sun, but at last talk ran slow. Silence fell. Marcella felt it was now or never. She leaned forward and fingered the paper cutter lying at her hand and spoke in a low voice. She did not look at him.

"I'm going to tell you something, Ackley," she said. She could feel that he was all attention instantly. "I—perhaps I should have told you—told people some time ago, but I—well, I didn't. I—you've met Bob Van Puyster of New York? I'm going to marry him in June." She ended with a rush.

After an instant she raised her eyes bravely to meet his stricken face. Then she stared in blank amazement, for Ackley Henderson was smiling surprisedly, delightedly.

"Why, I am greatly pleased," he cried, heartily. "Van Puyster is a fine chap. I'm glad to hear it. And I might as well tell you there's a girl down in St. Louis that is going to be Mrs. Henderson next fall—and your profile and hers are identical. Every time I look at you I'm reminded of her, though, of course, you're not alike."

Marcella was speechless. For one mortal hour she had to sit and listen to the praises of another girl sung into her astonished and reluctant ears, and smile as though she liked it. Her own engagement he apparently dismissed from his mind. He was about the farthest from a heart-broken man one would care to see.

Yet when Marcella took down her hair that night she broke three of the shell pins, because she was thinking so hard and indignantly.

Girls, there is no doubt, are queer.—Chicago News.

Keep an Even Temperature.

Much of the discomfort experienced in our winter home life is due to the extremes of temperature found in various parts of the house. Some rooms are kept much too warm; doors might often be left open between rooms, thus communicating, so as to equalize matters. It is poor economy to shock our bodies by passing from 75° in the sitting-room to 60° or less in the passage and dining-room or bathroom.

The floors of many dwellings are never comfortable, and special footwear is desirable to be used on arising. Woolen slippers or overshoes, galoshes, etc., may be worn for this purpose, and will keep the animal heat in the body at this point of contact with the cold, cold world. Remember the first impressions are very lasting, and our bodies are grateful for a little protection and encouragement offered in the morning hours, when the life forces are awakening for their task. A little attention of this kind often determines the atmosphere of the whole day.

In all weathers the sleeping room should be at a lower temperature than the living room, and more fresh air should be allowed to enter. In the very bitterest weather there are often enough cracks in the windows to allow of fairly good ventilation, even though the window be closed. It is specially when double casements and weather strips are used that allowance for air entrance should be made. This applies only to the very cold seasons, when the thermometer shows a temperature of zero or thereabouts.—Popular Health Magazine.

Dangerous Cobwebs.

Many cases of tetanus, or lockjaw, are now appearing in the public prints. Mrs. Frankland tells of lockjaw having been caused by the application of a cobweb to a slight cut.

"The wound was a perfectly clean one, and nothing need have resulted from the obedience to a superstitious prejudice had not the cobwebs unfortunately arrested some local germs, and these, getting across the wound, set up the typical symptoms of lockjaw. That this implication of the cobweb was no idle accusation was subsequently proved by portions of the same web, on being inoculated into animals, inducing in the latter well-defined symptoms of tetanus."

That cobwebs readily catch dust is familiar to every one who has the mortification of seeing them adorn ceilings and corners; that they also arrest bacteria follows as a natural consequence of the presence of dust, and hence those delicate filaments may become veritable bacterial storehouses, more especially as it is usually in the dark and remote corners that they best succeed in eluding the vigilance of the domestic eye, and are also out of reach of the lethal action of sunbeams, and hence their unwelcome lodgers may manage to maintain a very comfortable existence over long periods of time.—New York Times.

Treating Earache.

When a child has earache do not seek to relieve it by pouring teas and medicines into the ear. These are delicate and precious organs and ought not to be tampered with by those not able to treat them understandingly.

The application of heat externally will usually relieve the pain.

At night, which is the usual time for sudden attacks, one may heat a piece of flannel by placing it for a moment around the flue of a lighted lamp. Change as the cloth cools.

When one is accustomed to suffer with this there should be care used and always protect the ears when out of doors in cold and windy weather, as a severe case is likely to end in serious complications.

New Way to Darn.

A woman in Philadelphia has solved the perplexing question of reducing darning to an exact and time-saving science, and is now willing that humanity should be benefited by her discovery.

One day at her work basket she was facing a large pile of undarned stockings. She knew the weary hours of labor that were before her if she did not find some way out of her difficulty, and without any idea of inventing anything, she came across some pieces of bobinet as she was fumbling in her basket. To the masculine eye bobinet looks like a piece of stiff mosquito netting, and the only thing to be done with it is to place it under the hole, draw the threads in and out the netting across each way and the darning is both rapidly accomplished and presents a "neat looking job," as the roof painters say.

Home Remedies.

For Corn.—Bind slice of lemon over sorest part of foot and let remain until dry, then replace with fresh slice. Repeat until well and free from pain. In many instances a cure is effected.

For Fever.—Sponge patient's body with tepid soda water. To a pint of warm water put a teaspoonful of soda. Never sponge a patient if sweating and never allow them to be in a draft. Keep temperature of room cool while patient has fever. Very often sponging can and needs to be done along with physician's care. Sage tea is also good in case of fever, especially with children. This is also good to prevent perspiration after fever is broken.—E. J. Boyd, Davis Co., Ia.

For the Eyes.—When eyes are weak, tired or sore, a good wash is made of one quart good rain water, that has not stood in galvanized vessel, strained into glass jar, to which is added two level tablespoons good table salt, and the slightly beaten white of an egg. Shake well together and strain again, then return to jar and keep in cool place sealed tightly. Warm a little at a time and bathe eyes freely as required. Lemon juice added to this is highly recommended for a felon. If used in time it will invariably effect a cure.

For Cough.—Clear honey and sweet oil warmed together are good to take for loosening a cold, a couple of spoonfuls at a time. The amount of sweet oil should be proportioned according to condition of stomach. Also make a strong tea of hoarhound leaves and sweeten to a syrup or to suit taste. Grease chest with hot sweet oil and apply hot flannels. Lard and turpentine and lard and quinine are good to loosen a cough. If a child too small to take quinine, rub well under arms and across chest and stomach with quinine and lard mixed half and half.

For Cold and Pneumonia.—Hops are a very reliable remedy and can be used in several ways. (1). Make a tea of some good hops and drink a teaspoonful at a time, repeating frequently. (2). Fry out a quantity of hops in very hot fresh lard. Strain through cloth. Grease all over patient's chest and throat, after which apply hot pieces of flannel over chest, repeating as fast as one cools. Continue until cough loosens. (3). Fill square of cheese cloth size of patient's chest with fresh dry hops and sew up. Put in steamer and steam as you would bread until very hot. Place over patient's chest and cover with several thicknesses of well heated dry flannel. Have two squares of hops and change as often as one cools. Be careful not to let clothing on patient get moist. Hops steamed in this way are not apt to dampen clothing, but will steam and warm the lungs nicely.

Domestic Hints.

French Fried Sweet Potatoes.—Prepare the potatoes according to the general rules. Then slice very fine, or cut in cubes or prisms. Dry between cloths. Then fry in a bath of smoking hot fat. Sprinkle with powdered sugar.

Saratoga Chips.—Prepare the potatoes according to the general rules. Cut into very thin slices with a salad cutter. Dry between cloths. Fry in a bath of smoking hot fat. Then sprinkle slightly with salt. They may be served either hot or cold.

Turnips a la Creme.—Prepare the turnips according to the general rule for vegetables. Cut into ½-inch cubes and cook until tender. Drain, and place them in a vegetable dish and marinate with cream sauce, three level tablespoonfuls butter, one tablespoonful flour, one-half teaspoonful salt, one cup milk, sprinkle cayenne. Make like

white sauce. This is enough for two cups turnips.

WALNUT CAKE.—Cream one-half cup butter with one and one-half cup sugar, one-half cup milk, three eggs beaten separately, two cups flour sifted with one and one-half teaspoonful baking powder, one cup walnut meats chopped and dredged with flour. Mix according to general rules. Bake in loaf. Ice with plain boiled frosting.

STUFFED EGGS.—Remove the shell from hard cooked eggs and cut them in two crosswise. Remove the yolks and mash through the strainer. For the yolks of six eggs add two tablespoonfuls finely ground ham or tongue, one tablespoonful butter, one-half teaspoonful salt, dash of cayenne pepper. Mix to a smooth paste and fill the whites with the mixture. Chill and serve on lettuce leaves or with garnish of parsley.

CINNAMON ROLLS.—Use same recipe as for bread sponge, but add one-quarter cup butter, one egg beaten separately, one-half cup sugar. When ready to roll into loaves, roll into rectangular sheets ½-inch thick and spread with butter. Sprinkle over this one tablespoonful sugar and one teaspoonful cinnamon. Roll as jelly cake and cut into slices ½-inch thick. Place in a pan and let rise until they double their bulk. Bake in a moderate oven.

CORN SOUP.—One quart corn pulp, one quart cold water, one quart milk, two tablespoonfuls butter, one tablespoonful flour, slice of onion, two teaspoonfuls salt, one-quarter teaspoonful white pepper. Chop the corn fine, add the water and cook twenty minutes. Heat the milk in a double boiler with the onion. Remove the onion before adding the other ingredients. Make a white sauce of the butter, flour and seasonings, using one cup of the hot milk for liquid. Boil ten minutes and add to the milk. Mash the cooked corn through a coarse sieve and blend into this. Serve hot.

Hints to Housekeepers.

For marks made on painted woodwork by matches, try rubbing first with a slice of lemon, then with whiting, and in a few moments wash with warm soapsuds.

Before broiling a steak give it a dust with salt and pepper, and brush it over with a little good salad oil. A little salt thrown on the coal will often clear the fire if you are in a hurry.

The cloths used in waxing floors or polishing furniture should be kept in a covered crock as long as clean, then, instead of letting them accumulate in closet or storeroom, burn them immediately, since vegetable oils are so liable to spontaneous combustion.

A celebrated oculist recommends in any cases where dirt, lime or sparks get into the eyes that the sufferer have pure olive oil poured in until everything of a hurtful nature is removed. The remedy is quite painless, and never fails to remove all foreign substances.

Care should be taken of children's lunch baskets to keep them sweet and clean, dipping them in hot salt water, then into cold, at least once a month. Dry quickly by the fire or in the sunshine. Use paper napkins instead of linen, and burn them after once using.

The objection to brass or iron beds that draughts are noticeable is overcome by the use of dainty curtains at the head. In hospitals squares of heavy pique, tied by tapes at the corners to the uprights of the bed, are laundered weekly with the other bed linen.

The metal handles of furniture frequently become so tarnished that it is impossible to restore their polish permanently by rubbing, or ordinary means. This may be done, however, by painting them with the gilt, bronze or silver paints that are used in decorating, and which may be purchased at any art shop.

There are many schools and methods extant for cultivating memory, all excellent in certain directions, but there are some things to forget if one would attain happiness. Among others forget your neighbor's faults, the slander heard, the unpleasant peculiarities of friends, personal quarrels and temptations. Obliterate everything disagreeable from yesterday and start out with a clean page for to-day, keeping in memory only those things which are lovely and lovable.

Another modern development is the wooden cooking plate for pies and cakes. The plates are made of wood pulp and water, are porous, light and cheap. No greasing is required and the dough or paste never sticks. The pulp absorbs any superfluous grease, and the use of the plates is therefore sanitary. The plates cost about one cent apiece, and are to be had at several department stores and house furnishing shops.

Many small leaks may be stopped in tinware, at home by the use of a hot iron, lead or solder, and acid. Your druggist will tell you the kind to get. Solder can be bought very cheap at the hardware store. To solder a hole, have the article perfectly clean. With a knife, scrape around the hole. Put a very little acid on the place. Have the iron red hot, hold the solder over the hole and melt off a little with the iron, then smooth around with iron. A little practice will enable one to do as fine a job as the tinner.

Every one has heard of cleaning white furs by rubbing cornmeal over the soiled surface, but here is a variation, taken from Good Housekeeping's "Discoveries": Heat the cornmeal in a pan until it is as hot as the hands can bear it. Put the furs into the hot cornmeal without removing from the stove, and rub through the hands as if soap and water were being used. After a few minutes rubbing, the furs should be shaken out and will be found quite spotless. The same cornmeal can be used several times.

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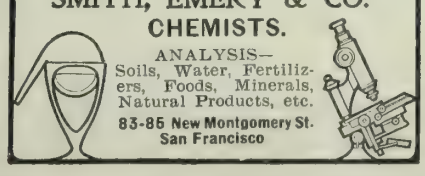
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The Markets.

San Francisco Produce Report.

San Francisco, Dec. 13, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 87¼@ 85⅞	90¼@ 88⅞
Thursday	87½@ 85¾	90 @ 89
Friday	86⅞@ 85¾	89⅜@ 88⅛
Saturday	86½@ 86	89⅛@ 88¼
Monday	86¾@ 86	89½@ 88⅝
Tuesday	87 @ 85¾	89⅛@ 88¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	48¾@45¾	45⅞@45
Thursday	46¾@45⅝	45⅛@45
Friday	47 @46	45⅜@44⅞
Saturday	46 @45¼	45¾@44⅞
Monday	45¼@44⅝	44⅞@44⅜
Tuesday	44⅝@44¼	44½@44⅛

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$1 35 @1 34	$1 42¼@1 41¾
Thursday	1 35 @1 34½	1 41½@1 41⅜
Friday	1 36 @1 36	1 42 @1 41⅜
Saturday	1 36 @1 36	1 42 @1 41⅜
Monday	1 36¼@1 36¼	1 43 @1 42⅛
Tuesday	1 36 @1 35	1 42 @1 41¼

Wheat.

The spot market of this city is steady but quiet. Arrivals from the North have been rather heavy and buyers at this point are all well supplied. The price quoted on No. 1, shipping, is a relative valuation only, this grain being nominal. There has been some trading in futures, and the option market has a firmer tone than last week. Prices have held close to $1.42 for May and $1.36½ for December, the bulk of the trading being in the former. The favorable Government report, issued Dec. 11th, did not have so much of a bearing effect as had been expected, owing to the fact that it was to a large extent counteracted by unfavorable reports from Russia, which would indicate that shipments are falling off in that country. Advices from Chicago are to the effect that receipts have been materially reduced at primary markets, particularly in the Northwest by heavy storms resulting in railroad blockades, limiting the movement. The light marketings have had a tendency to firm prices. The Government report, which was issued Dec. 11, estimates the newly seeded area of winter wheat land at 31,341,000 acres, an increase of 6% over the fall of 1904.

California Milling	$1 42	@1 47½
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 42½@1 43¾	
Northern Bluestem	1 45	@1 47½
Northern Red	1 35	@1 37½

PRICES OF FUTURES.

Tuesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.41@1.41.

Flour.

Superfine, lower grades	$3 05	@3 30
Superfine, good to choice	3 30	@3 55
Country grades, extras	4 05	@4 30
Choice and extra choice	4 30	@4 80
Fancy brands, jobbing	4 80	@5 00
Oregon, Bakers' extra	3 75	@4 25
Washington, Bakers' extra	3 75	@4 40

Barley.

Owing to more liberal receipts of barley than had arrived for some weeks previous, the cash grain is a shade off at this report. The market is quiet on off grades, but fairly active for choice lots of feed. Concerning futures, the market has remained listless during the entire week. Future option is weaker than at last week's report, the price ranging around $1.21 for December, and $1.23½ for May, with but little trading in either.

Brewing	$1 19	@1 22¾
Feed, No. 1 good to choice spot	1 20	@1 23¾
Feed, fair to good	1 16	@1 17½
Chevalier, No. 1 to choice	1 27½@1 35	
Chevalier, common to fair	1 20	@1 27½

Oats.

The oat market is firmer, due to a slight falling off of receipts from the North, where prices are becoming too high to warrant very much being shipped to San Francisco. Black oats and choice reds are scarce and somewhat firmer. In Chicago, the market is said to be a little easier.

White oats	$1 47½@1 55	
Black oats	—	@1 75
Red, choice new	1 35	@1 60
Red, fair	1 25	@1 35

Corn

Arrivals of Western sacked corn have been fairly liberal during the current week. The market has been rather quiet, but prices have been well maintained. Reports from the Middle Western corn centers indicate a similar situation to that prevailing locally, viz., heavier receipts than were anticipated and a consequent softening of the market.

Large White, good to choice	$1 35	@1 37½
Large Yellow	1 32½@1 37½	
Small Yellow	1 50	@1 55
Egyptian White	1 37½@1 40	
Egyptian Brown	1 25	@1 27½

Rye.

There is little change to report in the rye situation. Prices remain as heretofore, $1.52½ being the top quotation, which can be secured for choice, and plenty of inferior rye offering at about $1.47½, with but few takers. The offgrade rye is, for the most part, of the Utah crop, which has been seeking a market here of late.

Good to choice	$1 45	@1 52½

Buckwheat.

The only takers of buckwheat in this market are the millers, none of whom have large stocks on hand, and none of whom are disposed to buy new buckwheat at the prices now being asked. Choice grades are being held at $1.75, but the highest price recorded for any sale in the local market is $1.60. It appears from the size of the offerings that a much smaller amount of buckwheat than usual was raised this year.

Good to choice	1 50	@1 75

Beans.

The general tone of the bean market, as is generally expected near the holiday season, is steady but quiet. The market on small white beans is a shade stronger, owing to somewhat lighter receipts. Pinks remain unchanged as to price, and the present figure is expected to be maintained for some time to come, as not much of the crop has as yet been marketed. The lima bean market continues steady at last week's prices, though trading is very light at these figures. Bayos are quiet and blackeyes firm. Red kidneys are a shade firmer.

Small White, good to choice	$3 00	@3 25
Large White	2 00	@2 60
Pinks	1 75	@2 10
Pinks, damaged	1 00	@1 25
Bayos, good to choice	3 50	@3 65
Red Kidneys	3 50	@3 75
Reds	3 00	@3 10
Limas, good to choice	4 00	@4 25
Black-eye Beans	4 60	@4 75

Dried Peas.

Prices remain unchanged, though a small amount of trading is being done, as holders do not seem disposed to sell at these figures, especially in the face of a rising Eastern market. A considerable portion of the crop has already left first hands, and such as still remains will probably be held for an advance later in the season.

Green Peas, California	$2 25	@2 40
Niles	1 75	@2 00

Hops.

The local hop market is very dull, and the Eastern market is slightly lower. Transactions have been limited during the past two weeks, and such as have been made have been mostly for the purpose of covering deliveries on contracts previously made. The growers are holding prices slightly in advance of the figures which present conditions seem to warrant. It is estimated that there are 85,000 bales still unsold on the Pacific coast, as against 30,000 bales at this time last year. Inferior grades are being neglected entirely, owing to the extremely low price obtainable for choice. Prices, as indicated by last week's sales, should be about as follows: Inferior grades, 6c; good brewing hops, 8@8½c; prime, 9c; prime to choice, 9½@10½c. A few sales of the 1904 crop have been reported at from 5@6c, and at the present writing no encouragement can be offered for the betterment of prices in the near future, as hops are too plentiful and the demand is certainly decreasing, brewers having purchased heavily since the season opened.

Fair to good	6	@—
Good brewing	8	@ 8½
Prime	9	@—
Prime to choice	9½@10½	

Wool.

There is very little change to be recorded in the local wool situation, the market here being largely a reflection of the Eastern market. Few transactions of any importance have been made during the current week, owing to the fact that buyers here are unable to conform to the ideas of growers concerning prices. The inferior wools such as the California fall clip consists of, very largely, are not wanted in the Eastern market at the present time, the demand there being mostly for long wools suitable for worsteds. Since the action of growers in pooling their interests and thereby maintaining prices at whatever level they see fit, jobbers have withdrawn their buyers from the country entirely, and are offering no attempt to handle any of the fall clip,

FALL.

Humboldt and Mendocino	15	@16½
Northern, free	14½@16	
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11

SPRING.

Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

General trade in hay still continues rather dull. Stock hay rules firm, however, as is also the case with strictly fancy lots, of which there is but little offering. The bulk of the shipments are the medium grades, which may be said to determine the market at present. The demand for hay in the outside country points still continues to increase, and undoubtedly will continue to do so. Unless rains come before a very great while, the market here will be affected, even though there is a vast amount of hay stored in the public warehouses throughout the State. Alfalfa continues in very good demand, with the choicer grades higher. Straw is dragging badly.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	7 00	@ 11 50
Stock hay	7 00	@ 8 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

The supply of oilcake meal in the hands of local dealers is very limited, as it is, in fact, even in the hands of millers, who are unable to supply it in any quantity over one or two ton lots. Prices are therefore high and are being firmly held. Bran is declining in price in consequence of heavy receipts from the North. Middlings are in rather short supply, and are firmly held at $29 per ton for choice. Cocoanut cake or meal is in light supply and firmer in price. Other varieties are steady and do not show any appreciable weakness as yet from the rain.

Alfalfa Meal, ₱ ton	$22 00	@ 23 00
Bran, ₱ ton	20 00	@ 21 00
Middlings	27 50	@ 29 00
Shorts, Oregon	21 00	@ 22 00
Barley, Rolled, choice	26 00	@ 27 00
Cornmeal	29 50	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	39 00	@ 40 00
Cocoanut cake or meal	24 00	@ ——

Seeds.

Seeds of all kinds are in somewhat better demand since the recent rains. It is said that the largest crop of mustard seed ever harvested in the Lompoc valley is now being brought forward to this market. Arrivals up to this date, however, have not been of sufficient magnitude to cause any decline in price. Alfalfa seed, and all kinds of grass seeds, are in good demand, and prices are being well maintained. Flaxseed is nominal.

Alfalfa	$13 00	@14 00
Flax	——	@ ——
Mustard, Yellow	3 50	@ 3 75
Mustard, Trieste	4 50	@ 4 75
	Per lb.	
Canary	6½@ 7	
Rape	2½@ 3	
Hemp	3¾@ 4	
Timothy	5½@ 6	

Honey.

The arrivals of honey have been rather meager, and the consequence is that the market is not particularly active though fairly steady. Apiarists seem to be coming to the conclusion that holding off in the marketing of their product will scarcely avail them anything in the way of increased prices. It is evident that the reports of shortages in some bee raising districts have been greatly overdrawn for the purpose of holding up the market, and it now appears according to the laws of supply and demand the prices of 5c for extracted water white and 4c for extracted amber are very liberal figures. White comb honey in single frames is moving freely at from 9c to 10c, and amber comb at from 7c to 8c per pound.

Extracted, Water White	4¾@ 5	
Extracted, White	4½@ 4¾	
Extracted, Light Amber	4 @ 4½	
Extracted, Amber	3½@ 4	
Extracted, Dark Amber	3 @ 3½	
White Comb, 1-frames	9 @10	
Amber Comb	7 @ 8	

Beeswax

Arrivals of wax have been rather light, but sufficient to cover the wants of the trade. For good, choice, light wax 26c to 27c is about the market, but it is probable that an extra fine lot would bring an advance over these quotations.

Good to choice, light ₱ lb	26	@27
Dark	24	@25

Live Stock and Meats.

The market is steady on all kinds of dressed meats, with a slightly weaker feeling in the hog market. Small veal and spring lamb have advanced ½c per pound in price.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5 @ 5½
Beef, 2nd quality	4 @ 4¾
Beef, 3rd quality	3 @ 4
Mutton—ewes, 8@9c; wethers	9½@10
Hogs, hard grain, 150 to 250 lbs	5¾@ 5¾
Hogs, large, hard, over 250 pounds	5¾@—
Hogs, small, fat, under 150 lbs	5¾@—
Veal, large, ₱ lb	6 @ 7½
Veal, small, ₱ lb	8 @ 9
Lamb, spring, ₱ lb	10 @11

Hides, Skins and Tallow.

The hide market has been rather inactive this week, with a tendency to dullness. Tanners are not disposed to pay present prices for the poor quality of hides now coming in, and it is doubtful if hide dealers would buy on the present basis. It is generally expected that when active buying begins again after Jan. 1st it will be on a slightly lower basis.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	30 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

The situation remains unchanged so far as the demand for present consumption is concerned. Little business is being transacted, except such as is occasioned by farmers having secured an inadequate supply earlier in the season. There is a strong market for Calcutta futures, June bags being quoted at 7c to 7½c.

Bean Bags	6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7¾@7¾
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7¾@7¾
Wool Sacks, 4-lb	— @ 36
Wool Sacks, 3¼ lb	— @ 34

Poultry.

The market continues firm and is even a shade stronger than at the last report. Large stock is in particularly active demand, the top quotations being readily received for fancy stock. Young stock is also a shade stronger. Arrivals of turkeys have been very light, and the market is practically nominal. Fancy dressed stock brings from 24c to 25c. Fat geese, ducks and turkeys will be wanted in the local market until December 22nd, by which time all shipments for the Christmas trade should be on the market.

Turkeys, choice Young, ₱ lb	18	@ 20
Turkeys, live gobblers, ₱ lb	18	@ 20
Turkeys, live hens ₱ lb	18	@ 20
Hens, California, ₱ dozen	4 50	@ 5 00
Hens, large	6 00	@ 6 50
Roosters, old	4 50	@ 5 00
Roosters, young (full-grown)	5 50	@ 6 50
Fryers	5 00	@ 5 50
Broilers, large	3 50	@ 4 50
Broilers, small to medium	2 00	@ 3 00
Ducks, old, ₱ dozen	5 00	@ 5 50
Ducks, young, ₱ dozen	5 00	@ 7 00
Geese, ₱ pair	2 00	@ 2 25
Goslings, ₱ pair	2 25	@ 2 50
Pigeons, old, ₱ dozen	1 00	@ 1 25
Pigeons, young	2 00	@ 2 25

Butter.

The butter market is firmer for all grades, the off grades being brought into consumption by the advance in the price of extras. Sales on the San Francisco Dairy Produce Exchange warrant the following prices, which are those paid by commission men on the street.

Creamery, extras, ₱ lb	26	@28
Creamery, firsts	—	@25
Creamery, seconds	21	@23
Dairy, select	20	@25
Dairy, firsts	22	@—
Dairy, seconds	20	@—
California storage	23½@24½	
Mixed Store	—	@20

Cheese.

The market is steady and a good demand, both shipping and local, is maintaining prices at their present level. Fancy Californias and Young Americas are in especially brisk demand.

California, fancy flat, new	13	@14½
California, good to choice	—	@13
California, fair to good	11	@12½
California, "Young Americas"	13	@14
Eastern, new	16	@17

Eggs.

The cold weather of the past few days has advanced prices quite materially, especially for selected ranch eggs. All grades sell readily, however, and the prices depend on quality.

California, select, large, white and fresh	45	@50
California, select, irregular color & size	35	@42
California, good to choice store	30	@35
Eastern firsts	23	@26
Eastern seconds	20	@21

Potatoes.

On fancy stock the market is firm, and even shows an advance, but the cheaper grades are moving slowly and stocks are

having a tendency to accumulate. Some fancy Salinas Burbanks sold in the local market as high as $1.50 during the past week, and this price is now being held as the top asking price. Large arrivals of sweet potatoes have had a tendency to depress the market still further, and the top quotation of $1.50 per cental for choice is now obtained with difficulty.

River Burbanks, ₱ cental	60	@	80
Salinas Burbanks	1 15	@	1 50
Oregon Burbanks	75	@	1 15
Tomales	80	@	90
Sweet Potatoes	1 25	@	1 50

Vegetables.

There is a good, steady demand for good stock, and prices on nearly all varieties have been well maintained. String beans and green peas are in rather light supply and show advances. Onions are also firmer. Oregon onions are now coming into market, and are quoted at $1 30 to $1.40, per cental. All Oregon stock, which has arrived up to this date, is of good quality. Cabbage is becoming very scarce and is now quoted at $1.25 per cental. Other vegetables are steady at appearing quotations.

Beans, String, ₱ lb	10	@	12½
Cabbage, choice garden, ₱ 100 lbs	1 00	@	1 25
Egg Plant, ₱ lb	5	@	7
Garlic, ₱ lb	5	@	6
Onions, Oregon, ₱ ctl	1 30	@	1 40
Onions, New Yellow Danvers, ₱ ctl	1 10	@	1 25
Onions, Australian Brown, ₱ ctl	1 25	@	1 45
Peas, Green, ₱ lb	7	@	10
Peppers, Bell, ₱ lb	5	@	6
Peppers, Green, ₱ lb	4	@	5
Tomatoes, ₱ box or crate	75	@	1 20
Artichokes, ₱ doz	50	@	1 00
Cucumbers, ₱ box	1 00	@	1 50
Carrots, ₱ sack	65	@	75
Hubbard Squash, ₱ ton	—	@	20 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

Receipts of fresh deciduous fruits in the local market continue light, and in several varieties have almost fallen off altogether. Apples continue in liberal supply, and are meeting with a good demand at prices ranging all the way from 35c to $1.25 per box, the lower figure being necessitated by the large amount of under-sized and wormy stock which is arriving. The only grapes now appearing in the market are of the Verdell, Tokay and Muscat varieties, and these are all held at $1.00 to $1.25 per crate. Huckleberries, whortleberries and raspberries are now out of the market entirely, and strawberries are in very light supply, and are being sold only by the basket and the prices ranging from 15c to 20c. A few pears of the Winter Nelis variety are now arriving, and are held at $2.25 and $2.75 per box.

Apples, choice to select, ₱ 50-lb bx	1 00	@	1 25
Apples, good to choice, ₱ 50-lb. box	75	@	1 00
Apples, fair to good, ₱ 40-lb box	35	@	60
Figs, ₱ two layer	85	@	1 00
Grapes, Verdell, crate	1 00	@	1 25
Grapes, Tokay, ₱ crate	1 00	@	1 25
Grapes, Muscat, ₱ crate	1 00	@	1 25
Huckleberries, ₱ lb	—	@	—
Strawberries, large var., ₱ bskt	15	@	20
Whortleberries, ₱ lb	—	@	—
Persimmons, ₱ box	75	@	1 25
Pomegranates, ₱ box	—	@	—
Pears, Winter Nelis	2 25	@	2 75

Dried Fruits.

The dried fruit situation on the coast is very strong statistically—in fact the strongest it has been for many years. The apple market continues to respond to the reports of a crop shortage in the Eastern apple raising States, and the price of 9½c is now being realized for strictly fancy grades. The prune market is also in good condition, and the present outlook with regard to supply and demand would warrant higher prices. Seldom at this time of the year have stocks of prunes been so light in first hands, and seldom has a price of 8½c, choice basis, been realized by packers so early in the season.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice		—@	8
Apples, extra choice to fancy, 50-lb boxes	8½@		9½
Apricots, Royal, good to choice, ₱ lb	7½@		8¼
Apricots, Royal, fancy	8½@		9
Figs, 10-lb box, 1-lb cartons	5½ @62½		
Nectarines, White and Stanwick, ₱ lb	8 @		8½
Nectarines, red, ₱ lb	—@		8
Peaches, unpeeled, good to choice	8¼@		8¾
Peaches, unpeeled, fancy to extra fancy	9 @		9½
Pears, standard, ₱ lb	—@		8½
Pears, choice to fancy	10 @12		
Plums, Black, pitted	5½@		6½
Plums, Red, pitted	7 @		8
Plums, Yellow, pitted	6 @		8
Prunes, Silver, good to fancy	5½@		8½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4½c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c; 80-90s, 2¾@3c; 90-100s, 2½@2¾c; small, 2¼@2½c.

COMMON SUN-DRIED.

Apples, sliced	5	@	5½
Apples, quartered	4¾@		5½
Figs, White, in bulk	2½@		3
Figs, Black	2½@		3

Raisins.

Up to this date there has been no change in the raisin situation. Both Eastern and coast jobbers are refusing to meet the growers' and packers' combination prices, and the result is an almost complete stagnation during what should be the busiest season of the whole year. There is considerable discontent on the growers' side of the combination, and there is talk of holding a mass meeting in Fresno next week for the purpose of voicing a protest against maintaining the price at its present level. Packers outside the association are now pretty well sold out of fancy seeded stock, the bulk of their holdings having brought an average price of 7c for fancy stock. It is said that the Fresno meeting is likely to be the opening wedge for the dissolution of the combination.

CROP OF 1904.

(Fresno delivery except otherwise specified.)

London Layers, 2-crown, 20-lb box	1 40	@	——
London Layers, 3-crown, 20-lb box	1 50	@	——
Fancy Clusters, 4-crown, 20-lb box	2 00	@	——
Dehesas, 20-lb box	2 50	@	——
Imperials, 20-lb box	3 00	@	——
2-Crown Standard loose Muscatel	5¾@		—c
3-Crown Standard	6 @		—c
4-Crown Standard	6½@		—c
Seedless Thompsons, 50-lb boxes	6½@		—c
Seedless Sultanas	5 @		—c
Fancy, 16-oz. Seeded	8¼@		—c
Choice, 16-oz. Seeded	8		c
Fancy, 12-oz. Seeded	6⅝c		
Choice, 12-oz. Seeded	6⅜c		
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ₱ lb	11	@	12
Almonds, Ne Plus Ultra, ₱ lb	11	@	12
Almonds, Nonpareil, ₱ lb	11	@	13
Almonds, Languedoc, ₱ lb	7½@		—
Almonds, Golden State, ₱ lb	7	@	—
Hard Shell, ₱ lb	5	@	—

Citrus Fruits.

The market for citrus fruits has been rather quiet during the current week and prices have weakened somewhat. The oranges which are now coming in show up somewhat better as to quality than heretofore, being much riper and larger in size. Seedlings are somewhat weaker in price, owing to a poor demand, and the accumulation of supplies. Lemons are weaker, the top price of $2.50 for fancy stock being seldom realized. Off grades are moving very slowly at appearing quotations. New grape fruit is also considerably weaker, owing to the fact that it is of rather poor quality and that it must come into competition with old stock, a considerable portion of which is still on hand and which is much riper than the new. Limes are steady at appearing quotations, from $3 to $4 per box.

Oranges, fancy	1 75	@	2 50
Oranges, choice	1 25	@	1 75
Oranges, standard	85	@	1 25
Oranges, Seedlings	80	@	90
Lemons, California, fancy, ₱ box	2 00	@	2 50
Lemons, California, good to choice	1 50	@	2 00
Lemons, California, fair to good	75	@	1 00
Grape Fruit, ₱ box, new	1 25	@	2 00
Limes, ₱ box	3 00	@	4 00

Nuts.

The nut situation remains much the same as last reported. Almonds are in good demand but in large supply, and the present price is only being paid for nuts to supply the immediate demand. Walnuts are now arriving more freely, but the indications are that the crop shortage has not been overestimated. The Orange county peanut crop for the present year will amount to 200 tons—harvested from 200 acres in the neighborhood of Tustin and La Habra. More than 100 acres are controlled by C. E. Utt of Tustin, who has installed a new system of cleaning and sacking the product in his packing house. Prices of the nuts run from 3c to 6c per pound, according to quality. Rain of the last two storms did slight damage.

Peanuts, fair to prime	4½@		5½
Cal. Walnuts, No. 1 soft shell	--	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½

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Assistant Steward ..... N. H. Root, Stockton
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POTTER VALLEY, 115.—M., William Eddie; L., Miss Rose Sides; Sec., W. V. Kilborune. 1st & 3d Sat. 2 P. M., Potter Valley.

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ROSEVILLE, 161.—M., E. A. Junior; L., S. S. Gladney; Sec., Mrs. Jennie Gould. 1st & 3d Sat. 2 P. M., Roseville.

ROWENA, 330.—M., Robt. E. Phelps; L., W. C. Newton; Sec., Mrs. Susie A. Stiles. Every other Sat. eve. 7 P. M., Mt. Hope school house, Zachary.

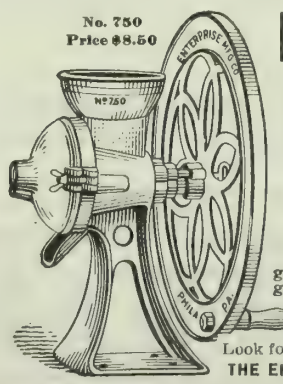
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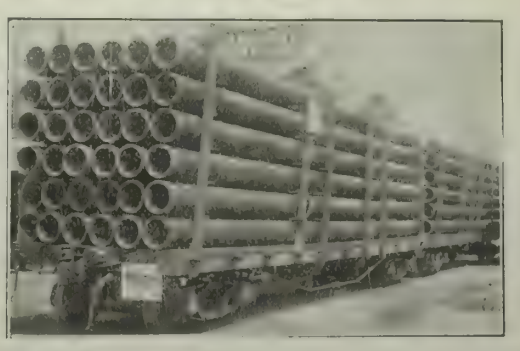
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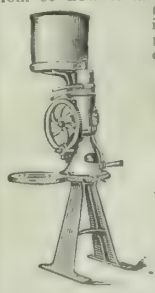
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THE DAIRY.

Australian Rye Grass.

We are continually recommending Australian rye grass for coast and interior situations where the land does not become too dry in the summer for it to maintain life in the root. The following testimony to the grass after ample experience with it is prepared for publication by E. C. Vierra of Moss, Monterey county, and will be found very interesting:

On the California coast Australian rye grass maintains its perennial habit almost indefinitely. The writer has had seventeen years' experience with this grass and has never known it to disappear or even diminish in growth on lowland or damp upland. But it can easily be eradicated by plowing when green, after the seed in the ground is all sprouted. Australian rye grass will endure more overflow than any other grass and still produce a good stand—will live under water for weeks at a time. For an upland pasture it is the best drought resisting grass we know of, and will grow perennially according to the length of time the ground will retain moisture during the dry season. On land that dries up soon after the rains, and remains dry about half of the year, perennial rye grass will begin to disappear after a few years. If the soil is fairly retentive of moisture, rye grass will furnish green pasture the year round. On swamp and slough land and along the edges of hills, or on any land that retains its moisture, there is nothing that will equal it for an evergrowing pasture.

Rye grass is often sown with alfalfa with the idea of making the latter a safer pasture. In production rye grass is excelled only by alfalfa. To secure the best results the first year the seed should be sown with the first rains, or before January, though a good stand may be had if it is sown even as late as February. Cold weather will not affect it. In preparing the soil it need not be plowed very deeply, after which a good harrowing is best for an even distribution of the seed. The seed can be sown broadcast by hand or with a broadcast seed sower, then harrowed over; or it can be drilled in with an ordinary grain drill to a depth not to exceed 2 or 3 inches. If a rain is expected the seed need not be covered at all. The rain will attend to that, and just as good a stand will be had. It will stand grazing as soon as the land is firm enough to bear stock on it. From fifty to eighty pounds of seed will produce good results. Where it is not desirable to plow, a pasture can be improved by scattering the seed over the ground before a rain, or any time during the rainy season.

As a crop for reclaimed salt marsh land, Australian rye grass stands first on the list. Where rye grass will not grow, neither barley nor any other plant of value will flourish, but success has been had with rye grass on land too strongly impregnated with salt to even sprout barley.

On unirrigated land one and sometimes two cuttings of hay may be made in one season. With irrigation, as many as five cuttings have been made. For hay it should be cut in the early stage of the blossom. April is the usual time. Rye grass varies in height according to conditions of moisture and soil, from 2 to 5 feet being the usual growth. The hay crop ranges from one to three tons to the acre.

The question has often been asked, "What stock relish it and do best on it?" All farm stock take kindly to it as a forage plant. As hay for young calves, there is nothing that will equal it. Milch cows prefer it to any other hay, and it has been found to equal anything excepting alfalfa. Some farmers feed it exclusively to their horses, but as a rule horses prefer rye grass as a pasture.

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the Pacific Rural Press by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

COWS.

Chloe Canary Mercedes, Chloe Mechthilde De Kol 2d, Inka Canary Mercedes, Josephine Canary Mercedes, Kaan Canary Mercedes, Kaan Mechthilde Canary, Mazie Longfield; John B. Irwin, A. W. Foster, San Francisco.

BULLS.

Dora Thorn, Sir Josephine, J. H. Williams, J. M. Slinkard, Tulare.
Hengerveld Concordia de Kol, John B. Irwin, A. W. Foster, San Francisco
Sir Piebe De Kol Inka, J. H. Williams, W. D. Chaffee, Portersville.
Butter King, Charles D. Pierce, J. F. Rouch, Kingsburg.
Fidessa Korndyke of Riverside, Charles D. Pierce, A. W. Foster, San Rafael.
Linda Vista, H. P. Mohr, Leo Lynch, San Ramon.
Manor De Kol Belle 2d's Paul, Charles D. Pierce, A. W. Foster, San Rafael.
Sir Aaggie of Los Banos, Frank W. Arnold, Leo Lynch, San Ramon.

Dietz Lanterns

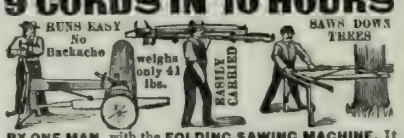
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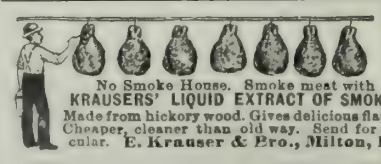
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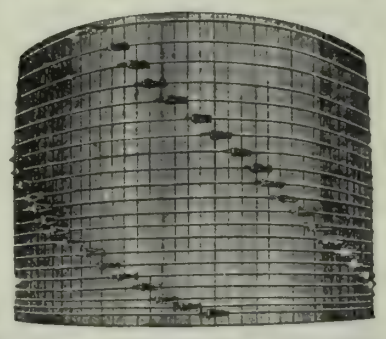
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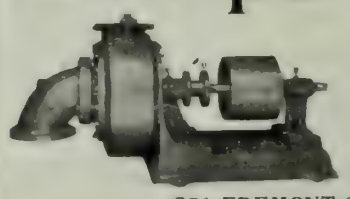


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THE IRRIGATOR.

Irrigation and Drainage Investigations, 1904.

The annual report for 1904 of the irrigation and drainage investigations of the United States Department of Agriculture will soon be issued as Office of Experiment Stations Bulletin 158. This contains a review of the irrigation work of the year, a report of the drainage investigations for the year, and a number of reports covering local investigations.

A leading line of work during the past year has been a study of the possibilities of pumping water for irrigation where a supply from streams is not available or is hard to get. This included laboratory tests of types of pumps largely used for irrigation; field tests of pumps and engines in use for irrigation; records of fuel consumption of pumps of different types; statements of cost of pumping with different kinds of fuel; and general descriptions of the pumping plants in use. The reports cover the Santa Clara valley in California; the New Mexico experiment station; the State of Texas; the rice districts of Louisiana; and the States of Colorado, Nebraska and Kansas. In addition to the detailed information regarding pumping, these reports contain a great deal of information on irrigation practice and crop returns in the localities studied.

The local reports contain information as to irrigation practice, duty of water, and methods of administration.

The drainage investigations include experiments in draining seeped and alkali lands in the arid region; the drainage of bottom lands in the Missouri valley; the protection of bottom lands along the Mississippi, Ohio, Illinois and Wabash rivers from overflow; and the drainage of farm lands. The report gives detailed information regarding all these lines of drainage work.

Only a very limited edition of the complete report has been printed. For general distribution, therefore, separates have been reprinted as follows:

Separate No. 1. Review of the Irrigation Work of the Year 1904.

Separate No. 2. Irrigation in Santa Clara Valley, California; Mechanical Tests of Pumping Plants Used for Irrigation.

Separate No. 3. The Distribution and Use of Water in Modesto and Turlock Irrigation Districts, California; Relation of Irrigation to Yield, Size, Quality and Commercial Suitability of Fruits; Irrigation Conditions in Imperial Valley, California.

Separate No. 4. Irrigation in Klamath County, Oregon; Irrigation Investigations in the Yakima Valley, Washington, 1904; Irrigation Conditions in Raft River Water District, Idaho, 1904.

Separate No. 5. Irrigation Investigations at New Mexico Experiment Station, Mesilla Park, 1904; Irrigation Investigations in Western Texas; Pumping Plants in Texas.

Separate No. 6. Irrigation in Southern Texas.

Separate No. 7. Rice Irrigation in Louisiana and Texas in 1903 and 1904; Rice Irrigation on the Prairie Land of Arkansas.

Separate No. 8. Irrigation Experiments at Fort Hays, Kansas, 1903 and 1904; Irrigation near Garden City, Kansas, 1904; Pumping Plants in Colorado, Nebraska and Kansas; Irrigation near Rocky Ford, Colorado, 1904; The Irrigation and Drainage of Cranberry Marshes in Wisconsin.

Separate No. 9. Report of Drainage Investigations, 1904.

Application should be made (stating both number of bulletin and number of separate desired) to the Director of the Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.

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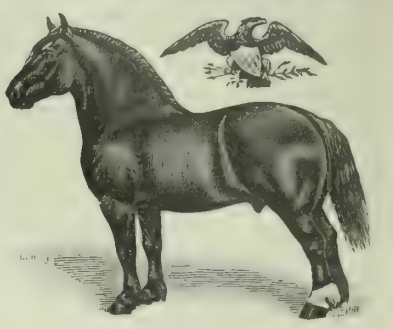
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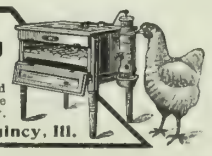
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THE SWINE YARD.

Curing Hams on the Farm.

According to the directions of the Bureau of Animal Industry, when the meat is cooled rub each piece with salt and allow it to drain over night. Then pack it in a barrel with the hams and shoulders in the bottom, using the strips of bacon to fill in between or to put on top. Weigh out for each one hundred pounds of meat eight pounds of salt, two pounds of brown sugar and two ounces of saltpeter. Dissolve all in four gallons of water, and cover the meat with the brine. For summer use it will be safe to boil the brine before using. In that case it should be thoroughly cooled before it is used. For winter curing it is not necessary to boil the brine. Bacon strips should remain in this brine four to six weeks, hams six to eight weeks. This is a standard recipe, and has given the best of satisfaction. Hams and bacon cured in the spring will keep right through the summer after they are smoked. The meat will be sweet and palatable if it is properly smoked, and the flavor will be good. Pickled and cured meats are smoked to aid in their preservation and to give flavor and palatability. The creosote formed by the combustion of the wood closes the pores, to some extent excluding the air and is objectionable to insects.

The smokehouse should be 8 or 10 feet high to give the best results and of a size suited to the amount of meat likely to be smoked. One 6 by 8 feet will be large enough for ordinary farm use. Ample ventilation should be provided to carry off the warm air in order to prevent over-heating the meat. Small openings under the eaves or a chimney in the roof will be sufficient if arranged so as to be easily controlled. A fire-pot outside of the house proper, with a flue through which the smoke may be conducted to the meat chamber, gives the best conditions for smoking. When this cannot well be arranged a fire may be built on the floor of the house and the meat shielded by a sheet of metal. Where the meat can be hung 6 or 7 feet above the fire this precaution need not be taken. The construction should be such as to allow the smoke to pass up freely over the meat and out of the house, though rapid circulation is at the expense of fuel.

Brick or stone houses are the best, though the first cost is greater than if they are built of lumber. Large dry goods boxes and even barrels may be made to serve as smokehouses, where only small amounts of meat are to be smoked. The care of meat in such substitutes is so much more difficult and the results are so much less satisfactory that a permanent place should be provided if possible. The best fuel for smoking meats is green hickory or maplewood, smothered with sawdust of the same material. Hard wood of any kind is preferable to soft wood. Resinous woods should never be used, as they are likely to impart bad flavors to the product. Corncobs are the best substitute and may be used if desired. Soft wood and corncobs give off large amounts of carbon in burning, and this is deposited on the meat, making it dark in color and rank flavored. Juniper berries and fragrant woods are sometimes added to the fire to flavor the meat.

Meat that is to be smoked should be removed from the brine two or three days before being put in the smokehouse. If it has been cured in a strong brine it will be best to soak the pieces in cold water over night to prevent a crust of salt from forming on the outside when drained. Washing the meat in tepid water and scrubbing clean with a brush is a good practice. The pieces should then be hung up to drain for a day or two. When drained they may be hung in the house. All should be suspended below the ventilators and should hang so that no two pieces come in contact, as this would prevent uniform smoking.

A slow fire may then be started, warming up the meat gradually. During the winter months in cold climates it is best to keep the fire going continually until the smoking is complete, holding the temperature at about the same point. If the fire is allowed to die down the meat becomes cold and the smoke does not penetrate readily. This results in heavy smoke on the outside and very little on the inner portions of the meat.

FORESTRY.

Purchase of Timber From Forest Reserves.

The increased demand for the purchase of timber from the forest reserves has called for detailed working plans for the more important timbered areas within them. In order to avoid delay without jeopardizing the future welfare of the forest, and that these working plans may be well considered, they are being made as rapidly as possible for those forest areas from which the sale of timber is probable in the near future. In many cases they are made before the actual application for purchase is received.

Those who purchase timber from the Government are required to observe Forest Service regulations in logging, which guard against waste and provide for the reproduction of the forest. Considerable variety exists in the character and requirements of the forests in any one reserve, so that each working plan must be based on a close study of local conditions.

When setting about the preparation of one of these plans the first question is, What areas in the reserve are adapted to the same scheme of management? After these areas have been selected they are thoroughly studied from every aspect.

The location of the timber is noted and a rough estimate is made of its amount. The nthe character and condition of the stand are carefully determined. Its age, overripeness, injury from fire or insects, the possibility of improving it by logging, and the kind and amount of young growth, are principal points, all of which must be taken into consideration in settling whether it is advisable or inadvisable to cut.

The question of markets and the logging facilities are also taken into consideration, as well as the present local demand for timber, the probable future demand, and the kind of timber required. In connection with these problems attention must be given to the nature of the country, the accessibility of the timber, and the existing roads and drivable streams, because the actual value of the timber is in large measure dependent upon the ease and economy of its removal.

Reproduction, by which alone the forest can maintain itself, is essential where logging is to be done. For this reason the reproductive capacity of the forest is noted with careful detail, and the effect which fire and grazing may have upon it becomes a question of the first importance.

The data, therefore, which the working-plan study has gathered form the basis of the terms of the contract in agreement with which the purchaser of Government timber removes the timber which he has purchased. These terms include the diameter limit below which the timber may not be cut, the number of seed trees of various species which must be left to reseed the ground, the maximum height at which the stumps may be cut, and the diameter to which the tops must be utilized, and other stipulations insuring clear, conservative logging. Especially, also, they provide for the disposition of the slash, so that the forest floor may be safely cleaned of inflammable material, on which forest fires might feed.

The restrictions imposed by the Forest Service upon timber purchasers are meeting with the intelligent approval of all who are performing logging operations under them. It is more and more clearly understood that they are necessary for the permanent good of the forest, that they are of a purely practical stamp, and that their observance means the continued productivity of the forest and, therefore, the husbanding of the timber supply and all that depends upon it.

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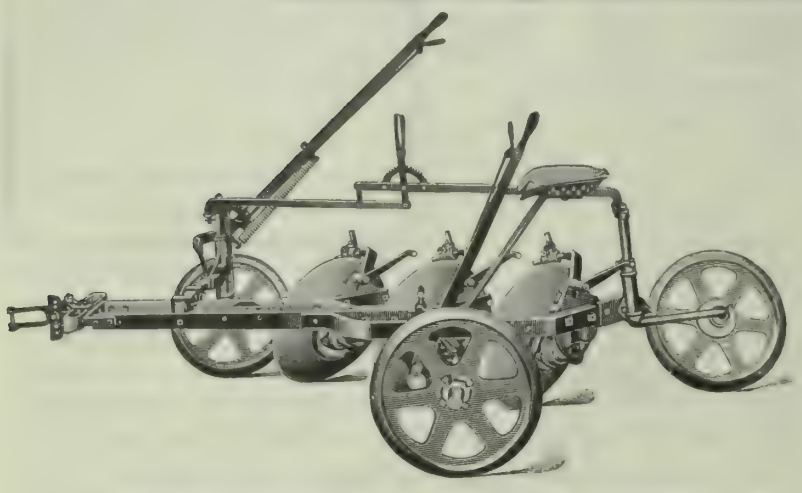
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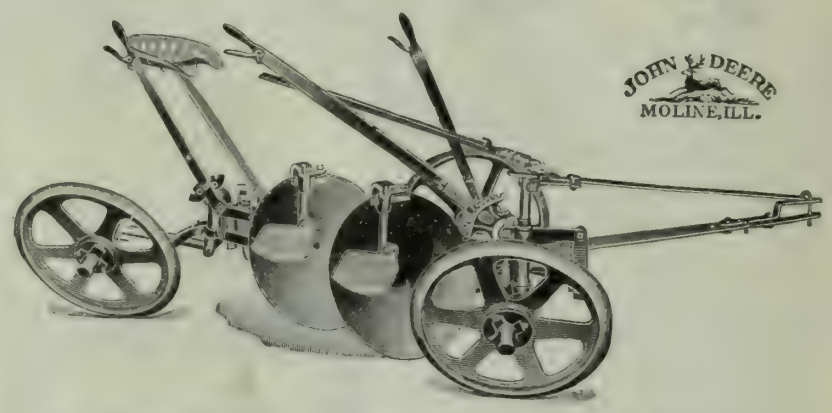
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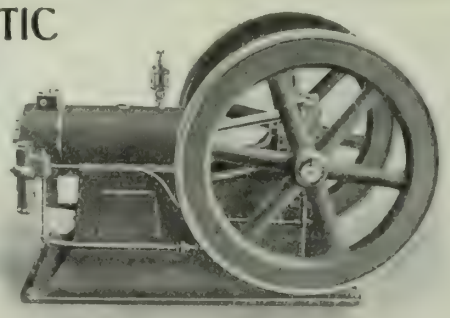
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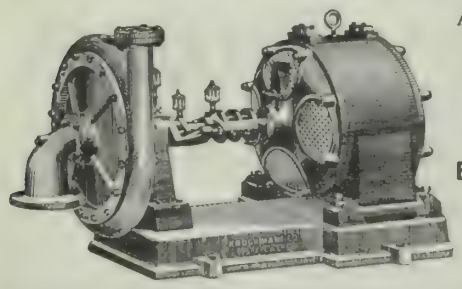
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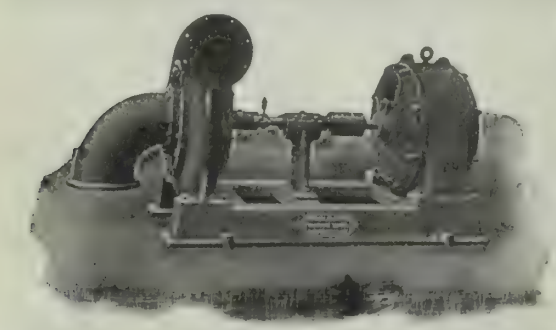


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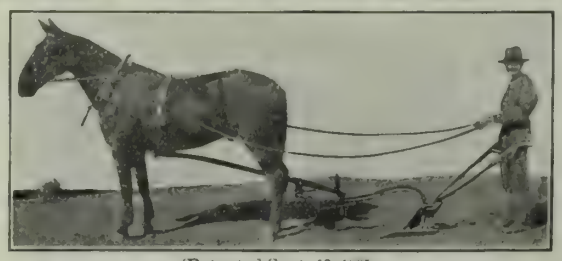
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THE
PACIFIC RURAL PRESS
AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 26. SAN FRANCISCO, SATURDAY, DECEMBER 23, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Orchard Canning.

The idea of combining fruit growing and fruit canning was conceived early in the development of our fruit industries and soon after was abandoned, because it appeared impracticable for a grower to add the problems of manufacturing to those of producing. It was soon found that the grower could not, as a rule, command the knowledge and capital to buy materials as cheaply, use them as economically and push the product as successfully as the commercial canners could perform these several feats. For this reason, though small canning plants were much discussed and in some cases set in operation, they did not come to stay. It must be claimed, however, that the growers' interest in the undertaking did achieve the establishment of a number of small canneries in different parts of the State which have since grown into large factors in the canning industry, generally through the efforts and investments of others than those who organized them. As we remarked some months ago, however, there is one large establishment in California which is a demonstration of the feasibility of combining under one management the growing, canning and drying of fruit on a large scale. The late J. H. Flickinger of San Jose believed it possible, and proceeded to realize his conception, and his reward was to see the demonstration of his idea in a horticultural and commercial success which has itself become his enduring monument. Upon his lamented death a few years ago, the J. H. Flickinger Company was organized, and the business which he established has been continued and expanded as he intended that it should be by Mr. L. F. Graham as manager and associates.



Grading and Selecting Apricots at the Flickinger Cannery, San Jose.

The foundation principle upon which the effort rests is that fruit, to reach its highest degree of excellence, must be allowed to ripen on the tree; and then to retain its rich, luscious flavor, must be processed almost immediately. To attain this end the company planted its own orchards, covering between six and seven hundred acres with the choicest variety of fruit trees, and established its canning and drying plant in the very midst of these trees.

After the fruit has grown to maturity, skilled men are sent into the orchard to select from each tree only such fruit as has reached that highly colored, rich, juicy, luscious condition. This is done each day during the season until all has been picked in just exactly the right degree of ripeness. After the fruit is picked it is immediately taken to the cannery in wagons having the most delicate springs, and over roads that are as smooth as a floor, carefully watered and free from dust. After the fruit is weighed into the cannery it is carefully and skillfully graded, selecting only such as reach a high standard, and sending the rest to the drying ground to be dried in the sun.

The pictures on this page give glimpses of the operations in the cannery. The careful grading for canning sizes, the culling out of blemished or inferior specimens, the peeling, cutting, pitting and packing in the cans, which are preliminary stages in the canning operation, are all indicated in the views. Another impression is also given and that is the employment of high-class, intelligent labor, which is one of the most important contributions of the fruit interests to the prosperity of the State.



Peeling, Pitting and Filling Cans with Apricots for Processing.

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SAN FRANCISCO, DECEMBER 23, 1905.

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The Week.

Refreshing rains have fallen over a wide area which greatly needed moistening, and the start of grass will soon turn the sere to the verdant, which will beautify the landscape, nourish the stock, and make the farmer active to catch up with the late season and hold the advantage from this time onward. Though the visitation is showery rather than stormy, there is plenty of time for the latter phase to be assumed. On the whole, it is probably better for growth to start rather late than to begin early and struggle through a December and January drouth. What starts now should go through all right until the late winter and spring rains set the producing pace for the season. That's the way it looks this year, and it may be the best we ever had.

We had a long run through the San Joaquin valley last week over about 500 miles of rail and 300 of automobile tires, and the experience was delightful throughout. It was gratifying to get inside views of many localities and to note how keen is the spirit of progress and development. Every valley town we touched was awake with enterprise. Electric lines are racing across rich open stretches of distance and values of agricultural lands are notably advancing. New homemakers are abundant and the old town residents who have sat a few decades and prophesied a crash in southern California seem to have concluded that the southern way is the way to advance, and are reaching out for land instead of holding on to idle money. There are also a great many southern California men in the valley showing the old residents how to do it, and, on the whole, the valley is keen on the scent of progress.

We expected to print in this issue the full programme of the State Farmers' Institute, which will open on Tuesday afternoon, December 26, at the State University in Berkeley, but we find it too weighty for our space. It has been prepared with great care, and it is perfectly safe to say that an agricultural meeting in California never drew so deeply and widely upon men distinguished for achievements in agricultural education and science. The list is full of distinguished Californians known to our readers, and we pass them over to mention particularly the contributions of those who have crossed the continent to take part in the meetings. The following are their subjects and their names:

"Why the Friends of Agricultural Progress Believe That Agriculture Should Be Taught in the Public Schools," A. C. True, Director Office of Experiment Stations, United States Department of Agriculture, Washington, D. C.

"Experiments in Agricultural Education in This and Other Countries, What They Should Teach Us," L. D. Harvey, Superintendent Stout Training Schools, Menomonie, Wis.

"A System of Agricultural Education for California—Elementary, Secondary, University," A. C. True, Washington, D. C.

In addition to these pedagogical propositions there will be addresses upon many different phases of California agriculture. Those who attend the meetings in Berkeley during the four days following Christmas have also opportunity to choose from the programmes of all the sections of the California Teachers' Association which is expected to fill all available auditoriums in the University city. The railways make a reduced rate to all who attend and take receipts for full fare at the starting point. We hope California agriculturists will appear in full force.

Farmers will probably be pleased to see that their industry promotes soundness of mind and body, even if they have to get the testimony through the insane asylums. The Secretary of the California State Board of Examiners, Mr. Pillsbury, recently made a report of his systematic inspection of hospitals and asylums in the East, and reports of the superintendents of the State hospitals were also read. Farm and garden work was recommended for patients as conducive to recovery. As long as the experts recommend farm work for lunatics and not lunatics for farm work, we presume there will be no complaint. The trouble has been that all sorts of imbeciles have been promoted by various doctrinaires as likely to succeed in farming, as though farming was not a business calling for the fullest powers of mind and body. We have always protested against that notion.

There comes assurance through the visit of Mr. W. A. Beard to Washington that California will receive new attention from the leading departments of science and industry of the general Government. What is particularly desirable is that the Reclamation Service shall take up one part of the irrigation of the Sacramento valley to show that the whole is desirable. The word "unit" is used by the engineers to indicate a certain part of the plan of irrigating the valley lands. They point out that the work cannot be done all at once, but that the undertaking must be divided into "units," and when the "units" are all disposed of the work will be completed. Mr. Beard met Secretary of the Interior Hitchcock and Director Walcott of the Geological Survey. The conference lasted an hour and was most satisfactory. Sacramento valley people have investigated the condition of the reclamation fund, and they believe Secretary Hitchcock is amply justified in allotting the money required to build their system.

The rebate evil in fruit shipping is still receiving most active opposition. Although it is not possible to say just where these rebates go, and apparently some of the most active reformers have had their share of them, it seems to be clear that they are still paid. The Interstate Commerce Commission, in its report to Congress this week, says that not only have various devices for evading the Elkins law been brought into use, but the actual payment of rebates as such has here and there been resumed. Instances of this kind have been established by convincing proof on which prosecutions have been commenced and are now pending. California representatives at Washington seem to be awake to the local importance of the issue. In response to resolutions adopted by the Santa Ana Merchants' Association and forwarded to the State representatives at Washington, Senator Perkins says: "I am in full sympathy with the views expressed by President Roosevelt in his last message to Congress. I am also in favor of passing the most stringent laws against the railroad companies giving special rebates or privileges to shippers. In other words, I believe all should be placed on an equality when shipping in carload lots. I also favor the enlargement of the Interstate Commerce Commission so that the West, and California especially, may be represented upon that commission. I hope that Congress will agree upon a bill and enact it into a law that has the approval of the President and is in accordance with the wishes of the people of the country, and especially of California."

QUERIES AND REPLIES.

Spots on Apples.

To the Editor:—I send two apples with different kinds of spots on them. Will you kindly explain cause and remedy?—Grower, Santa Barbara.

The apples showing the raised, brownish spots were injured by some insect, probably when it was very small, and these thickened spots are merely an effort of the fruit to heal the injury. As it is impossible to tell when the injury was done, or exactly by what it was done, no remedy cannot be suggested.

The other apple, which has injury under the skin, is affected by interior brownish spots in the flesh. No definite cause for this trouble has yet been assigned. There has been no active organism found in it. It seems to be a wasting of the tissue and consequent discoloration without discernible cause. The probability is that this trouble usually appears in apples which are grown under trying circumstances; that the tree for some cause was not able to fully supply the growing fruit with sap and consequently some parts become atrophied. This conclusion is reached partly by the fact that the same apples grown to good size on trees well suited for soil and moisture do not exhibit the same defects and until the matter can be more fully demonstrated this conjecture must be accepted as an explanation.

Fertilizers for Asparagus.

To the Editor:—I send a cigar box filled with earth taken from my asparagus field. I think it needs fertilizing. Please examine earth and write me what fertilizing material you would recommend. Grower, Santa Clara county.

The growth of the plant furnishes the best evidence as to whether the soil needs fertilization or not. If your yield is less and your asparagus shoots smaller than formerly, the plant is trying to tell you that it needs more food. Nothing is better than common stable manure applied at this time of the year to the surface and worked in with the subsequent tillage. If you desire to apply commercial fertilizers, the following can be recommended on the basis of Eastern experience: 200 pounds nitrate of soda, 300 pounds dissolved bone, 100 pounds muriate or sulphate of potash. This is the quantity to be applied per acre. Other substances containing equivalent amounts of different ingredients may be substituted, as dealers in fertilizers will advise you, so long as the proper percentages of the desirable substances, nitrogen, phosphoric acid and potash are provided.

Nitro Culture for Alfalfa.

To the Editor:—Will you kindly explain to me what is meant by nitro culture treatment as applied to seeds? An Indiana farmer subjected some alfalfa seed to this treatment prior to sowing same, and on that account claims to have been successful in obtaining a stand where his neighbors had failed. I would like to try the treatment with some alfalfa this spring if you will kindly explain to me how to proceed. My soil is about 20 inches deep, with a yellow clay subsoil, and is known as sandy clay soil. It bakes if not worked or when worked too wet. Would a heavy coating of sheep manure—say about 2 inches deep—be beneficial for alfalfa if turned under and mixed with the soil? Tree and vine roots find their way through this yellow clay.—Farmer, Solano county.

The treatment consists in introducing bacteria which will grow on the roots and have the power of taking nitrogen from the atmosphere. The distribution of nitro cultures is now made through the regular seed trade, and any quantity can be obtained from San Francisco seedsmen. The University Experiment Station is offering to furnish this year to each applicant a small amount of alfalfa seed which has been inoculated, which you can try in connection with the common seed which has not been thus treated, and see if you derive any benefit from the treated seed. Such a coating of sheep manure, as you propose, would be too heavy an application. It would be well to try a small amount, say not over one-quarter as much as you propose, and make other light applications later if the crop seems to require it.

Shy Royal Ann.

To the Editor:—Will you kindly send me any information you have with regard to making cherries bear fruit? I have a fine block of Royal Anns, but they do not bear the fruit, though the trees are healthy looking and they are well cared for in every

way. We are within 2 miles of the "Willows," where they bear abundantly. Is the Bing cherry a good one to associate them with?—GROWER, Campbell.

Sometimes new cherry trees postpone bearing for a number of years, because they are growing vigorously. This, of course, is most likely to happen in deep, rich land with plenty of moisture. The Royal Ann, however, has a habit of shy bearing when growing in blocks by itself, and for this, perhaps, association with other varieties is necessary for pollination and better bearing is induced by it. The Black Tartarian and the Bing are effective for this purpose.

Walnut Growing.

TO THE EDITOR:—I read with interest everything that your paper has in it on the walnut. I notice you recommend planting the ordinary black walnut, and then bud with the English walnut. May I ask what is the special benefit of so doing? Will it make a hardier tree, or will it bear earlier? There must be some decided advantage in so doing or it would not be recommended. Nurserymen in this State are advertising walnut trees raised from the second generation trees, when the fact is they are only nuts taken from local trees in their vicinity, of which there are few bearing ones. Another nurseryman claims to have produced a walnut tree that will stand 15° below zero. That is the kind of a tree we want. We are apt to get a cold spell once in five or ten years and want a tree that can stand the change. What nuts are produced in this State are large and fine nuts. Another nurseryman claims that there are only two nurseries in the United States that understand grafting the walnut successfully. Our soil is a very deep, fine-grained, volcanic ash, well drained, and we have unlimited water until July 1st. Will the walnut stand ninety days without being irrigated if the top soil is kept thoroughly stirred? We can give the ground plenty of water in September again. It raises a thirty to forty bushel crop of wheat every other year, when it has been summerfallowed.—READER, Walla Walla, Wash.

The California black walnut root is hardier against both drouth and standing water than the English walnut seedling root. Budding on any root will bring earlier bearing than the average seedling if the scion is taken from a bearing tree. Some of the French and other improved varieties bear from the seed much sooner than the common seedling. No doubt there are many using the term "second generation" without much reason except that they are themselves a second generation from Ananias. We do not know anything much about below zero walnuts in California, except that if the temperature is regularly cold enough to retain dormancy the tree will go under zero all right. It is not the extreme low point that hurts; it is the low point following high temperature that starts the sap. The walnut is harder to graft than common fruit trees, but there are hundreds of people who can do it successfully. Whether you can carry your walnuts through ninety days of drouth by cultivation depends upon how much moisture there is in the soil. Merely conserving moisture by cultivation will not work if there is too little to start with or the soil loses too much by leaching out. You cannot make any rule for it; the tree will tell you all about it as it gets large.

Resistant Vines.

TO THE EDITOR:—I intend setting out four acres to Tokay grapes on resistant roots, grafting the cuttings myself next month according to the methods described in back numbers of the PACIFIC RURAL PRESS. What variety of resistant would you advise me to use? I have seen it stated in the PACIFIC RURAL PRESS that vines grafted on Lenoir bear more bountifully than when grafted on other resistants. Rupestris St. George finds favor with me because I know where to get them, but I do not wish to use them if they are not as good as the best. I find that, when in grading my land I have occasion to cut down high places 8 inches or more, such places are then barren. Can they be made immediately fertile by an application of complete fertilizer?—FARMER.

We should use Rupestris St. George as most likely to succeed on your light soils, likely to dry out. The Lenoir is, however, a good stock, less in resistance to phylloxera, but held to be safer against Anaheim disease—but probably too much is being claimed for it in that line. The best thing to do with an uncovered hard pan is to plow in as much stable manure as you can, not only for the plant food, but for the humus, which will help in friability. You cannot do exactly the same with commercial fertilizers, as they do not furnish humus. But you can use such fertilizers to stimulate the growth of burr clover or peas, and plow them under green with great advantage.

Rye Growing.

TO THE EDITOR:—Will you kindly tell me through your columns why rye is not more generally raised if, as I am informed, the straw sells readily in San Francisco at $25 per ton? Does rye require soil other than that which is suited to other grains? Will it thrive in any climate in which other grains thrive? I want to change crops, and rye has been urged upon my attention, and yet I query, if it is so profitable, why do not other Sonoma county farmers plant it?—AN ENQUIRER, Santa Rosa.

There is mighty little rye straw sold at the price you name or at any other price which would pay transportation. There may be some bought for upholstery purposes or other kind of manufacturing purposes, because rye straw is hard and does not lose its shape easily. There may also be some manufactured into "straws" to suck soda water, or something fiercer, through. You can be sure that there is not much demand and then only for the longest and brightest straw—not dull and smutted straw, such as you are apt to get near the coast. Rye is easy to grow. It is hardier than other grains and will make a crop on drier, poorer land. But the demand for rye flour is small and largely confined to the German bakeries. Rye is a grain which will not stand large expansion because of limited demand, which is largely local, as it is only occasionally that it can be exported profitably.

Concrete Reservoir.

TO THE EDITOR:—I am contemplating the building of a concrete or cement reservoir above ground, say 6 or 8 feet high. Can you give me any idea as to its practicability? Do you think it would crack so as to let the water out? Any information in regard to the above will be thankfully received.—F. G.

It will work all right if well made. Such a job, if the reservoir is large, should be done by experienced workers in concrete. Such structures are safer in California than elsewhere, because we have no deep ground freezing to lift and crack the walls. Any small cracks that might appear can be filled with pure cement, and the interior floated with cement put on with a brush. If the reservoir is large, it should be banked around with dirt, water-settled around the wall.

Eucalypts During Overflow.

TO THE EDITOR:—I have some land that is under water from two to six weeks during the winter, but is dry during the summer. Do you think the blue gum would grow on it? How long an inundation will Australian rye grass stand?—O. D. W., West Butte, Sutter county.

Both the trees and the grass will endure such submergence, according to our observation.

Nitro-Cultures.

TO THE EDITOR:—Where can I find the latest information regarding the results of soil innoculation with nitro-cultures? A reply in the PACIFIC RURAL PRESS shall be much appreciated.—M., Watsonville.

We shall have them in our columns as soon as we have anything which seems definite. We have already explained the theory of the recourse. It will take time to make the demonstration. We do not know of anything later than we have published.

Plowing-in or Burning.

TO THE EDITOR:—I have some rich black land; part of it is of an adobe nature, upon which grew a crop of barley this year and now has a heavy coat of stubble on it. Shall I plow it under or burn it off? Are there any fertilizing qualities in the stubble, or are the ashes just as valuable? There seems to be a difference of opinion among the farmers here, some claiming that the ashes are of just as much value as the stubble for plowing under, and that the ground will not retain the moisture so well if the stubble is plowed under, and also that it will breed worms to destroy the next year's crop. Please advise us on this subject.—FARMER, San Luis Obispo.

Plowing stubble into an adobe helps to make it lighter and more workable if there is moisture enough to rot it. If the season is likely to be dry and moisture scant, it is better to burn it off. On sandy soils in districts of light rain it is always dangerous to plow in stubble. If you have Hessian fly or other stem-pests of the grain it is better to burn because they are destroyed by it if the burning is done early in the fall. The stubble has more fertilizing value than the ashes because it has the organic matter which, under proper moisture conditions, is turned into humus. But whether you should plow in or burn has to be settled, not by the plant food in the stubble, but by the nature of the soil and the moisture which it is to have in any year. We are frank to say that this year we should burn on any soil the way the season looks now.

Long Pruning of Sultanas.

TO THE EDITOR:—Will you please state in your next issue how Sultana vines should be pruned? If long and tied to stakes, how long should the canes be left and how many canes would you leave to a good, healthy vine? I have canes on my vines 18 feet long. —GROWER, Tulare.

Six or eight feet of cane is surely enough on a trellis and a little less to a high stake. About four canes to the vine is a good average.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 19, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cool and partly cloudy weather prevailed during the week, with frequent heavy frosts and northerly winds. Light rain fell on Friday and Sunday, slightly improving farming conditions. If followed soon by heavier rain and warm weather the prospects for crops will still be quite good. The soil is very dry and needs copious rains. Early sown wheat is not up and new range feed has not started sufficiently for good pasturage. Hay is still plentiful, but cattle are thin and in poor condition. Plowing and seeding are very backward and most farmers are waiting for generous rains before putting in their crops. Orange harvest continues and good shipments are being made; the crop is about average.

Coast and Bay Sections.

Clear and cool weather prevailed during the first of the week, with frosts in most places, and cloudy, unsettled weather from Thursday until the close of the week. Rain fell in nearly all sections Friday and Sunday, but in many places was too light to be of great benefit. Heavy rains are needed soon for early grain and grass. Plowing and seeding are progressing and some work is being done in orchards and vineyards. Pasturage is not making much growth and cattle are generally in poor condition. Cold weather and frosts have caused no damage except in retarding growth of grain and feed. Oranges continue in good condition and are ripening slowly.

San Joaquin Valley.

Fair, cool weather prevailed during the forepart of the past week and generally cloudy and somewhat warmer weather the latter portion, with light rain in the extreme northern portion of the valley Friday night and light rain over the entire valley Sunday night. Heavy frosts occurred on several mornings during the early portion of the week, but caused no damage. Olive picking is progressing favorably in the central portion of the valley. Pruning is progressing slowly and some plowing and seeding are being done, but most farmers are waiting for more rain. Rain is badly needed for green feed and farm work. Stock are thin and are being fed in most sections. Potatoes are being shipped freely to Eastern points.

Southern California.

Clear and warm weather continued most of the week, with light rain at the close. Frosts occurred in some sections, but caused no damage. The high winds at the close of the preceding week were confined to interior localities, no damage having been done in the coast districts. No definite reports of the damage to orchards in the interior have been received, but undoubtedly oranges and olives were considerably injured. Orange harvest is in progress and large quantities of oranges, olives and raisins are being shipped for the Christmas trade. Plowing and seeding are progressing and the acreage in grain will probably be larger than last year. Early sown grain and new grass are making fair growth.

EUREKA SUMMARY.—Cool and cloudy, with frosty mornings in the interior. Grass and grain made slow growth. Very little plowing; no seeding. Stock in poor condition.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 20, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	3.14	8.99	11.61	15.63	68	40
Red Bluff	.48	2.61	11.63	9.18	58	40
Sacramento	.43	1.46	7.90	6.35	60	34
San Francisco	.94	1.86	9.00	7.63	60	44
San Jose	.44	2.61	5.05	.....	64	40
Fresno	.28	1.24	5.07	3.00	68	34
Independence	.00	.43	.45	1.27	58	28
San Luis Obispo	.04	2.04	4.73	5.36	66	40
Los Angeles	.05	3.11	1.49	4.57	76	44
San Diego	.40	4.39	.24	2.54	74	48
Yuma	.04	3.43	91	1.52	70	40

FRUIT MARKETING.

Mr. Stephens' Views on Fruit Shipping.

Mr. R. D. Stephens of Sacramento, a leading grower of shipping fruits, has stood for several years as the most severe critic of our business of fruit shipping and has prophesied much evil concerning it. His report at the Santa Rosa Convention has a brighter hue than his previous pictures and he gives his reasons for it. He said:

It affords me great pleasure to have this opportunity to offer my congratulations to the fruit growers of California through their representatives who are present, and also to all other interests of the State, through their respective representatives, upon the floor of this convention, for the successful manner in which the fruit products of California have been marketed this year. While in all cases the results have not been what they should have been, yet the methods used in disposing of our Eastern shipments were such an improvement upon the methods formerly employed in disposing of them, that results have been such as to inspire confidence in the minds of all who have invested in fruit growing in California, and more particularly in the minds of those who have all their means invested in it, and have no other source from which sufficient income can be realized to supply the common wants and necessaries of life.

If, and it is a great big if, too—one the importance of which must not be underestimated—the conditions under which our Eastern shipments have been disposed of this year can be perpetuated and the wants supplied that the experiences of this year teach us are necessary to guarantee against a relapse into the old conditions that prevailed for thirteen years previous to this year, through which great injury has been wrought to our fruit industry; then from the year 1905 will date the beginning of a new era in the history of the fruit industry of California. It will be the beginning of an era of progress and prosperity in California that will surpass the hopes and expectations of the most optimistic.

Two Years Compared.—In order to illustrate how great is the difference between the sales of our fresh fruit shipments in Eastern markets last year and the sales of this year I will give you a few figures, which, no doubt, will be an agreeable surprise to all who have not already investigated the matter.

Take, for instance, the week ending Aug. 5, 1904, and we find the average gross sale of all the cars reported sold in the auction markets during that week was $696 per car, and that for the corresponding week this year the reported gross sales in the same markets average $1223 per car, a gain of $527 per car, and a net gain for the week of $187,612.

For the week ending August 12th, last year, the average of the cars reported sold in the same markets was $681, and this year the average for the same was $1382, a gain of $701 per car, and a net gain for the week of $281,101.

For the week ending August 19, last year, the reported sales in the same markets averaged $811, and the average for the same this year was $1292, a gain of $481 per car, and a net gain for the week of $175,084.

Had the sales last year for the three weeks just mentioned been as good as they were this year, for the corresponding period, they would have resulted in a gain of $643,797, all of which would have been a net gain, less the commission thereon only.

The average gross value of all the cars reported last year was $944, and the value for this year is $1178, a net gain over last year's average of $234 per car.

How the Change Came.—One of the important questions for the members of this convention and the people of the State to solve is, whence came the inspiration and the power sufficiently potent to reverse all former results?

This question becomes somewhat complicated, and certainly very interesting, if the claim be correct that the same influences that have controlled the marketing of our Eastern shipments for the last seven or eight years are entitled to the credit of making so radical a change for the better in so short a time as was accomplished this year.

If it be true, as claimed, that the same influences that have been in control for years are entitled to credit for the result of this year, then another and by far a much more important suggestion presents itself, which is: Why were the results of this year sought?

Upon the proper and correct solution of these questions lies the future welfare and prosperity not only of the fruit growers of California, but also the prosperity of the people of the State.

I wish to be perfectly fair in discussing this question and all other questions. I feel that it is my duty to give credit to all who in any way have contributed toward bettering the condition of the fruit growers of California.

In my judgment, the things that have contributed to make 1905 the banner year in the history of the fruit industry of California are:

Better transportation service at the beginning of the season, so far as time is concerned.

A better distribution of shipments, which resulted in preventing the auction markets from being glutted to the ruinous degree that they have been in former years.

Until this year the f. o. b. business in California—that is, buying direct from the grower—has been one of the greatest impediments to the grower's prosperity. I am pleased to say, however, that the shippers who buy f. o. b. have paid the growers better prices than ever before. The buyers have maintained prices in the auction markets that permitted them to dispose of their purchases in them at a profit.

Good and Bad Literature.—The action taken by the Placer County Fruit Growers, subsequently endorsed by the Sacramento County Fruit Growers, in opposition to many promotion organizations sending out literature in great volume, which was misleading in nearly all respects when it made reference to the condition of the fruit industry of California by assuming that it was then, and had been for years past, in a most prosperous condition, was the beginning of a campaign of education from which more good has accrued to the fruit growers, and, incidentally, to the people of the State, than all the efforts made by promotion organizations.

There is no doubt that many who have been engaged in sending out such literature were innocent of any desire or intention to do wrong to any one or to any interest. They were ignorant of the facts regarding the profits and losses made by the fruit growers. They were misled by statements made to them, and repeated so often without being denied, that they became crystallized as facts in the minds of all save the fruit growers themselves, who knew from experience that they were not true.

For instance, a few days ago the manager of one of the largest shipping and commission firms, in an interview published in the Sacramento Union, stated in substance that there had been 8000 cars of deciduous fruit shipped to Eastern markets this season, and that they have grossed $1000 per car, which means $8,000,000 profit to California growers. Now, any one who has the slightest consideration as to the average cost of producing and marketing a carload of fruit will realize that the author of such a statement either knows nothing about the subject he is discussing or else he designedly makes the statement to mislead the public in general. And it was not until the fruit growers of Placer and Sacramento counties took the action they did to attract the attention of those who had the future prosperity of California at heart to investigate and ascertain what were the facts in the case, that people began to realize the true situation.

Transportation.—The S. P. is master of the situation and will be until other transcontinental roads are built and get their feeders in operation. The power lies with it to promote the fruit industry of California. It should refuse to give the Armour car line or any other private car line an exclusive right to carry fresh fruit shipments over its lines. Instead, it should build its own refrigerator cars and fix the rate for refrigeration at cost, which would prevent the giving of rebates; then we would be placed upon an equality.

That the Southern Pacific has been the genuine factor in bringing about the favorable results this year, and is entitled to much credit for so doing, there can be no doubt. Let us hope that it will continue to do so.

The Future.—There is no other country in the world that equals California in ability to grow fruit, both deciduous and citrus, in almost unlimited variety and quantity and of superior quality, particularly so in regard to its keeping qualities. This ability is attributable to the climate it possesses, which varies according to localities and is peculiar to itself, and unparalleled by the climate of any other country. Its soil is also varied, and much of its valley and foothill lands are very rich and very productive.

The one distinctive thing that has attracted the attention of people from all over the world to California is its ability to grow fruit as above stated, which, if properly fostered and protected, can be made to build up our State and make it what nature seems to have designed it should be—the most beautiful and best place in all the world in which to live. Let us all unite in efforts to bring about such a happy result.

The salvation of the fruit industry in California lies in the hope that the efforts of President Roosevelt to regulate transportation rates in an equitable manner may be successful, and it is the duty of every citizen of this great country, whose interests demand no other protection, to give President Roosevelt his cordial and hearty support.

HORTICULTURE.

Observations on Root Knot.

To the Editor:—Many years experience has taught me that root knot is the worst enemy of the peach grower. The various troubles affecting the tree above ground can be successfully contended with, but root knot, working in the dark, is a formidable enemy. I have been advised to dig down and chisel off the knots and apply Bordeaux mixture, but this is not always practicable, as I find root knots down under the tree stump in the forks of the roots, where it is very hard to get at them and, also, it is an expensive proposition to dig down and expose so much of the root system on the chance of finding root knot. The tree does not always indicate sufficiently by its appearance that root knot is present.

I have planted and dug out many peach trees and have rarely found a tree unaffected when taken out. I have planted trees apparently free from root knot, which have grown one year and then died, and on digging them up I have found root knots as large as walnuts. I conclude that the spores must have been present on the root when tree was planted, as I have had cases like this on clean ground—that is, no other tree or vine had grown on the land before. What I would like to know is, whether the nursery stock could be dipped into Bordeaux mixture of sufficient strength to destroy the spores, without hurting the root? If this were possible, I think a great deal of root knot would be avoided.

Would the fumigating of nursery stock with hydrocyanic gas kill the root knot spores? I suppose the spores are so small that the eye cannot detect them, but trees should be examined very closely and discarded if they show a root knot as small as a pinhead at planting time, for, although the tree may keep ahead of the knot for a few years, there is the danger that as soon as the tree is put to the strain of bearing fruit the knot will get the best of it.

I am, at the present time, taking out a few acres of 20-year-old trees. Many of the trees succumbed years ago and I never succeeded in growing a young tree in their place. Many have root knot and a very few are clean. I find the condition of the tree above ground corresponds to the amount of root knot; the trees that are free from it have a sound trunk and are in fair condition, but those with root knot are rotten, sunburnt and free of borers, according to the amount of root knot present. I am not able to say positively that the root knot is answerable for the condition of the tree, for there may be the possibility that the sunburn and borers prevented the full flow and circulation of sap and forced the root knots out. Some vineyardists claim that too severe pruning of vigorous growing vines forces black knot out on the stumps, and, if root knot and black knot are of the same family, some root knot may be accounted for that way.

H. W. Wrightson.

Oleander.

We should apprehend no injury from dipping dormant roots into a 4—4—40 Bordeaux mixture, although we frankly acknowledge that we have never done it and you must try it at your own risk until some other reader can vouch for it. Such an application would kill germs of root knot upon the root surface, unless they happened to be in some adhering dirt and were thus protected. Hydrocyanic acid gas has not, to our knowledge, been demonstrated to have any effect on fungous germs; it is used as an insecticide, though its evident effect on vegetable tissues under certain conditions might justify its experimental use to determine what would be its effect on so low a form of vegetation as a "slime mold," which is the cause of root knot. The knots of the fruit tree and of the grape vine have not been demonstrated to be the same, but presumably they are.

THE POULTRY YARD.

Duck Growing in California.

Mr. E. H. Hoyt of Watsonville won a prize in the Jubilee Poultry Journal contest for an essay giving the results of his experience in running ducks for eggs, for which he chose the Indian Runner breed.

The Indian Runners.—There are four distinct varieties of Indian Runner ducks: Black and white, fawn and white, chocolate-brown and white, and white. The black and white are not so desirable for market as the pin feathers are dark, which gives the dressed fowl a dark appearance. They are all very prolific layers with remarkably hardy constitutions and a variety that will thrive under conditions suited to broilers. They can be raised in almost any climate, although where it is very warm, shade should be provided.

We prefer the chocolate-brown and white and the fawn and white, both for market and for eggs. The Indian Runners are very easy keepers, our feed bill for these averaging about two-thirds as much as for the Pekin ducks, if the birds are kept in equally fine laying condition.

In our experience the size of the flocks makes little difference with the fertility of the eggs produced, provided they are properly mated and have plenty of room. In mating a flock of these about one drake to nine or ten ducks is found most satisfactory. The Indian Runner ducks seem to care very little for

water and do very well with only a plentiful supply of fresh, clean water to drink, although I prefer a place where I can turn them in for an occasional bath.

The egg is a little larger than the average hen egg and brings the same price as the fancy ranch eggs in the San Francisco market, and one pen of thirteen Indian Runners in the past seven months produced over 1600 eggs and are still laying—in fact, they will lay almost all the year round.

WHY THIS BREED WAS CHOSEN.—"Why did you commence to raise the Indian Runner ducks?" is a question I have had to answer hundreds of times. When I read that the Indian Runners would lay more eggs and were more profitable than the average hen, I was interested, and the only way I could find out was to try them myself. I therefore purchased fourteen ducks and two drakes, and at the same time purchased six Mammoth Pekin ducks and two drakes so we could compare them and see which were the most profitable.

The Indian Runner breed has proved more profitable to us than the Pekin ducks. In egg production the Runner ducks have averaged me about 190 eggs per year, while some of them will lay as high as 225 eggs per year. During the same time the Pekin ducks averaged something over 90 with some of the birds laying as high as 135. The Indian Runner egg does not have the strong flavor of the Pekin duck egg—in fact, it is so nearly like the hen egg that it takes a very delicate taste to detect the difference when cooked. The Indian Runner has also an advantage over the Pekin for market purposes as the flavor is much more satisfactory; and, on the other hand, the Pekin ducks will weigh about one and one-half pound more, at about ten weeks old, than the Indian Runner, but I find that this seeming advantage in favor of the Pekin is more than equaled in the extra cost of producing the one and one-half pound difference in weight—the Pekin has consumed about one-third more feed during the ten weeks. The Indian Runners should always be marketed at about nine or ten weeks of age, for the reason that immediately after this age they commence to molt and are never as valuable for the market after this period.

Our tests with the two breeds have shown us that the Pekins begin to lay at about eight months of age, and the Runners at between four and one-half and five months, and when once started they do not slacken their laying excepting during the molt, which is generally about twice a year. The tests are decidedly in favor of the Indian Runners, but we will continue these tests another season with extra fine flocks of both breeds. At present about 12% of our nine-month-old Pekins are laying, and about 35% of the seven-month-old, and about 50% of the nine-month-old Indian Runners are laying.

GROWING DUCKS.—When I first got my ducks I was told by an experienced and expert duck man that the duck eggs could not be hatched in incubators with any success. I believe it is true that duck eggs, as a rule, will not hatch quite so well in incubators as under hens, but I have hatched as high as 89% of Indian Runner eggs, and as high as 84% of Pekin duck eggs in the same machine and at the same time. This last year I have tried both hot-air and hot-water incubators to see which I could get the best results from. My average per cent with hot-air machines was about 60, while with hot-water machines the average was 79, and moreover I lost less, had fewer weak ducklings and fewer cripples from the hot-water machines than with the hot air incubators. I cannot see where the difference lies, and will carry the tests through another season in order that I may learn more about it.

Our breeders for the coming year are selected from the first ducks to mature, the best marked, and the largest ducklings at eight weeks old—the rest were placed in a separate yard and fed for market, while these had very different care. We had one incubator to hatch on December 7, which will make the third generation from the Indian Runners in one year, and this can hardly be done with Pekin ducks or with hens.

If you wish to try the incubator and will follow these few directions I think you will meet with good success. Do not think you can set your incubator with duck eggs and get a 100% hatch the first time if you run your incubator the way you usually run it. My first hatch was 26%, but I did not know then all that I know now.

After putting the eggs in do not turn them until the third day—begin on the third day and turn twice each day until the twenty-seventh day (although the best hatch I ever had I turned but once each day). Have the ventilators closed until the tenth day; after the tenth day open gradually until by the fifteenth day the ventilators are wide open. Leave the ventilators open until the twenty-fifth day, after which time they should be closed until the hatch is over. On the last four days fill the moisture pan with boiling water, and this should be done without opening the door of the egg-chamber. If the thermometer registers as high as 110° right after putting in the boiling water it will do the eggs no harm.

If the air in the incubator room is dry and hot it will help the ducklings out of the shell if you will put the eggs in warm water, about 103° in temperature, for ten or fifteen minutes once each day for the last seven days. Air the eggs well after the first week and cool the eggs to about 85° before putting them back in the incubator. If these directions are carefully and intelligently followed you will surely have good results, particularly if you have an incubator that has the right moisture device and the right ventilation.

THE FIELD.

Asparagus Culture.

By MR. R. B. THAYER at the University Farmers' Institute, at Thermal, Cal.

It is not my intention to deal with the history of asparagus nor with the different diseases and insects which hinder its growth, but to describe as clearly as possible the methods of growing it. First in importance is the selection of the best possible land. Asparagus will grow on different soils, from a clay to the sandy soil; but the best results have been obtained on a rich sandy loam with a clay subsoil which has good drainage. Heavy soils bake so that the shoots are unable to reach the surface, while, on the other hand, the more sandy soil has not enough substance to produce the thick stalks.

SECURING THE PLANTS.—There appear to be two ways to secure plants: First, by buying seeds and raising the plants, and, second, by purchasing the plants of a good, reliable nurseryman.

In the first case, care must be taken that the seed are obtained from a good, healthy field, free from all disease, and that the plants be well developed and of vigorous growth. It is a safe way to pay a good price for seed to a reliable house rather than bother with cheap seed.

In preparing the soil in the nursery for seed, the ground should be well pulverized and of sufficient moisture to sprout the seed. Care should be taken that the land be well leveled, allowing no place to flood. As soon as the ground gets warm enough, which in the desert is in early March, the seed may well be sowed.

In planting the seed in the nursery, the garden drill is a convenient tool, allowing one seed for every 3 or 4 inches. It will be found that one pound of seed will produce about 3000 plants.

It is of utmost importance that the nursery be well taken care of, for the first few months, especially. As soon as the shoots are six or eight weeks old, they should be thinned, allowing only the largest to remain. Frequent cultivations and hoeings will add greatly to the thrift of the growing plants. On irrigated land they should not be flooded, but watered by a shallow furrow between the rows.

In the following November or December after planting it will be seen that the green foliage commences to turn yellow and die.

After they have well turned is the time to cut the tops and prepare the ground for permanent setting.

In buying from a nurseryman, the plants should never be over two years old, and better if only one year, as the young plants when set out in their permanent beds are found to make a much more rapid growth at that age. Then, too, if the plants are allowed to stay in the nursery form two years, nothing is gained, for they need to be two years in the permanent bed before any sprouts can be cut. Therefore, a year is lost and the plants are less vigorous.

PLANTING OUT.—In preparing the soil for the permanent bed, the ground should be well leveled and plowed to a depth of 14 or 15 inches. If plenty of manure can be obtained, it would be well to have that well worked in with the soil before planting. Trenches should then be made 12 inches deep, 6 feet apart, running from north to south, in order that when the plants commence to shoot they will have the sun's rays unaffected by shadows. No trees should be allowed to grow very near the field, as they draw the nourishment from the plants, besides shading the growth.

The home-grown plants have the advantage of the nurseryman's in two ways: One can choose from his own nursery, selecting the largest, best rooted and crowned plants, and selection is an important thing. Then, again, the plants as soon as dug can be reset immediately; while, if they come from a nurseryman, you take what is sent and when the railroad chooses to deliver.

After selection, the plants should be set in the bottom of the furrow 2 feet apart, being careful that the crowns are right side up. As soon as one row is set, the trench can be filled and the setting go on.

Some people prefer covering the plants with only a few inches of dirt, and, as the shoots grow taller, adding a little to the top. In this way the plants can be irrigated in the trench.

The better method is to cover well to the level with dirt, making furrows on each side of the row, and, after irrigating, to cultivate thoroughly.

CARE.—It will be found that asparagus needs constant attention for a good part of the year, and the more intense the cultivation and hoeing, especially during the spring, the better the results. The amount of irrigation varies in different sections. In the desert once a month regularly, and in the hot months twice will be sufficient. For fertilizing in the fall, plow a furrow 8 inches deep between the rows of plants and half fill with horse, cow or sheep manure. Then plow back the furrow and irrigate. In this way, especially in the desert, the hot sun does not dry up the manure. If sufficient fertilizer can not be obtained for a large field, fertilize one section a year.

CUTTING.—The first cutting of the grass for market may be made in the spring of the third year from seed. The season should be a short one, as the plants are not yet fully developed. Three or four weeks is long enough. As the plants grow older the roots get stronger, and, consequently, the stalks larger and more abundant. Eighteen or twenty years is supposed to be as long as is profitable to cut, although many fields are cut for a longer period.

If it is desired to have the shoots white, a system of banking should be pursued; otherwise the stalks will be green.

As to the cost of putting out an acre of asparagus, it depends upon the value of the land, the cost of labor and the condition the land is in. The amount of profit in sales depends upon the richness of the soil, the amount of attention given to it, express rates, and, lastly, the honesty of the commission man.

THE STABLE.

Market Types and Demand for Draft Horses.

Written by MR. JAMES MCNAB, for the California Live Stock Breeders' Convention.

In taking up the subject outlined for me, I must admit that my views to a certain extent must be confined to the horses required for city use—and while this is the case, I believe that the demand and prices for draft animals the world over are regulated by the prices paid and demand for draft animals used for commercial purposes in the large cities.

The first start in draft horses in this State came from the American stock that was brought across the plains in the early days. The Shire horse, England's Glory, was imported in the late fifties by Hood & Bihler of Sonoma county.

In 1864, half-breeds were obtainable for city use. In 1867, Mr. Martin of Livermore, in connection with Messrs. Johnston & Dougherty, imported via the Isthmus twelve head of Clydesdale horses. All of these horses were of a first-class draft stock type. Mr. Meacham of Petaluma bought from the lot the horse Pollack, a horse of splendid substance. The dam of Pollack weighed 2700 pounds, which shows that at that date horses had attained a weight that has not been surpassed since.

Blake of Santa Clara county and others imported Shire and Clyde horses in the sixties—all of which importations marked a decided improvement in the class of horses offered for sale in the bay counties.

The colts from these imported English and Scotch draft horses turned out to be No. 1 draft animals. Succeeding importations of the same class of sires furnished the San Francisco market with ideal truck stock with large, flat bone and proper weight, but the longer this strain of breeding was kept up the coarser and rougher the succeeding crosses of colts became.

Importations of the Norman horses then began. The Duke de Chartres, prize winner at the Centennial Exposition, bought by a company of Sonoma county breeders at a cost of $5000, was the first horse of note—the success of this horse leading to a large importation of this breed. Crossed with a mare with a heavy strain of Shire or Clyde, they furnished us with the best type of draft horse, both in size, bone, conformation and action, we have ever had.

Following up this strain of breeding, however, succeeding crosses of colts lost the bone and size until at the present time it is hard to find the needed size and bone in any of the draft stock that is being raised.

In 1883, Mr. McNear of Petaluma imported the Clydesdale horse Pointsman, at a cost of $5000. This horse sired a number of horses whose get can be found, particularly in some sections of Sonoma, Solano and San Benito counties.

Mr. Britton of Santa Clara county has by his importations of the Shire horse Bismark and later the Shire Whaplode Conqueror greatly helped the strain of draft stock in that section.

The largest Belgian horses we have ever had came from the Patterson ranch near Westley, Stanislaus county. The death of Mr. Patterson, about five years ago, resulted in the breaking up of this lot of stock, which was a misfortune to those using heavy draft horses, as the breeding on this ranch had been kept up constantly for over twenty-five years.

The Kern Land Co. at one time had a splendid lot of draft stock, but found that irrigated alfalfa land produced horses with feet defective to such an extent that they abandoned it.

Many other breeders have assisted in the past, but the purpose of this paper is simply to give a brief outline of what has been done.

It is a fact that at the present time there is a great scarcity of heavy draft horses in this State. I have been constantly a buyer of heavy horses for thirty years past in San Francisco; have always traveled

throughout the State in that time looking for and buying stock, and must say that at no time during that period have good draft horses been so hard to find as at the present time.

I know of no opportunity in the stock business that affords such a profitable inducement as that of raising heavy draft stock. Five-year-olds, weighing from 1700 to 1800 pounds, readily bring $300 each in the San Francisco market, and higher prices are paid for fancy animals.

Good 1600-pound teams and over are scarce, and sell from $500 per span upwards. They are salable when five years old, and, unlike roadsters, trotters and thoroughbreds, need no expense in the way of breaking and training.

The Fire Department in San Francisco have had the greatest difficulty in finding suitable stock. At the last price made, $285 per head, the contractor failed to fill the contract.

Had California horsemen followed up the line of breeding in recent years with the same enterprise that was displayed up to about the year 1885, I believe they would have attained even greater success than has been reached with the thoroughbred or trotter, and that the California draft horses would have been noted the world over.

Let us hope that the renewed interest manifested by recent heavy importations of draft stallions will result in an effort to put the State in the proper line for the future as a producer of draft stock.

The Great American Desert.—II.

Written by George J. Bancroft.

One of the oddest, and I presume rarest, bushes I ever noticed on the desert is the screw bean bush, which, so far as I have noticed, grows only in the Saline valley, Inyo county, Cal., and the lower Colorado river. The fruit resembles in form nothing so much as the ordinary carpenter's screw. This valley and the neighboring valleys, such as Death valley, Panamint valley and Racetrack valley, I believe are the hottest places in the United States in summer. They have to shut down the borax works in the Saline valley from July 15 to Sept. 15, because even the Indians cannot work in the heat. For weeks the mercury will stand from 110° to 125° in the shade—and there is no shade.

Of the unusual fauna found on the desert I may mention the Gila monster, the "side winder" rattlesnake, and the hydrophobia skunk. The Gila monster is a hideous spotted lizard about a foot long and stubby in general appearance, which inflicts a poisonous bite. There is a harmless lizard called the chuckawalla, which looks much like the Gila monster and which has a great fondness for living around abandoned mines. It is a startling experience to have one of these hideous lizards poke his head out from between the cribbing just on a level with one's hands or face, when one is climbing down a shaft and can not jump away. The Indians say they are very good to eat, but someone else can have my share.

The hydrophobia skunk lives only in the driest and hottest parts of the desert. It is a pretty little animal, about the size of a kitten, and has a saucy way of coming around camp in broad daylight. I have often wondered how they existed so far from water. I have seen them, during August, 15 miles from any known water. Whether they really impart hydrophobia with their bite or not is a question I can not positively answer, but all the people who live in that section of the country believe they do, and there is no doubt that coyotes, wildcats and dogs occasionally "go mad" in the localities inhabited by the hydrophobia skunk.

I always thought the "side winder" rattlesnake was a good deal like the hoop snake, a creature of the fancy, until I saw one; then I realized that he was simply the result of evolution. For the ordinary snake to travel he must have something to wriggle through, such as grass or brush or rocks. Put a snake on a sidewalk and he can hardly progress at all. In southern Nevada, Arizona and on the Mohave desert of California, there are many areas so barren that the bushes are many feet apart and the intervening ground is a baked claypan as hard and smooth as a sidewalk. It is here that the "side winder" lives. I can not exactly describe his mode of locomotion except that he holds his head up straight, well off the ground, and travels sideways at a good rate. A close inspection of his tracks showed that he lifted first one end and then the other and threw it forward, finally flopping over his middle, but in action his motions were too quick to decipher. The "side winder" is distinguished from the other variety of rattlesnakes on the desert by two horny projections over the eyes. This snake is smaller and more vicious than the so-called Black Diamond rattlesnake (crotalus adamanteus).

It must not be thought that all the denizens of the desert are as disagreeable as the three just mentioned. The commonest creatures on the desert are probably the harmless little lizards, and next the jack rabbit and next the coyote. Among the larger animals, white tail deer are quite plentiful, and antelope and mountain sheep may still be found. Lynx and mountain lions are occasionally found, but bears seem to prefer a moister climate. Wild horses are by far the most numerous of all the larger wild animals.

In Oregon, Idaho, Utah and Nevada one may see wild horses by the thousands. Of late years the packing companies have been buying them and they are getting cleaned up. Five thousand head were shipped from one station on the Central Pacific railroad last year. What the packers do with them is not given out, but rumor has it that they are either converted by mechanical processes into canned corned beef, or are shipped to France and sold as horse meat. Anyway, it is a good thing for the country to clean them up. They sprang originally from small Spanish stock and it seems impractical to breed them up, and, on the other hand, they entice away the gentle horses of the ranchmen. The fact that the desert supports these great herds of wild horses, which have no hay or shelter in winter, illustrates the undeveloped grazing resources of the country. The far-famed Arabian horse is a product of the desert, and, I believe, that the desert bred horse of this country is the equal of the Arabian in all respects and will soon be recognized as such.

In the Panamint range there are great droves of wild burros, and anyone who thinks the burro is a stupid, slow-going beast should see those wild jacks bore holes in the atmosphere at the first scent of danger.

In my foregoing remarks I have confined myself to that part of the desert which has not as yet been brought under cultivation. The passing of the Reclamation Act has renewed public interest in the cultivation of the desert. The recent government publications for the first time permit a fairly accurate estimate to be made as to what may ultimately be accomplished by the Reclamation Service, acting together with private enterprise.



Greasewood Bush and Desert Flowers.



An Irrigated Farm in the Desert.

The Reclamation Act was passed June 17, 1902 Within a very few months the desert began to blossom with the tri-cornered monuments of the hydrographic survey and the hill tops to twinkle with their little white flags. From Yuma, Ariz., to Rapid City, S. D., parties of strong-limbed, khaki-clad, young men might be met on any trail, carrying about the queer looking instruments of their calling and going about Uncle Sam's investigations in the accurate, scientific way that has characterized all the operations of the Geological Survey department.

Agricultural Review.

Butte.

WORK COMMENCED UPON THE ST. JOHN BEET SUGAR PLANT.—Sacramento Union, Dec. 15: At St. John, preliminary work for the beet sugar factory has been started by the Alta California Co. The Southern Pacific Co. announce that it will begin the construction of a railroad from its main line at or near Orland to the site of the factory soon.

Los Angeles.

WHAT IRRIGATING WATER COSTS.—Downey Champion, Dec. 16: The stock of the Arroyo Ditch & Water Co., a corporation, is owned by the land owners of Downey and vicinity. The distribution of stock is in the proportion of one share to each acre of land. The water is served to shareholders at a rate of one full head thirty-six minutes for each acre. For this a zanjero fee of 20 cents per hour is charged. Under this arrangement a 40-acre tract would be entitled to a run of water for twenty-four hours, which, at 15 cents per hour, would cost $4.80.

Riverside.

ORANGE GROWING ON DESERT.—Pomona Progress, Dec. 14: L. G. Haight of the Redlands Eclipse Orange Association has returned from a trip to the Colorado desert, where some time was passed in the vicinity of Coachella, bringing with him several specimens of oranges raised in that district. The fruit is principally of the seedling variety, and is more ripe now, even at this early season, than the seedling orange is in this section. The growing of oranges on the desert is yet in its experimental stage, but from what has been seen it is thought that navel oranges can be raised there and shipped toward the last of October or first of November and be as ripe and fit for market as are the navels in other sections in January. At present there are but few trees about Coachella and these are several years old. This season proves more conclusively than ever that the Southern California fruit can be made to compete with the Florida and Northern California oranges, or even reach the eastern markets first. Should such prove to be the case, an orange boom on the Colorado desert might be looked for. As it is, several groves may be planted in the near future. The trees are said to be free from frost, as are the groves in this section. Anyway, the oranges are picked so soon that the frost would not touch the crop. In the vicinity of Thermal and from there to Mecca, experiments with oranges are proving much the same as at Coachella.

San Bernardino.

ORANGES. — Highland correspondence Sun, Dec. 16: Thomas Henslee has sold the crop of oranges on his 13-acre orange orchard on Highland avenue to J. L. Hickson. The price paid for the fruit is put at $3250. It is understood that this includes all the varieties of oranges on the trees. The packing houses, though they have been running a little irregular this week on account of a lack of cars, have put out a good number of cars, and the shipment to date from this district will go about 125 cars. As the ranchers pick their oranges, the fact that there is a light crop is more impressively put before them. One grower, it is claimed, has 1000 boxes less than he thought he was going to have, and this from a 10-acre orchard.

Etiwanda correspondence of the Sun, Dec. 15: The various orange growers in this vicinity, who are busily gathering in the windfalls of the late storm, are being agreeably surprised at the small amount of fruit on the ground compared with that which was estimated. One orchard, which was thought to have had fully 500 boxes blown off, has been found to have lost less than half that amount. Yet while loss through windfalls has been less than was apprehended, there has been considerable damage to fruit on the trees. The continual whipping and threshing of the branches has scratched and marred many oranges that otherwise would have been first class. As a result, it is estimated that the shipments of this year will not exceed the output of last year, as it was thought it would earlier in the present season. The dry weather from the wind has completely withered up the leaves on the grapevines, and many of the vineyardists have commenced pruning on the early vineyards near the foothills. Many Japanese and Chinese have been set to work for that purpose. The pruning on most of the vineyards, however, will not take place till later next month.

San Diego.

LADY BUG VALUABLE FOR FIGHTING SCALE. — San Diego Union, Dec. 14: Horticultural Commissioner Austin says that the only way to fight scale and other injurious insects is with other insects. This thing of fighting them in this way is practically new, as it is the latest means discovered with which they can be fought. California leads in the matter of propagating insects to prey upon other insects which are parasites. Since the lady bug was brought here a number of years ago the scale on the orange trees has been controlled, or it could be controlled in all orchards by introducing a few colonies of the lady bug. There are a number of varieties of these bugs, and the different kinds prey upon different scale. It makes no difference to the bug what kind of a tree the scale is on, the lady bug will clean up the tree just the same. During the winter months the lady bug in its various varieties is practically dormant, and the insectivorous birds kill a great many of them. Then in the spring there are but a few of them left to begin work on the scale, and it is hard to find colonies of them. At the present time the "mealy bug" is a serious menace to the trees in many orchards, and at the present time he is propagating lady bugs from the colony he has secured to fight this particular parasite. Here in San Diego a short time ago there was scarcely a clean tree in town. Several people who had handsome grounds had been doing everything they could to save their trees, but the scale were getting the best of the bargain until some colonies of the lady bug were introduced, and in a short time the scale were all gone. With the exception of a small clump of pepper trees on C street, it is thought all the trees in town are clean now and doing better than they have done in years. He has secured a number of colonies of lady bugs and is keeping them for next spring. They will then be scarce in the orchards, and these colonies can be turned loose early and can get to work early. He does not think there is any danger of the scale getting entirely ahead of us again, as when the scale reappears the lady bug usually shows up and keeps up the fight until the scale is gone. Of course, the scale is not exterminated and probably never will be, so we will always have to be on the watch, but with the lady bug as an ally the orchardists can save their orchards from the ravages of the scale.

San Joaquin.

RANCHERS TO RAISE ONIONS.—Lodi Sentinel, Dec. 14: Hogan Bros., south of Lodi on Cherokee Lane, are preparing land for the cultivation of about an acre of onions of the red skin variety. Onion growing in San Joaquin county is not in the least experimental, as hundreds of acres are cultivated on peat lands west of Lodi, but on the sandy loam of the uplands it has not been followed extensively, possibly because other crops, it is believed, have paid better.

FARMERS INSTALLING MOTORS.—Lodi Sentinel, Dec. 14: Owing to the continued dry weather a number of Lodi farmers and vineyardists have decided to draw on the water supply under the soil for the necessary moisture to grow next year's crop. J. A. Henning reports that electricity is coming to the front as a motive power for this purpose, Cary Bros. having installed under his supervision during the past month four of these machines ranging from 2 to 5 H. P. P. H. Tindell and S. Mowry have on the way now 10 H. P. motors for installation on their farms.

Santa Barbara.

WALNUT SELLING.—Santa Barbara Press, Dec. 14: Walnut growers of Goleta report that sales of their walnut crops have been lively during the last few days and that the crop of that district is now pretty well cleaned up. The association nuts were taken up almost wholly by J. K. Armsby & Co., while the independent growers sold to various companies. The Goleta crop showed up much better on the finish than was at first anticipated, about twenty-two carloads having been already shipped.

Stanislaus.

TO PROTECT GRAPE INDUSTRY.—Modesto Herald, Dec. 14: Appreciating that there is a future for the vine and fruit industries in Stanislaus, the Board of Supervisors have adopted an ordinance relating to the bringing and importing vines and grape vine cuttings into the county of Stanislaus. It is hereby declared unlawful for any person, firm or corporation to bring into the county of Stanislaus any rooted grape vine. It is hereby declared unlawful for any person, firm or corporation, to bring into the county of Stanislaus any unrooted grape vine cuttings, unless the same has been fumigated with bisulphide of carbon immediately before bringing it into the county or the same is immediately fumigated after arriving and before being taken to the place where the same is to be planted. Any firm, person or persons or corporation, either as owner or agent, who shall receive, bring, or cause to be brought into Stanislaus county any nursery stock, trees, shrubs, plants, vines, cuttings, grafts, scions, buds or fruit pits, shall within twenty-four hours after the arrival thereof, notify horticultural commissioner or the quarantine guardian of the district in which such nursery stock is received, of their arrival, and hold the same until said quarantine officer orders the delivery. It is hereby declared to be unlawful for any person or persons, firm or corporation, to knowingly bring, ship, carry or transport into the county of Stanislaus, any trees, plants, vines, shrubs, scions, cuttings, or grafts, infested by codlin-moth scale or any other injurious insects or their larva, or Russian thistle that is injurious to fruit, fruit trees, vines or other plants or vegetables. Any person, firm or corporation violating this ordinance is guilty of a misdemeanor and is punishable by a fine not exceeding the sum of five hundred dollars or imprisonment in the county jail not exceeding six months or by both such fine and imprisonment. This ordinance shall take effect from and after fifteen days after the passage and publican thereof. Adopted December, 1905.





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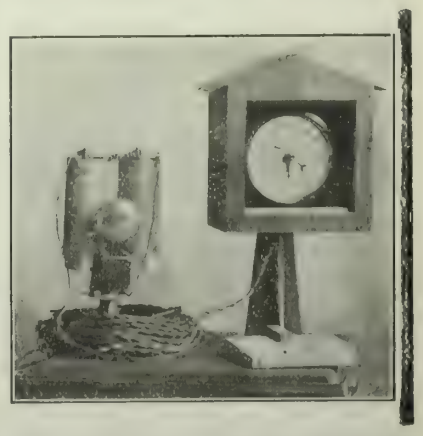
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The Home Circle.

Christmas Bells.

I heard the bells on Christmas Day
Their old familiar carols play,
And wild and sweet
The words repeat
Of peace on earth, good will to men!

And thought how, as the day had come,
The belfries of all Christendom
Had rolled along
The unbroken song
Of peace on earth, good will to men!

Till ringing, singing on its way,
The world revolved from night to day,
A voice, a chime,
A chant sublime,
Of peace on earth, good will to men!

But in despair I bowed my head—
"There is no peace on earth," I said;
"For hate is strong,
And mocks the song
Of peace on earth, good will to men."

Then pealed the bells more loud and deep,
"God is not dead, nor doth he sleep!
The wrong shall fail,
The right prevail,
With peace on earth, good will to men!"

—Henry W. Longfellow.

"A Merry Christmas."

Hark, throughout Christendom joy bells are ringing,
From mountain and valley, o'er land and o'er sea,
Sweet choral melodies pealing and thrilling,
Echoes of ages from far Galilee.
Christmas is here,
Merry old Christmas,
Gift-bearing, heart-touching, joy-bringing Christmas,
Day of grand memories, king of the year.

Christmas at Bob Cratchit's.

By Charles Dickens.

[This story centers around a stingy old miser, "hard and sharp as flint," known by the name of Scrooge. He kept an office in London and employed as a clerk Bob Cratchit, paying him barely enough wages to keep himself and family alive. When Christmas came he grumbled at the spirit of giving which possessed everybody and refused to give a donation or present of any kind to relative or friend. Christmas Eve, however, he is besieged by Spirits who lead him to different homes during the ensuing day in an endeavor to arouse his sympathy for humanity in general. The account given here is of his journey to the home of Bob Cratchit, his employe, under the guidance of a Spirit. What he sees is described in the following well-known tale by Dickens:]

But soon the steeples called good people all to church and chapel, and away they came, flocking through the streets in their best clothes and with their gayest faces. And at the same time there emerged from scores of by-streets, lanes and nameless turnings innumerable people carrying their dinners to the bakers' shops. The sight of those poor revelers appeared to interest the Spirit very much, for he stood with Scrooge beside him in a baker's doorway, and, taking off the covers as their bearers passed, sprinkled incense on their dinners from his torch. And it was a very uncommon kind of torch, for once or twice when there were angry words between some dinner-carriers who had justled with each other, he shed a few drops of water on them from it, and their good-humor was restored directly. For they said it was a shame to quarrel upon Christmas Day. And so it was! God love it, so it was.

It was a remarkable quality of the Ghost (which Scrooge had observed before) that, notwithstanding his gigantic size, he could accommodate himself to any place with ease, and that he stood beneath a low roof quite as gracefully and like a supernatural creature as it was possible he could have done in any lofty hall.

And perhaps it was the pleasure the good Spirit had in showing off this power of his, or else it was his own kind, generous, hearty nature and his sympathy with all poor men, that led him straight to Scrooge's clerk's; for there he went, and took Scrooge with him, holding his robe; and on the threshold of the door the Spirit smiled, and stooped to bless Bob Cratchit's dwelling with the sprinklings of his torch. Think of that! Bob had but 15 "Bob" (common name for a shilling, equal to 25 cents) a week himself; he pocketed on Saturdays but fifteen copies of his Christian name, and yet the Ghost of Christmas Present blessed his four-roomed house!

Then up rose Mrs. Cratchit, Cratchit's wife, dressed out but poorly in a twice-turned gown, but brave in ribbons, which are cheap and make a goodly show for little money; and she laid the cloth, assisted by Belinda Cratchit, second of her daughters, also brave in ribbons; while Master Peter Cratchit plunged a fork into the saucepan of potatoes, and getting the corners of his monstrous shirt collar (Bob's private property, conferred upon his son and heir in honor of the day) into his mouth, rejoiced to find himself so gallantly attired.

And now two smaller Cratchits, boy and girl, came tearing in, screaming that outside the baker's they had smelt the goose and known it for their own, and, basking in luxurious thoughts of sage-and-onion, these young Cratchits danced about the table and exalted Master Peter Cratchit to the skies, while he (not proud, although his collar nearly choked him) blew the fire, until the slow potatoes, bubbling up, knocked loudly at the saucepan lid to be let out and peeled.

"What has ever got your precious father, then?" said Mrs. Cratchit. "And your brother, Tiny Tim! And Martha wasn't as late last Christmas Day by half an hour!"

"Here's Martha, mother!" said the girl, appearing as she spoke.

"Here's Martha, mother!" cried the two young Cratchits. "Hurrah! There's such a goose, Martha!"

"Why, bless your heart alive, my dear, how late you are!" said Mrs. Cratchit, kissing her a dozen times and taking off her shawl and bonnet for her with officious zeal.

"We'd a deal of work to finish up last night," replied the girl, "and had to clear away this morning, mother!"

"Well! Never mind so long as you are come," said Mrs. Cratchit. "Sit ye down before the fire, my dear, and have a warm, Lord bless ye!"

"No, no! There's father coming," cried the two young Cratchits, who were everywhere at once. "Hide, Martha, hide!"

So Martha hid herself, and in came little Bob, the father, with his threadbare clothes darned up and brushed to look seasonable, and Tiny Tim upon his shoulder. Alas for Tiny Tim, he bore a little crutch and had his limbs supported by an iron frame!

"Why, where's our Martha?" cried Bob Cratchit, looking round.

"Not coming," said Mrs. Cratchit.

"Not coming!" said Bob, with a sudden declension in his high spirits, for he had been Tim's blood horse all the way from church and had come home rampant. "Not coming upon Christmas Day!"

Martha didn't like to see him disappointed, if it were only a joke; so she came out prematurely from behind the closet door and ran into his arms, while the two young Cratchits hustled Tiny Tim and bore him off into the kitchen, that he might hear the pudding singing in the saucepan.

"And how did little Tim behave?" asked Mrs. Cratchit, when she had rallied Bob on his credulity, and Bob had hugged his daughter to his heart's content.

"As good as gold," said Bob, "and better. Somehow he gets thoughtful, sitting by himself so much, and thinks the strangest things you ever heard of. He told me coming home that he hoped the people saw him in the church, because he was a cripple, and it might be pleasant to remember upon Christmas Day who made lame beggars walk and blind men see."

Bob's voice was tremulous when he told them this, and trembled more when he told them that Tiny Tim was growing strong and hearty.

His active little crutch was heard upon the floor and back came Tiny Tim before another word was spoken, escorted by his brother and sister to his stool before the fire; and while Bob, turning up his cuffs—as if, poor fellow, they were capable of being made more shabby—compounded some hot mixture in a jug with gin and lemons and stirred it round and round, and put it on the hob to simmer, Master Peter and the two ubiquitous young Cratchits went to fetch the goose, with which they soon returned in high procession.

Such a bustle ensued that you might have thought a goose the rarest of all birds; a feathered phenomenon, to which a black swan was a matter of course—and, in truth, it was something very like it in that house. Mrs. Cratchit made the gravy (ready beforehand in a little saucepan) hissing hot; Master Peter mashed the potatoes with incredible vigor; Miss Belinda sweetened up the apple sauce; Martha dusted the hot plates; Bob took Tiny Tim beside him in a tiny corner at the table; the two young Cratchits set chairs for everybody, not forgetting themselves, and, mounting guard upon their posts, crammed spoons into their mouths, lest they should shriek for goose before their turn came to be helped. At last the dishes were set on and grace was said. It was succeeded by a breathless pause, as Mrs. Cratchit, looking slowly all along the carving-knife, prepared to plunge it into the breast; but when she did, and the long-expected gush of stuffing issued forth, one murmur of delight arose all around the board, and even Tiny Tim, excited by the two young Cratchits, beat on the table with the handle of his knife and feebly cried "Hurrah!"

There never was such a goose. Bob said he didn't believe there ever was such a goose cooked. Its tenderness and flavor, size and cheapness, were the themes of universal admiration. Eked out by the apple sauce and mashed potatoes, it was sufficient dinner for the whole family; indeed, as Mrs. Cratchit said with great delight (surveying one small atom of a bone upon the dish), they hadn't ate it all at last! Yet every one had had enough, and the youngest Cratchits in particular were steeped in sage and onion to the eyebrows! But now, the plates being changed by Miss Belinda, Mrs. Cratchit left the room alone—too nervous to bear witness—to take the pudding up and bring it in.

Suppose it should not be done enough! Suppose it should break in turning out! Suppose somebody should have got over the wall of the backyard and stolen it while they were merry with the goose—a supposition at which the two young Cratchits became livid! All sorts of horrors were supposed.

Hello! A great deal of steam! The pudding was out of the saucepan. A smell like a washing-day! That was the cloth. A smell like a restaurant and a bakery next door to each other, with a laundry next door to that! That was the pudding! In half a minute Mrs. Cratchit entered—flushed, but smiling proudly—with the pudding, like a speckled cannonball, so hard and firm, blazing in half a quart of ignited brandy and bedight with Christmas holly stuck into the top.

Oh, a wonderful pudding! Bob Cratchit said, and, calmly too, that he regarded it as the greatest success achieved by Mrs. Cratchit since their marriage. Mrs. Cratchit said that now the weight was off her mind, she would confess that she had had her doubts about the quantity of flour. Everybody had something to say about it, but nobody said or thought it was at all a small pudding for a large family. It would have been flat heresy to do so. Any Cratchit would have blushed to hint at such a thing.

At last the dinner was all done, the cloth was cleared, the hearth swept, and the fire made up. The compound in the jug being tasted, and considered perfect, apples and oranges were put upon the table, and a shovelful of chestnuts on the fire. Then all the Cratchit family drew round the hearth, in what Bob Cratchit called a circle, meaning half a one; and at Bob Cratchit's elbow stood the family display of glass—two tumblers, and a custard-cup without a handle.

These held the hot stuff from the jug, however, as well as golden goblets would have done; and Bob served it out with beaming looks, while the chestnuts on the fire sputtered and cracked noisily. Then Bob proposed:

"A Merry Christmas to us all, my dears. God bless us!"

Which all the family re-echoed.

"God bless us every one!" said Tiny Tim, the last of all.

He sat very close to his father's side upon his little stool. Bob held his withered little hand in his, as if he loved the child, and wished to keep him by his side, and dreaded that he might be taken from him.

"Mr. Scrooge!" said Bob; "I'll give you Mr. Scrooge, the Founder of the Feast!"

"The Founder of the Feast indeed!" cried Mrs. Cratchit, reddening. "I wish I had him here. I'd give him a piece of my mind to feast upon, and I hope he'd have a good appetite for it."

"My dear," said Bob, "the children! Christmas Day."

"It should be Christmas Day, I am sure," said she, "on which one drinks the health of such an odious, stingy, hard, unfeeling man as Mr. Scrooge. You know he is, Robert. Nobody knows it better than you do, poor fellow!"

"My dear," was Bob's mild answer, "Christmas Day."

"I'll drink his health for your sake and the Day's" said Mrs. Cratchit, "not for his. Long life to him! A Merry Christmas and a Happy New Year! He'll be very merry and very happy, I have no doubt!"

The children drank the toast after her. It was the first of their proceedings which had no heartiness in it. Tiny Tim drank it last of all, but he didn't care a cent for it. Scrooge was the Ogre of the family. The mention of his name cast a dark shadow on the party, which was not dispelled for fully five minutes.

After it had passed away, they were ten times merrier than before, from the mere relief of Scrooge the Baleful being done with. Bob Cratchit told them how he had a situation in his eye for Master Peter, which would bring in, if obtained, full five-and-six-pence weekly. The two young Cratchits laughed tremendously at the idea of Peter's being a man of business; and Peter himself looked thoughtfully at the fire from between his collars, as if he were deliberating what particular investments he should favor when he came into the receipt of that bewildering income.

Martha, who was a poor apprentice at a milliner's, then told them what kind of work she had to do, and how many hours she worked at a stretch, and how she meant to lie abed to-morrow morning for a good long rest, to-morrow being a holiday she passed at home. All this time the chestnuts and the jug went round and round; and bye-and-bye they had a song, from Tiny Tim, who had a plaintive little voice, and sang it very well indeed.

There was nothing of high mark in this. They were not a handsome family; they were not well dressed; their shoes were far from being water-proof; their clothes were scanty; and Peter might have known, and very likely did, the inside of a pawnbroker's. But, they were happy, grateful, pleased with one another, and contented with the time; and when they faded, and looked happier yet in the bright, bright sprinklings of the Spirit's torch at parting, Scrooge had his eye upon them, and especially on Tiny Tim, until the last.

The Christmas Giving.

December brings to many a hurry and flurry of Christmas shopping. Night finds them with aching limbs, and sleepless they toss the long night away as they count the almost innumerable bond of uncles, aunts and cousins, "in-laws," etc.

When such strenuousness takes place and we find no blessedness in giving, we have lost sight of the true spirit of gift-making. It would grieve me to

accept a present I thought came like one freeing themselves of debt, with no love or especial good will in the package.

We each have friends it pleases us to remember at this season and let us give them the best of ourselves with whatever the token must be. We wouldn't like to think when our eyes rest on a gift that this meant hard work, self-denial or anything but pleasure to the friend as well as to us. It is sweet to be remembered and to know the friends that once were near do not let distance or the changing years interfere with these expressions of good will.

We must consider the person as well as the surroundings when giving, and let our gift be always one that is appropriate.

Women sometimes give their husbands the queerest things—foot stools and head rests that seem to be made for anything but use; but that is better than the woolly, stunted pig this Christmas, which a wife's patience and care develop into a great porker before another, then sees her plans vanish as her husband coolly pockets the cash.

Candy.

MILK CANDY.—This is a delicious candy for children. It can be made with brown, lump or granulated sugar. When made with brown it becomes very hard; with lump sugar it is crisp; with granulated sugar, slightly sticky. The method is the same whichever sugar is used and it can be flavored to suit the tastes of those who are going to eat it. Lemon juice, vanilla and peppermint extract can all be used to flavor it. For brown or granulated sugar, take a breakfast cupful of sugar and the same quantity of milk. Put the milk and sugar in an enameled pan, bring to the boil and boil for twenty minutes, when the candy should set; pour it into a greased tin and score it well with the point of a knife before it is cold, or it will not break into nice neat pieces.

CHOCOLATE CANDY.—Put one pound of loaf sugar into a pan, add half a gill of cold water, and when the sugar is dissolved put the pan over the fire and bring to a boil. When it boils stop stirring, and let it boil up, then remove the pan from the fire, add half an ounce of butter to the boiling syrup. When it is melted put the pan on the fire and bring it to a boil again; take it off the fire and add another half ounce of butter. Do this until two ounces of butter are used up. When the butter is added return the pan to the fire and boil for five minutes; stir in three ounces of grated chocolate. Stir it quickly and boil till it leaves the side of the pan; test it in the usual way with cold water, add half a teaspoonful of vanilla extract and pour the mixture into well buttered shallow tins.

BUTTER SCOTCH.—Boil two pounds of brown sugar with two gills of water and a pinch of cream of tartar without stirring for nearly twenty minutes. Then add in small pieces at a time four ounces of butter and boil again until a small piece dropped into water will harden. Pour into a buttered tin, and when half cold mark into squares with a knife. When quite cold break these squares off and wrap each in wax paper.

WALNUT CANDIES.—Put half a pound of good brown sugar into a pan, add half a gill of cold water and a pinch of cream of tartar; boil till they become clear. Then add half a gill of golden syrup and half an ounce of butter. Boil the mixture until, when some of it is dropped into cold water, it sets. Pour the mixture onto an oiled marble slab, or a large dish will do. With an oiled knife keep folding the edges over into the middle and go on doing this till the nuts (two ounces) are mixed in. Oil your hands and a pair of scissors, and as soon as it is possible to handle the candy cut into thick strips. Pull and stretch these out till about an inch wide. You must be very quick in adding the walnuts. Otherwise the candy will set.

WALNUT TABLET.—This is a good recipe for clear walnut tablet. Butter or oil a tin. Chop four ounces of walnuts and sprinkle them on the tin. Put one and a quarter pound of sugar into a pan, add half a gill of water, dissolve very slowly, then boil to 300 degrees, or until it is a light yellow color and quite brittle when dropped in water. Pour over the walnuts when nearly cold. Mark into squares or strips and break when quite cold.

ANOTHER WALNUT TABLET.—Chop one pound of walnuts, rub a quarter of a teaspoonful of bicarbonate of soda among them. Boil two pounds of golden syrup with one tablespoonful of glucose till a little will snap when dropped in cold water. Take the pan off the fire and stir in the walnuts and the soda. Stir till thick, then pour. Press down and smooth with a wooden spoon and when almost cold cut into pieces with a well-buttered knife.

"A Merry Christmas."

The Christmas chimes are pealing, softly pealing; the joyous sounds are ringing, ever louder and clearer, ever nearer and nearer, like a sweet-toned benediction falling on the ear. Glad ringers are pulling the ropes, and in one grand swell of melody Christmas, with its old yet ever new and marvellous mysteries, bursts triumphantly upon the world once more.

The cattle have turned their heads to the east and knelt down to worship the king cradled in the manger; the houses are decked with holly the yule-log burns brightly; the gray shadows sweep away; the sun is up and the bright-eyed children, who have lain awake all night listening for the patter of old Saint Nick's tiny steeds on the roof, only to fall asleep at the eventful moment, wake hurriedly to find the stockings running over with toys and sweetmeats.

Beautiful and right it is that gifts and good wishes should fill the air like snowflakes at Christmas-tide. And beautiful is the year in its coming and in its going—most beautiful and blessed because it is always the year of Our Lord.

I do not know a grander effect of music on the moral feelings than to hear the full choir and the pealing organ performing a Christmas anthem in a cathedral, and filling every part of the vast pile with triumphant harmony.—Washington Irving.

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The Markets.

San Francisco Produce Report.

San Francisco, Dec. 20, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.	May.
Wednesday	$ 87 @ 85¾	86⅞@ 85⅞
Thursday	86⅜@ 85¾	88⅞@ 88¼
Friday	86⅝@ 86	89½@ 88⅜
Saturday	85¾@ 84⅞	88⅞@ 87⅞
Monday	85⅛@ 83⅞	88⅛@ 87¼
Tuesday	84¾@ 84	88⅜@ 87¼

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	44⅞@44½	44½@43⅞
Thursday	44⅝@44¼	44¼@43⅞
Friday	45½@44⅝	44⅝@44⅛
Saturday	45½@45½	44½@44⅛
Monday	45⅝@44⅞	44⅝@44
Tuesday	46 @45	44½@44⅛

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$ —@—	$1 41 @1 40⅝
Thursday	—@—	1 40⅜@1 40¼
Friday	1 35 @1 35	1 40 @1 39⅞
Saturday	—@—	1 39⅜@1 39⅜
Monday	—@—	1 39⅝@1 39⅜
Tuesday	1 23¼@1 23¼	1 41¼@1 39⅜

Wheat.

The spot wheat market is steady and quiet. Stocks on hand are fairly large and shipments from the north continue to satisfy the demands of the trade. There has been considerably more activity to this trading in futures during the past week than for some time previous, the values ranging from $1.39 to $1.42½. A late dispatch from Chicago is in part as follows: "This year, as one of the prominent grain merchants remarked, finds the speculative wheat trade based on almost an absolutely cash grain condition, as though the actual grain samples were passing from hand to hand. This underlying strength of cash grain recently has held wheat values against demoralization quite a number of times. Owners of actual wheat are content to hold their property for better prices, and thus far there has been sufficient milling demand for better prices and steady pressure of hedging sales that so frequently in former years has been trying to the markets. There is a large German demand to be filled before March 1st, after which date the European exporting countries will have an advantage of about 13 cents per bushel as compared with this country, while all import duties are high enough to warrant German shippers buying wheat and carrying it fully a year on borrowed capital."

California Milling	$1 42 @1 47½
Cal. No. 1 shipping	1 40 @1 45
Northern Club	1 42½@1 43¾
Northern Bluestem	1 45 @1 47½
Northern Red	1 35 @1 37½

PRICES OF FUTURES.

Tuesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.40⅝@1.40¾.

Flour.

The flour market is steady and prices show no disposition to fluctuate. The shipping demand from this point is averaging somewhat smaller than during the winter months last year. This is probably due to the California wheat crop shortage, which compels the millers to grind much more extensively on northern wheat than is generally the case. From the north, however, large shipments continue to be made to Japan, where the partial failure of this year's rice crop has made it necessary to look elsewhere for foodstuffs.

Patents	$ —@4 85
Second Patents	—@4 60
Straights	—@4 25
Superfine No. 1	3 50 @3 75
Superfine No. 2	3 00 @3 40
Oregon Bakers'	4 15 @4 50
Washington Bakers'	4 25 @4 60
Eastern Patents	5 50 @—

Barley.

The barley market has been somewhat affected by recent rains, both spot and futures being easier. Choice bright lots of spot feed are, however, in good demand and are quickly taken up at appearing quotations. Receipts have been fairly liberal and stocks of intermediate and off grade barley have had a tendency to accumulate. Trading in futures has been limited, a few sales of May option having been made at about $1.21½ and $1.23¼ for December.

Brewing	$1 22½@1 25
Feed, No. 1	1 20 @1 21¼
Feed, fair to good	1 15 @1 17½
Chevalier, No. 1 to choice	1 25 @1 30
Chevalier, common to fair	1 20 @1 25

Oats.

The market is, steady with trading rather light. Northern Whites are well cleaned up and are firmly held at $1.55 for choice bright lots. Blacks and Reds of good quality are in light supply and are firmly held.

White oats	$1 47½@1 55
Black oats	—@1 75
Red, choice	1 35 @1 65
Red, fair	1 25 @1 35

Corn

Spot corn is firm and Western, to arrive, is quoted lower. There is very little spot Yellow to be had at any price.

Large White, good to choice	$1 35 @1 37½
Large Yellow	1 32½@1 37½
Small Yellow	1 50 @1 55
Egyptian White	1 37½@1 40
Egyptian Brown	1 25 @1 27½

Rye.

Millers are holding off buying any large quantities of rye at these figures, as they are considered rather high. A choice lot will, however, readily bring the top quotation of $1.52½, but there is very little choice offering. Inferior grades move slowly at the minimum quotation.

Good to choice	$1 45 @1 52½

Buckwheat.

There is a good market for buckwheat, but very little offering at these figures. It is generally conceded that the acreage devoted to buckwheat was much smaller this year than last, which probably accounts for its scarcity.

Good to choice	— @1 75

Beans.

The market is quiet but steady, the only features of interest being an advance in the price of limas and decline in the price of pinks. Bayos and blackeyes are firm and in rather short supply, while whites and red beans are steady at appearing quotations.

Small White, good to choice	$3 00 @3 25
Large White	2 00 @2 60
Pinks	1 75 @2 00
Pinks, damaged	1 00 @1 25
Bayos, good to choice	3 50 @3 65
Red Kidneys	3 50 @3 75
Reds	3 00 @3 10
Limas, good to choice	4 25 @4 35
Black-eye Beans	4 60 @4 75

Dried Peas.

The market for California green peas is firm and stocks are rather light. There have been some arrivals from Humboldt and Mendocino which have readily been taken up at appearing quotations. Niles are ruling steady at prices ranging from $1.75 to $2 per cental.

Green Peas, California	$2 20 @2 30
Niles	1 75 @2 00

Hops.

The market remains unchanged, so far as prices are concerned. The ideas of growers and buyers remain apart with little if any encouragement for improvement. The usual holiday dullness has already set in and the market on the coast will probably remain rather listless till after the first of the year. The last purchase of any size, recorded up to this moment, was 280 bales of Sonomas at 10c. The New York market is quiet. Inferior grades are still ignored while prime to choice still maintain the same figures. Some contracts for hops have been made on the coast for a period of ten years at 10c.

Fair to good	6 @—
Good brewing	8 @ 8½
Prime	9 @—
Prime to choice	9½@10½

Wool.

The Eastern market is firm for long wools only. Others are somewhat neglected. Dealers here are not willing to handle the fall clip until a better Eastern market develops. They consider the present price too high to warrant speculation and consequently all buyers have been withdrawn from the country pending a better Eastern market or a modification of Western growers' ideas to suit the present market. The result is practically no trading, except of a very desultory character. Growers have as yet shown no disposition to reduce present prices, believing that a better market may develop later.

FALL.	
Humboldt and Mendocino	15 @16½
Northern, free	14½@16
Northern, defective	12 @14
Middle County, free	14 @16
Middle County, defective	12 @14
San Joaquin and Southern, free	10 @14
San Joaquin and Southern, defective	9 @11
SPRING.	
Oregon, valley	23 @25
Eastern Oregon	15 @17
Nevada	16 @20

Hay and Straw.

Arrivals of hay were somewhat heavier during the past week, the total amounting to 2850 tons, in comparison with 2530 for the week preceding. In all probability shipments of hay from now on will be comparatively heavy, owing to an improved condition in the car situation. The railroad company reports that within a short time it will be able to supply cars enough to fill all demands. The rain is reported to have extended all over the State, and will undoubtedly assure a goodly amount of green feed later in the winter. General prices show no change, and dealers still report a dull town trade and very little doing in the export line.

Wheat, choice	$14 00 @ 16 50
Wheat, other grades	8 00 @ 13 50
Wheat and Oat	9 00 @ 12 50
Tame Oat, fair to choice	8 00 @ 12 00
Wild Oat	6 00 @ 9 00
Barley	7 00 @ 9 50
Clover	6 00 @ 9 00
Alfalfa	7 00 @ 11 50
Stock hay	7 00 @ 8 00
Compressed	10 00 @ 13 00
Straw, ₱ bale	35 @ 55

Millstuffs.

The market continues in good shape, though it is likely that the recurrence of the rains will have the effect of curtailing the movement somewhat as soon as their effect begins to be felt. It will be some time, however, before there will be any supply, and in the meantime prices will doubtless be well maintained. Alfalfa meal is a shade off in price. Cocoanut cake or meal is firmer and oilcake meal continues in good request at the quotation of $39 to $40 per ton. Supplies are rather limited and it is difficult for the mills to send out larger than one-ton and two-ton lots.

Alfalfa Meal, ₱ ton	$21 00 @ 22 00
Bran, ₱ ton	20 00 @ 21 00
Middlings	27 50 @ 29 00
Shorts, Oregon	21 00 @ 22 00
Barley, Rolled, choice	26 00 @ 27 00
Cornmeal	29 50 @ 30 50
Cracked Corn	30 00 @ 31 00
Oilcake Meal	39 00 @ 40 00
Cocoanut cake or meal	24 50 @ 25 50

Seeds.

The market has continued quiet up to the present time, but the rains may have the effect of creating a demand for some varieties. Flaxseed is nominal. Alfalfa seed is steady and in fair request at 14c for choice. Mustard prices remain firm, owing to light receipts and a fair demand.

Alfalfa	$13 00 @14 00
Flax	—@—
Mustard, Yellow	3 50 @ 3 75
Mustard, Trieste	4 50 @ 4 75
	Per lb.
Canary	6½@ 7
Rape	2½@ 3
Hemp	3¾@ 4
Timothy	5½@ 6

Honey.

Receipts have been rather light, but entirely adequate to meet the demands of the trade. The price of 5c per pound for water white is considered a very liberal figure at the present state of the market for choice extracted water white, while only the best grade of white comb honey can realize the quoted figure of 10c per pound. Amber honey is moving slowly at appearing quotations.

Extracted, Water White	4¾@ 5
Extracted, White	4½@ 4¾
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax

There is a good market for light wax and sales were made this week in the local market as high as 28c. Dark wax is practically nominal, the greater portion of the stocks in the hands of jobbers having already been cleaned up.

Good to choice, light ₱ lb	26 @28
Dark	—@—

Live Stock and Meats.

The market is quiet and steady. Large veal is in good request and first quality beef is also wanted. Hogs remain steady at 5¾c and 5¾c for large stock.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5 @ 5½
Beef, 2nd quality	4 @ 4¾
Beef, 3rd quality	3 @ 4
Mutton—ewes, 8@9c; wethers	9½@10
Hogs, hard grain, 150 to 250 lbs	5½@ 5¾
Hogs, large, hard, over 250 pounds	5¾@—
Hogs, small, fat, under 150 lbs	5¾@—
Veal, large, ₱ lb	6 @ 7½
Veal, small, ₱ lb	8 @ 9
Lamb, spring, ₱ lb	10 @11

Hides, Skins and Tallow.

There is little activity in the hide market here. Dealers in San Francisco do not admit that prices locally have gone down perceptibly, but it is doubtful if they would buy now on the same basis as a month ago, even if the quality of hides now offered was up to the standard. There will be little movement in hides on this coast until after January 1st.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	13 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs	11½@—	10½@—
Light Cow Hides, under 50 lbs	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—
Dry Kip and Veal, 11 to 16 lbs	16 @17	15 @—
Dry Calf, under 4 lbs	20 @21	19 @—
Pelts, long wool, ₱ skin	1 50@2 00	
Pelts, medium, ₱ skin	90@1 25	
Pelts, short wool, ₱ skin	60@ 90	
Pelts, shearling, ₱ skin	20@ 50	
Horse Hides, salted, large prime, each	3 00@—	
Horse Hides, salted, medium	2 75@—	
Horse Hides, salted, small	2 25@—	
Horse Hides, dry, large	1 75@—	
Horse Hides, dry, medium	1 50@—	
Horse Hides, dry, small	1 00@—	
Tallow, good quality	4 @4½	
Tallow, poorer grades	3½@3¾	

Bags and Bagging.

The market remains featureless so far as any present local movement is concerned. The Calcutta market is strong for futures, June bags being quoted at 7c and 7¼c per pound.

Bean Bags	$ 6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7⅛@7⅜
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7⅛@7¾
Wool Sacks, 4-lb	—@ 36
Wool Sacks, 3½ lb	—@ 34

Poultry.

The market is strong at the advance in quotations. Large hens, large fryers and young roosters are wanted, especially in the local market. Some "especially fed" large hens and full-blooded large fowls will bring considerably over the top quotations. Small hens, broilers, etc., are weaker. Capons are selling at $16 to $18 per dozen. There has been a brisk demand for live turkeys, some selling up to 22c. Fancy dressed turkeys brought only 23c, but it is confidently predicted that a 25c market will be reached before the end of the week.

Turkeys, choice Young, ₱ lb	$ 19 @ 21
Turkeys, live gobblers, ₱ lb	19 @ 21
Turkeys, live hens ₱ lb	19 @ 21
Hens, California, ₱ dozen	—@ 5 00
Hens, large	6 00 @ 7 00
Roosters, old	4 50 @ 5 50
Roosters, young (full-grown)	6 00 @ 6 50
Fryers	5 00 @ 6 00
Broilers, large	3 50 @ 4 50
Broilers, small to medium	2 00 @ 3 00
Ducks, old, ₱ dozen	5 00 @ 5 50
Ducks, young, ₱ dozen	5 00 @ 7 00
Geese, ₱ pair	2 00 @ 2 25
Goslings, ₱ pair	2 25 @ 2 50
Pigeons, old, ₱ dozen	—@ 1 25
Pigeons, young	2 00 @ 2 25

Butter.

The butter market is firm and the price of fancy stock has advanced. Storage stock is also moving off quite readily at the appearing quotations. Receipts have been fairly large, and, owing to the cold weather, are in excellent shape.

Creamery, extras, ₱ lb	26 @29
Creamery, firsts	—@25
Creamery, seconds	21 @23
Dairy, select	20 @25
Dairy, firsts	22 @—
Dairy, seconds	20 @—
California storage	23½@25½
Mixed Store	—@20

Cheese.

The market remains steady, with the demand for fancy California stock and "Young Americas" strong. Sales of the latter are reported as high as 14c for choice stock. Eastern cheese has arrived freely and is in good request.

California, fancy flat, new	13 @14½
California, good to choice	—@13
California, fair to good	11 @12½
California, "Young Americas"	13 @14
Eastern, new	16 @17

Eggs.

The bull movement which has been maintaining the price of eggs at so high a figure has been broken at last, and a sharp decline in price is the result. Heavy free arrivals of fresh ranch eggs have assisted materially in deflecting the course of prices. A member of a prominent local commission firm says that eggs are higher to-day at 42c than they were a year ago at the same figure, according to the law of supply and demand. Intermediate and storage eggs have also weakened, and Eastern eggs are steady at quotations.

California, select, large, white and fresh	35 @42
California, select, irregular color & size	30 @32½
California, good to choice store	—@30
Eastern firsts	23 @26
Eastern seconds	20 @21

Potatoes.

In the potato market, the same conditions prevail as last week, only more pronounced. Fancy Salinas stock is very scarce and prices are being firmly held. Other fancy stock is wanted in the local market. Cheaper grades are a drug on the market, the wharves being literally loaded down with them. The shipping demand is not sufficient to take care of one-half of the stock which has arrived during the past few days.

River Burbanks, ₱ cental	60 @ 80
Salinas Burbanks	1 15 @ 1 50
Oregon Burbanks	75 @ 1 15
Tomales	80 @ 90
Sweet Potatoes	1 25 @ 1 50

Vegetables.

The general condition of the market is rather dull. String beans, green peas and kindred vegetables are in very light supply, the only arrivals being from Los Angeles, and very meager. Cabbage is becoming scarce and firmer in price. Garlic is high and scarce. Onions are firmer and in good demand. The market is well supplied with all onions except Yellow

Danvers. Arrivals from Oregon have been liberal and of good quality.

Cauliflower, ℔ dozen	—	@	1 00
Beans, String, ℔ lb	8	@	9
Cabbage, choice garden, ℔ 100 lbs	—	@	1 50
Egg Plant, ℔ lb	5	@	7
Garlic, ℔ lb	7	@	8
Onions, Oregon, ℔ ctl	1 30	@	1 40
Onions, New Yellow Danvers, ℔ ctl	1 25	@	1 40
Onions, Australian Brown, ℔ ctl	1 25	@	1 45
Peas, Green, ℔ lb	6	@	8
Peppers, Bell, ℔ lb	5	@	6
Peppers, Green, ℔ lb	4	@	5
Tomatoes, ℔ box or crate	—	@	1 00
Artichokes, ℔ doz	50	@	1 00
Cucumbers, ℔ box	1 00	@	1 50
Carrots, ℔ sack	65	@	75
Hubbard Squash, ℔ ton	—	@	20 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 30 to 30 lbs. gross.

Fresh Fruits.

The fresh fruit market is inactive on most varieties. Apples continue in good demand, however, though supplies are none too plentiful. Such as are now arriving are of good quality and the top price of $1.25 per box is readily received for fancy stock. Several shipments of Lady apples have arrived from Oregon and are bringing in the local market from $1.75 to $2.25 per box according to quality. There are no more grapes of any variety, and no more berries to be found in the market. Persimmons are plentiful and steady in price. Pears of the Winter Nelis variety are in good supply and are held at $2.50 per box.

Apples, choice to select, ℔ 50-lb bx	75	@	1 25
Apples, good to choice, ℔ 50-lb. box	60	@	75
Apples, fair to good, ℔ 40-lb box	35	@	60
Figs, ℔ two layer	85	@	1 00
Grapes, Verdell, crate	1 00	@	1 25
Grapes, Tokay, ℔ crate	1 00	@	1 25
Grapes, Muscat, ℔ crate	1 00	@	1 25
Huckleberries, ℔ lb	-	@	—
Persimmons, ℔ box	1 00	@	1 50
Pomegranates, ℔ box	-	@	2 25
Pears, Winter Nelis	—	@	2 50

Dried Fruits.

There is very little activity to the dried fruit market on account of the holiday season being at hand. Most dealers have laid in stocks adequate to carry them over the holiday season and consequently will do little buying in the meantime. Prices show no change and no prospect of any change and it is not likely that there will be any before the new year, as the situation is too strong to warrant any declines and the dull market would preclude any advance. This year has been an exceptional prune year. Stocks remaining in first hands are very light and are being held for an advance which every one is confident will take place after New Years.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice		—@	8
Apples, extra choice to fancy, 50-lb boxes.	8½	@	9½
Apricots, Royal, good to choice, ℔ lb	7½	@	8¼
Apricots, Royal, fancy	8¼	@	9
Figs, 10-lb box, 1-lb cartons	.55	@	62½
Nectarines, White and Stanwick, ℔ lb	8	@	8½
Nectarines, red, ℔ lb		—@	8
Peaches, unpeeled, good to choice	8¼	@	8¾
Peaches, unpeeled, fancy to extra fancy	9	@	9⅞
Pears, standard, ℔ lb		—@	8½
Pears, choice to fancy	.10	@	12
Plums, Black, pitted	5½	@	6¼
Plums, Red, pitted	7	@	8
Plums, Yellow, pitted	6	@	8
Prunes, Silver, good to fancy	5½	@	8½

Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4½c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c; 80-90s, 2¾@3c; 90-100s, 2½@2¾c; small, 2¼@2½c.

COMMON SUN-DRIED.

Apples, sliced	5	@	5½
Apples, quartered	4¾	@	5½
Figs, White, in bulk	2½	@	3
Figs, Black	2¼	@	3

Raisins.

The market is practically at a standstill at the present writing, and no movement of any importance has taken place so far this season, notwithstanding that the big raisin season has already come and is now gone. The Eastern market has been quiet, and has been largely supplied by foreign and "outside" California raisins, or raisins grown by growers not affiliated with the Raisin Growers' Co., and handled by packers not bound by contracts with the Packers' Association. At a recent meeting called by President Kearny of the Growers' Co., for the purpose of taking steps toward the dissolution of the agreements existing between the Growers' Co. and the packers, the actual purpose of the meeting was defeated, and it was almost unanimously decided to abide by the existing contracts. In fact Mr. Kearny's position at the head of the Growers' Co. was materially weakened by the passing of a measure making it possible for the board of directors to depose the president at will.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box....1 40 @——

WOOL.

Have you any on hand and unsold? If so, tell us how much and kind, and we will give you valuable information that will help you in selling.

CENTURY MERCANTILE CO.

14 Sansome Street, - San Francisco.

London Layers, 3-crown, 20-lb box.....1 50 @——
Fancy Clusters, 4-crown, 20-lb box.....2 00 @——
Dehesas, 20-lb box.....2 50 @——
Imperials, 20-lb box.....3 00 @——
2-Crown Standard loose Muscatel.....5¾@ —c
3-Crown Standard.....6 @ —c
4-Crown Standard.....6½@ —c
Seedless Thompsons, 50-lb boxes.....6½@ —c
Seedless Sultanas.....5 @ —c
Fancy, 16-oz. Seeded.....8¼@ —c
Choice, 16-oz. Seeded.....8 c
Fancy, 12-oz. Seeded.....6⅝c
Choice, 12-oz. Seeded.....6⅜c

Citrus Fruits.

Lemons are weaker, prices having been affected by the cold weather and the large receipts. Oranges remain fairly steady, the top price of $2.50 per box being readily received for fancy stock. Grape fruit is weak and the market uncertain, owing to the small size of the new grape fruit now being received in the local market. Large, ripe fruit would bring an advance over these quotations.

Oranges, fancy	2 00	@	2 50
Oranges, choice	1 25	@	1 75
Oranges, standard	85	@	1 25
Oranges, Seedlings	75	@	1 00
Lemons, California, fancy, ℔ box	2 00	@	2 50
Lemons, California, good to choice	1 00	@	1 50
Lemons, California, fair to good	75	@	1 00
Grape Fruit, ℔ box, new	1 50	@	2 00
Limes, ℔ box	3 00	@	4 00

Nuts.

The nut market is quiet and shows a tendency toward a falling off of present prices, now that the Christmas demand has been supplied. Prices on both walnuts and almonds opened very high this year. The almond market, while nominally the same as at the beginning of the season, has fallen off considerably, while the walnut market (which has shown great strength up to the present time) now shows signs of weakening. This latter fact is probably accounted for by the inferior quality of the crop, many of the nuts being undersized.

Peanuts, fair to prime	4½@	5¼	
Cal. Walnuts, No. 1 soft shell	—	@	13
Cal. Walnuts, No. 2 soft shell	—	@	9
Cal. Walnuts, No. 1 hard shell	—	@	12½
Cal. Walnuts, No. 2 hard shell	—	@	8½
Almonds, IXL, ℔ lb	.11	@	12
Almonds, Ne Plus Ultra, ℔ lb	.11	@	12
Almonds, Nonpareil, ℔ lb	.11	@	13
Almonds, Languedoc, ℔ lb	7½	@	—
Almonds, Golden State, ℔ lb	7	@	—
Hard Shell, ℔ lb	5	@	—

Transfers of Holstein Friesians.

Recorded sales of registered Holstein Friesian cattle in California, reported for the PACIFIC RURAL PRESS by F. L. Houghton, Brattleboro, Vt., secretary of the Holstein Friesian Association of America:

BULLS.

Aleppo De Kol, M. Eshleman Sherman, J. L. Kinnear, Newman.
Minnewawa Julian, M. Eshleman Sherman, E. W. Brush, Modesto.
Sir Aaggie Del Kol Alban, Charles J. Welch, Louis F. Bambauer, Los Banos.

SCOTT VALLEY HOPS.—Etna special to Sacramento Bee, Dec. 13: It has been thought here for several years that hops could be grown in Scott valley to advantage. The experiment has never been given much of a trial. Chas. Holzhauser a few years ago put in a crop of hops and he has done very well with them since. Holzhauser has had no trouble of disposing of his crops. All who used them claimed they were of the finest quality. Shipments have been made to Sacramento and various cities in the State. He was awarded a gold medal for his exhibition at the Lewis and Clark Exposition.

The Orpingtons.

At the San Francisco show, W. S. Sullivan won 2d, 3d and 4th pen prizes; also 2d and 3d for cocks; 1st, 2d and 4th for hens, and 4th and 5th for pullets. The Orpingtons were the second largest class in the show, as they were at Alameda, where Mr. Sullivan won 39% of all awards. Being fine layers at this time of year, when eggs are high, the Orpingtons are fast coming to the front, where they deserve a place as all-purpose fowls equaled by few and excelled by no other breed known.

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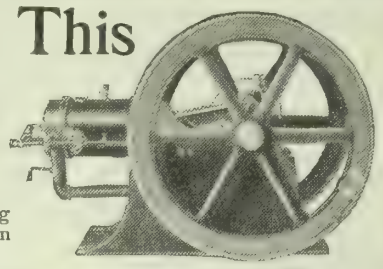
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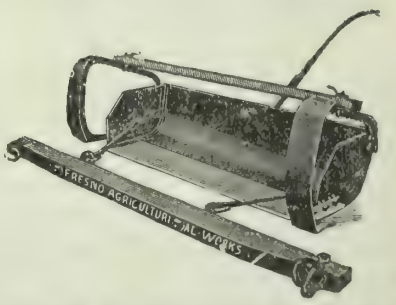
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Barnesville, Ohio, June 20, 1905: We were milking ten cows May 19. That day we took a Tubular separator for trial. **We used it one week and got 86 pounds of butter that week. The week before** we used it, we got only 65 pounds. **The week after** the agent took it away we got only 64 pounds. We felt we ought to have it. Later we arranged to buy it. We recommend the Tubular to anyone interested in cows. It surely will pay any one to buy a Tubular.

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THE GARDEN.

How to Keep Sweet Potatoes.

To the Editor:—I see in the last Pacific Rural Press an item about a wonderful keeping sweet potato. Any sweet potato will keep well if it is handled properly. I have kept both the sweet potato and the red yam on two different occasions for over eighteen months and then I sprouted them in hot beds and grown potatoes from them after that long keeping.

Why I Kept Them So Long.—I raise sweet potatoes and yams on the Merced river bottom and have done so for over thirty years. There have been two seasons that the June rise of water from the melting snow kept the river up so late in the summer that I could not grow the sweet potatoes that year. So I kept the potatoes over till the next spring and sprouted them and raised a crop the next year. The red yams that I speak of I got over thirty-five years ago from the East and I have never been out of the seed of them in all that time. You see, if I do not raise a crop I keep the seed over till another year.

The Secret in Keeping Them Over.—The sweets and yams both keep alike. I grow them without irrigation, or, rather, by sub-irrigation. I always dig them about the first of October, before the frosts come, or right after the first rains come. I dig them (do not plow) carefully, pile them in piles for eight or ten days, cover them with the vines. After they have gone through the sweat, I pack them in boxes, handling them very carefully; then I take the pure river sand, perfectly dry, and pour over the potatoes in the boxes. Shake the boxes till they will not hold any more sand, then pack the boxes in a dry room where the temperature can be kept even, and never allow them to get chilled. Handled this way, I will guarantee them to keep as long as you want them to. That is the way I keep them, and very seldom find a rotten potato in a box, unless they get wet before I get them dug—they then sometimes rot some. It is too much trouble for people to raise sweets and handle them this way for the market. We only raise enough for our own use and have them all the year if we want them. Now, the way they raise sweets around Atwater and Turlock and Livingston is to plow them out, pile them in piles, cover them up with the vines and they lie there in the field till it rains on them and the frosts come and they get chilled. Then they sack them up and throw them about and bruise them and they will not keep. You will find sweets lying in the field in piles until now. How can you expect them to keep? I have had mine stored away two months ago.

Sweet potatoes are not so hardy as the Irish potato, but if they are dug and handled carefully in the right time they will keep longer than an Irish potato, for the Irish potato will sprout in the spring and then wither away, but the sweet will not sprout as long as it is kept try. People may say this is a sweet potato story, but, nevertheless, it is true. R. A. Weaver.

Livingston, Merced county.

Growing Artichokes.

To the Editor:—In answer to one of your correspondents about artichokes, I will say that I am raising about 10 acres a year for hog feed. I plant them the same as potatoes, and the yield depends on the soil. It will run from 300 to 1000 buckets per acre. I am raising mine on high land, and get from 300 to 400 buckets. I read an article in an agricultural paper twelve years ago, in which the writer said that he had raised them for ten years for his hogs and never had a sick hog. I cut the account out, and for four years I planted some, and my experience has been the same as his. I dig only a few of mine, just enough to last through a cold spell, preferring to let the hogs do their own harvesting. I carried last winter 160 head of about 150-pound hogs with one sack of shorts per day, and they came out in fine condition, besides twenty old sows and their pigs. The hogs love them; even the sucking pigs are very fond of them. They come in at the right time, between fall and spring, grass maturing very late in October, and will keep in the ground until time to grow in the spring. Freezing does not injure them when left in the ground. Cows and horses eat them with avidity. A soil that stays moist late in the fall, and is loamy or sandy, is where they would yield large crops. The peat land, or river bottom land, of California would produce enormous crops, but the plant would have to clean out. On land that you can dry out, it is the easiest to kill them out, although hogs, if left on the land in the summer, will soon destroy them. E. C. Burlingame.

Walla Walla, Wash.

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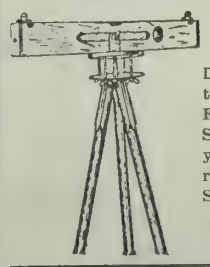
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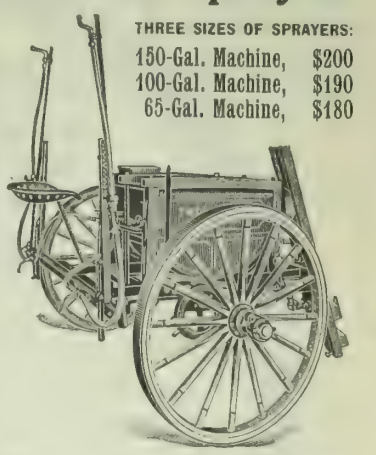
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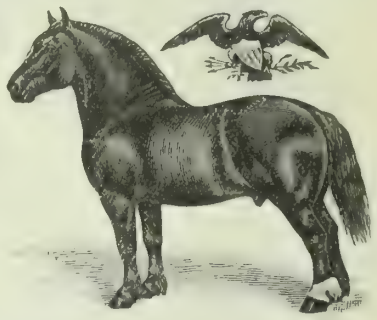
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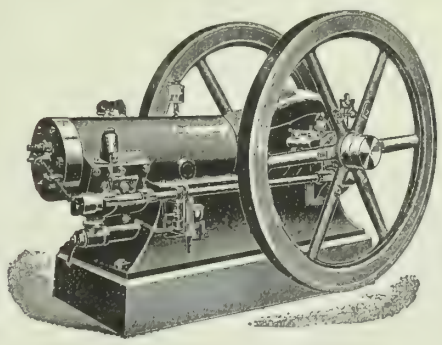
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THE VINEYARD.

Disinfection of Cuttings.

As the season for vine planting approaches a few hints regarding some necessary precautions in the choice and treatment of cuttings may be useful.

Every care should be taken to avoid any unnecessary risk of introducing serious diseases with the cuttings and roots used. There are only two serious diseases of the vine in California that are likely to be introduced on cuttings or roots. These are the phylloxera and the Anaheim disease. Such diseases as oidium (mildew) and erinose may be brought in by this means, but, as they exist practically in every vineyard district in the State and do not threaten the life of the vineyard, no particular precautions are necessary in their regard.

Of course, if a person is to have healthy, well bearing vines he must start with strong, healthy cuttings—therefore all cuttings showing poor growth, incomplete maturity or signs of disease should be rejected.

Oidium.—Cuttings sometimes show blackened, irregular spots or fern-like markings. They are a sign that they have been attacked by oidium. Such cuttings should be rejected, not for fear of introducing the disease into the vineyard, but because such cuttings will not make the strongest vines. A good cutting should have a clear, smooth bark, a solid, light colored pith and hard wood.

Anaheim Disease.—A cutting badly attacked by this disease will not show the characteristics of a good cutting given above. It is possible, however, to have a cutting taken from a slightly diseased vine which will have these characteristics but which at the same time is quite capable of introducing the disease. As there is no known means of distinguishing such a cutting from a cutting taken from a healthy vine, the only way to avoid the introduction of this disease is to use no cuttings which come from an infected district, as there is no known method of treatment that will free a cutting or root from infection.

Wherever possible the best thing to do is to obtain cuttings in your immediate neighborhood. Where this is impossible all that can be done is to avoid all the regions where the Anaheim disease is known to exist.

These regions as given by N. B. Pierce in his address to the twenty-ninth Fruit Growers' Convention are: (1) All of southern California; (2) the upper end of the Sacramento valley, including Tehama, Butte, Colusa, Yuba and Sutter counties and (3) the Santa Clara valley, including San Mateo, Santa Clara, Santa Cruz and Alameda counties.

While the disease may not exist in all parts of all of these regions it is impossible to define its exact limits and therefore it is unsafe for a vineyardist in a county presumably free from the disease to get cuttings or roots from any part of a county where it exists.

The disease is so serious, and with the present knowledge so nearly incontrollable in practice, that it would be folly to run any risk that can be avoided by allowing it to enter a new region.

Phylloxera.—The only case where cuttings need disinfection from phylloxera in California is when they come from a region which is not known to be free from this disease, and are to be planted in a vineyard which presumably is free from it.

The phylloxera as it occurs in California is exclusively a root feeding insect and the danger of introducing it on cuttings, even when these cuttings are taken from infected vineyards, is very slight. The danger of introducing it on rooted cuttings is, however, very great if these have been rooted in a region where phylloxera occurs, and as there is no known certain means of ridding the cuttings of the eggs of the insect without destroying the plant, no rooted vines should be taken from phylloxera infested regions to one that is ree from the pest under any conditions.

In certain seasons, in some years many of the insects come out of the ground and lay eggs above the ground portion of the vines. These eggs hatch very shortly and produce the sexual insects which lay the winter eggs to which the danger of infection by cutting is due.

The winter egg remains where it is laid all winter and does not hatch until the following spring. When the female insect prepares to lay the egg, it crawls from the leaves and upper parts of the vines where it has been hatched to the canes, follows these canes until it reaches a piece of rough bark where it can find the necessary shelter and deposits its single egg. As the canes of most vines are perfectly smooth and without crevices, the great majority of the eggs are laid in the 2-year-old wood near the base of the canes. A few of them, however, may be laid in the rough places found occasionally on the 1-year-old wood or under the bud scales in the same place.

As the eggs are so small that it is impossible to detect them in practice, some disinfection method is necessary that will insure the destruction of any winter eggs that might possibly be present. No cuttings, which have a piece of old wood at the base, should be taken, as this much increases the danger of eggs being present.

The only method of disinfection which has been found safe and practicable is the proper use of bisulphide of carbon. In the next paragraph is an extract from Bulletin 131, "The Phylloxera of the Vine," published by the Agricultural Experiment Station at Berkeley. It will explain the method of operation. The time of treatment is a very essential factor. If treated for too short a time, some of the eggs may escape and if too long, the cutting may be injured. If the time is at least one hour and does not exceed five hours, there is no danger from either cause.

The method of using the bisulphide is as follows: Place the cuttings in a barrel, vat or box made tight by means of a thick coat of paint, or of paper pasted on the inside. On top of the cuttings place a saucer or other shallow dish, into which pour the bisulphide of carbon. An ordinary saucer will hold enough for a box 3-foot cube or a 200-gallon vat. For larger receptacles it is better to use two or more saucers. Deeper vessels will not do, as the saturation is not sufficiently rapid. After pouring the bisulphide into the saucer, cover the box with an oiled canvas sheet or other tight-fitting cover, and allow to stand from forty-five to ninety minutes. At the end of this time there should be a little of the bisulphide left. If it has all evaporated this is proof that insufficient was used. No flame lights should be used, as the liquid burns easily and the fumes form an explosive mixture with the air. Care should be taken not to spill any of the liquid on the cuttings, as it may kill them. It is advisable to cut off about ½ inch of the lower end of the treated cuttings before planting, as the vapor injures the open pitch.

Besides disinfecting the cuttings in this way, all the packing material in which they came should be burned, or, if valuable, dipped in boiling water. Practically it is impossible to disinfect rooted cuttings satisfactorily on account of the difficulty of killing all the phylloxera without seriously injuring the vine roots.

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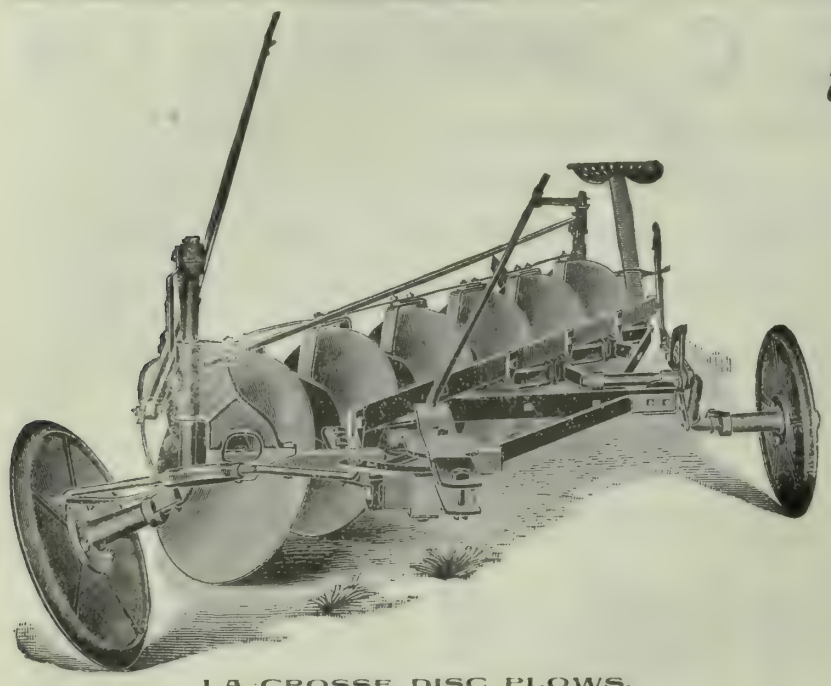
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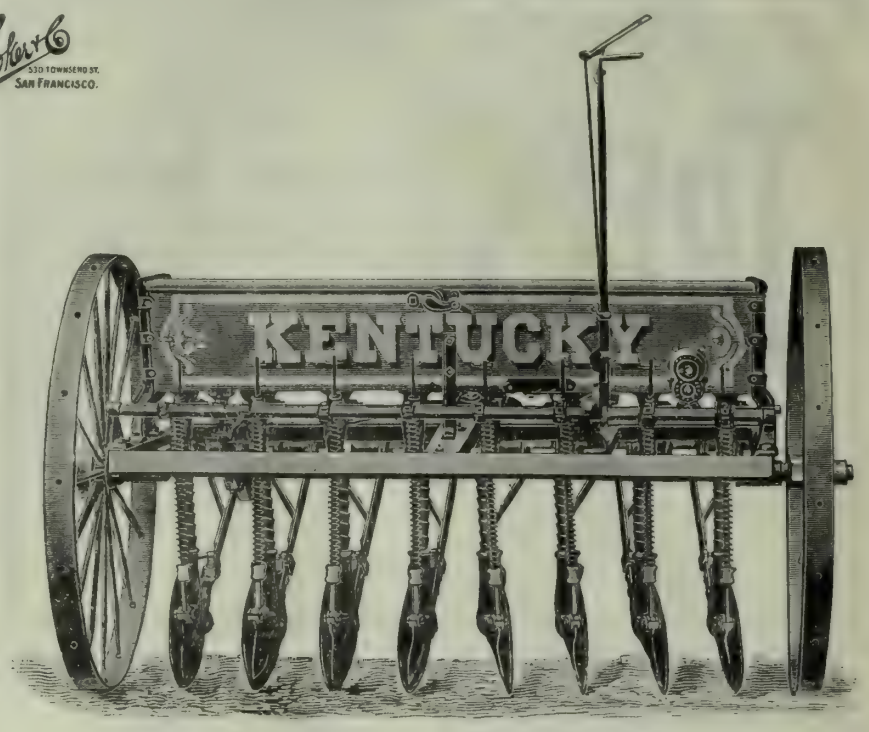
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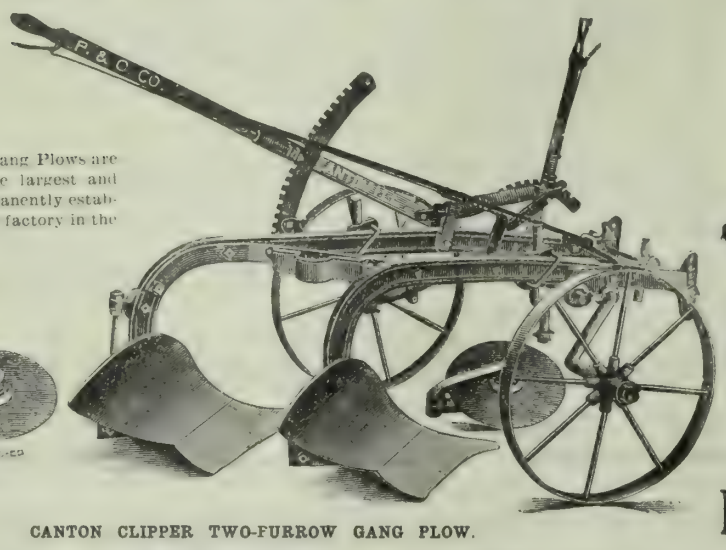


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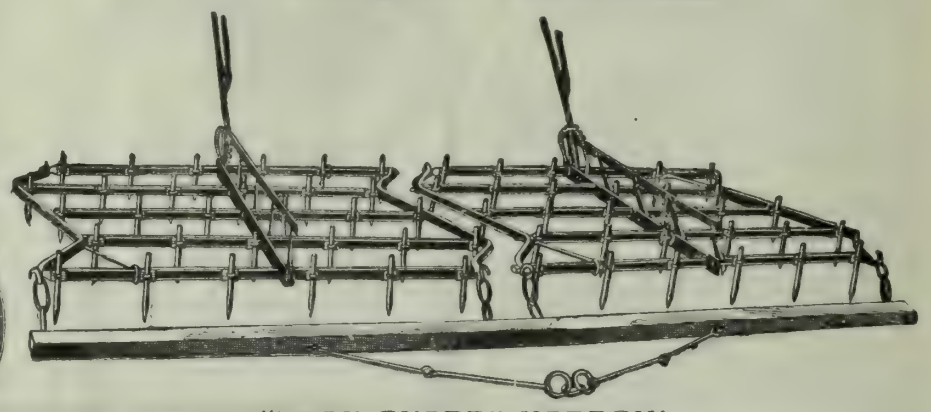


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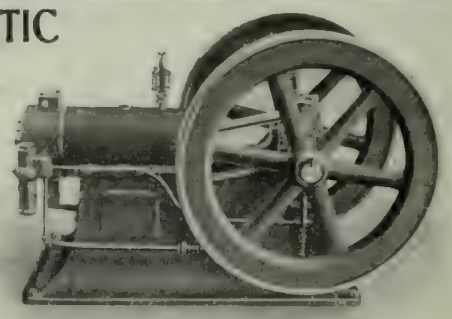
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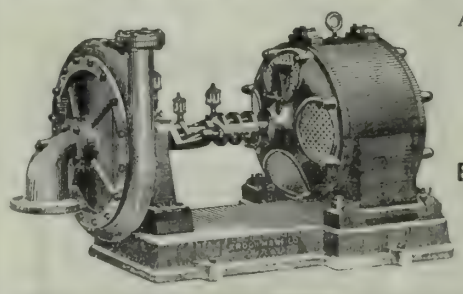
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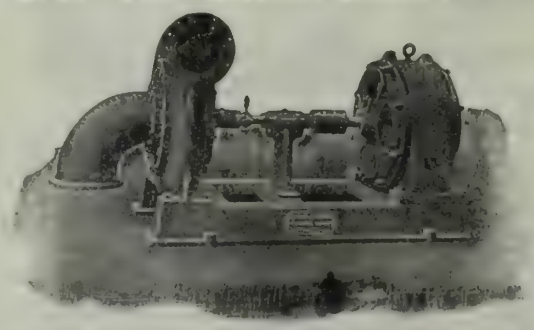
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AND CALIFORNIA FRUIT BULLETIN.

Vol. LXX. No. 27. SAN FRANCISCO, SATURDAY, DECEMBER 30, 1905. THIRTY-FIFTH YEAR. OFFICE: 330 MARKET ST.

Live Waters of the Sierra Nevadas.

A few issues ago the PACIFIC RURAL PRESS contained an interesting description of a number of lakes in the higher altitudes of the Sierra Nevada mountains, within the watersheds of the South Fork of the American and the North Fork of the Cosumnes rivers, commonly known as the American–Cosumnes region. Following this description of the still waters of this locality we now publish a narrative of the live or running waters of the same district. The 400 square miles comprising this great mountainous drain area contain some of the most beautiful streams in the world. This is the zone from which it is proposed that San Francisco will draw her future water supply, and therefore is of great interest to the people of the coast metropolis at this time.



Diversion Dam on South Fork.



The River from Echo Lakes.

The lakes described in the preceding issue are really pockets in the granite, filled year by year with water precipitated upon the mountains above them, and ultimately passing away through the rivers to the sea. Of these Sierran rivers, the American, with its various forks, is probably the greatest of all. The watershed is flanked by naked reddish peaks on the north, and by the jagged blade of high mountains on the south, the enormous gap between being filled with bare buttes, edged with trees, among which the several forks of the American rise; of these the South Fork, heading in a lake near the summit of the Sierras and fed by the numerous tributaries, almost all of which start from one of the granite saucers forming the great chain of the Sierran lakes, is the most important.

From the summit of the southerly bounding range, and on the apex of the great divide, where here flow the waters to the Sacramento and yonder to the Colorado, a most striking view can be had of this yawning wilderness in which the river finds its head. It is known as the "sight from the Amador Spur," and is graphically described by a writer who recently followed the summit of this southerly range from the roadhouse of Kirkwood down to the great reservoir site of the Cosumnes.

The bed of the American—and when we speak of the American we mean essentially the South Fork—presents a sight difficult of duplication, even in the river regions of the Sierras. The stream in summer is a modest, swiftly flowing current of the most beautiful water, cold and clear. It makes its way gurgling amidst smoothly worn stones, touched with white in its swirling eddies. Pleasant and harmless at its lower stages, yet it presents all around it evidences of the most cyclopean action. An enormous passage has been torn out of the adjacent hills, and the interval is strewn with vast boulders hundreds of tons in weight. Through this broad gulch in the winter season the wild surging waters rush on, roaring and tearing, carrying billions upon billions of gallons to the sea. About 12 miles from its source the river is diverted, and part of its flow enters the El Dorado Canal. This canal is a wide, secure run, in which the water moves quietly, though in large volume. The canal is 20 miles in length and carries approximately 100,000,000 gallons of water per day. This will deliver into a tunnel to be driven through the southerly trend of mountains dividing the American from the Cosumnes rivers. This tunnel, cut through the solid granite, will be about 2500 feet long, and almost at its mouth is to be a great reservoir. This is the "Cosumnes Relay," one of the most striking features of the Cosumnes river.

Farther down stream, just below Buck's bar, occurs the great gorge known as Cosumnes canyon, an enormous cleft in the solid granite, one of the most remarkable and picturesque sights in the Sierras. Vast, high walls, steep and smooth, arise on either side of the narrow stream bed, the angles of the walls describing almost perfectly the letter V. In this gap the wedge of a masonry dam will be thrust, and then the waters of the Cosumnes and the flow from the American will be backed up in a grand arena with a level floor hedged by high hills, which comprise a reservoir site in which billions of gallons of water may be stored. Thence, by canal, flume and tunnel along the precipitous walls of the rugged canyon, the water is to be conveyed to a point far above the rapidly falling stream bed, whence it is to be dropped back through pressure pipes and water wheels, rotating dynamos for the generation of electric power, and discharging into the intake of the great pipes which, it is designed, will bring it to San Francisco. Thus will the city secure 100,000,000 gallons per day of the purest and best water on earth, and be enabled to distribute it to the people at low rates.



South Fork of the American River.



The Lower Gorge of the Cosumnes.

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The Week.

We go to press in the midst of the Christmas season and our observation is that Californians are entering into the joys of the time with exceptional vigor. Our duties have led us during the last fortnight into more than a score of interior cities and towns, and have thrown us into all kinds of public conveyance. Such exceptional opportunities for touching the pulse of the people have shown that the holiday spirit burns with marked ardor and that the impulse of these buoyant times reaches to all classes of our population. It is not alone in the great cities that throngs have to wait for service at public places of trade, transportation and communication. We had to stand in line the other day for fifteen minutes to send a telegram from a remote town of only a few hundred people. Railway trains are thronged and running in sections. Local freight and express handlers everywhere are rushed to the limit. This not merely Christmas traffic; it is this superimposed upon the increased common traffic caused by the activity in all our industries. The busy scenes which one sees everywhere, even in the newest opened districts, are an exponent of the wonderful popularity of California as a place for homes and for investments.

Our observation abroad in the State also shows forcibly the inadequacy of existing means of transportation. Both for incapacity and infrequency the old lines of travel stand impeached by the present demand for service. It is, therefore, no wonder that trolley lines are being built in all sections, and extending in all directions. From what we see it appears that the present mileage of steel rails will be doubled in a very short time, possibly within a year, for the present building is very rapid. Many localities are beginning to feel the advance in valuation which better transportation facilities ensure whenever the general spirit of confidence and investment prevails. These trolley lines are also striking at the very heart of producing enterprises—they reach to the very center of colony tracts, they penetrate great orchards, vineyards and truck gardens, they propose to cut into the traffic by lessening or doing away with the hauling to distant outskirting railways, which have hitherto maintained rather a proud attitude because all things had to be brought to them. The trolley lines will teach the old lines that it is not only good for the people but good for the enterprises themselves to seek the producer and give him a square deal with the least inconvenience to him. In this way they will help the elders by teaching them a more youthful spirit. The old idea that the transportation companies were conferring a great benefit in developing the country is true enough, but it is not at all out of harmony with the newer idea that transportation which helps the country best by reducing inconvenience and expense also helps itself best by the same policy.

These considerations, which might be looked upon as, in a sense, Christmas gifts which the newer age makes to the people of California, reminds us of the thankfulness which individuals may well feel for the gift of life which has enabled them to experience these blessings which older Californians worked for, but passed away without experiencing. It is really a great pleasure to live in this newer life of the State. This reflection is always present with the writer, because it has been his privilege to make a broad study of the industries of California for so long a time. Thirty years ago this week he began a relation to the issuance of the Pacific Rural Press, which has continued without interruption to this time. In all these thirty years, every issue of this journal has received his customary contribution and the Christmas season of 1905 therefore appeals to him very strongly and makes him very thankful to Almighty God that he has had the gift of health and strength to pursue a delightful occupation to such a length, to enjoy the other gifts of knowing and ministering to so many thousands of grand people and to clearly see how their earnest, enlightened work has brought California to the eminence which it now enjoys as a most desirable land to live in and to work in. Looking backward at this moment, he recalls so many who have done bright, effective things in their thinking and working which have helped thousands of others to reach success and satisfaction and thus have proved powerful factors in the present industrial condition of the State, which is so delightful to contemplate. Of course, these people, as a rule, builded better than they knew. They strove for the best they could attain in the several tasks which appeared in their ways, and undoubtedly accomplished more for the general good than if they had conceived themselves to be heroes charged with atlantic duties to the commonwealth. Such conceptions would probably have made them visionaries and destroyed their real force in affairs. For it seems to us that it is fair to argue in industry, as in spiritual and moral affairs, that a good deed is never lost, but that its influence proceeds in extending circles until it invades eternity. Possibly the influence of a good deed in industry is bounded by time, but in all save this limitation the analogy must hold. Therefore, perhaps our greatest pleasure in looking back over this thirty years is remembering that we have known so many men and women who have made California great in industry—that we can recall their ambitions, told to us in confidence, that we know how faithfully they labored in their little affairs and how great achievements have sprung from their individual efforts and impulses. And after all, what is greater in the affairs of the world than to pour the full measure of one's honest aspiration and energy into a task and to succeed? The idea is old, of course, but not less true for that. It is our great joy and thanksgiving at this completion of three decades that we still live to cherish the memory of those who did so many forceful things and to realize what their faithful service has accomplished for the State they loved so well.

The appearance of the index upon the last page of this last issue of the half-year volume affords opportunity to emphasize what we conceive to be the distinctive character of the Pacific Rural Press. A glance at the index will convince anyone of the host of timely and important topics which have been brought to the attention of readers. These topics will easily be seen to be those of the closest practical value to our constituency. They reflect the drift of the agricultural thought and action of California and the multitude of them shows the breadth of our field and the attention of the publication to all its phases. Follow the indications of the index into the contents of the volume and this will be discovered: That the treatment of the different subjects never loses sight of the central thought of being useful—of helping people to do the things which are described. We are not content with filling space with generalizations, but desire always to show, as far as possible, how any desirable thing may be actually done. This method might, perhaps, make the journal dull to the general reader, but, to the one who reads as a guide to work, the details are essential. We are apt, therefore, to suppress many bright ideas to find room for plain, helpful facts. Another method in our work brings us into close personal contact with those whom we aim to serve. We doubt if any technical journal knows its constituency better or keeps in such close contact with its working spirit. Still another method lies in the constant use of the referendum principle in reaching the actual truth as it is evolved from investigation and experience. These and other lines of editorship not only lead us directly into the midst of the agricultural life of California, but hold us there and contribute in a large measure to the general reputation which the journal enjoys for agricultural wisdom and for conscientious accuracy. As our field widens with the general development of the State, we find ourselves more and more inspired by the effort to maintain such a character, which is itself not only a working capital but a priceless endowment which leads to still greater advancement of the journal and the interest which it serves.

California agriculture is rapidly advancing upon the subdivision of our best agricultural lands into smaller holdings, and so long as the subdivision does not reach to poor lands or to too minute division of good lands, it seems to us for every reason commendable. We have, however, had many occasions to protest against the too common claim that there is some virtue in the act of subdivision as such, and that the smaller the piece of land the better for family income and prosperity. Many disappointments have resulted from this policy in subdivision, and we see many places remote from cities where the holdings are too small for satisfaction and too much is expected from acre-income. Still we are not ready to accept the reasoning which we see indulged in to get comfort from the fact that accretion and not subdivision is the course of affairs in other States. For instance, we find in an exchange as follows:

> In a recent State census report of Iowa, which is reported to show a falling off of 2% in the population of that great and prosperous State since the general census of 1900, the explanation offered is that it is all due to the land hunger of the prosperous Iowa farmer. Having money ahead and well knowing that good farm land in the Mississippi valley is one of the safest and most profitable of investments, he has been buying in the adjoining farms of his less forehanded neighbors to such an extent, the reports say, that vacant farm houses dot every township in the State.
>
> If Iowa follows the course of development that has been going on for many years in the magnificent farming regions of central Illinois, the consolidated farms will be leased in tracts of 80 to 320 acres, or more, to thrifty and prosperous tenant farmers.
>
> The process as it has gone on in Illinois for a number of years is that the wealthier land owner buys out the forty and eighty-acre farms of his neighbors, tile drains and otherwise improves them, often renting the same land or larger tracts to the venders, who generally made more money as tenants than they had done as owners. The tenant farmers of central Illinois put their capital into the best of farm implements and machinery and live stock. Their prosperity is seen in their comfortable and well-furnished houses, the well-kept vehicles and horses with which their families drive to church and to country gatherings. In central Illinois just now the tendency is to larger farms, the tenant generally desiring to increase his area, and the landlord, regulating the quantity of land he will lease by the proved capacity and success of each tenant. For its best farm lands Iowa appears to be approaching the same system.

We are fearful of that reasoning and doubtful of the data upon which it proceeds. It is possible that the independent standing of the American farmer, which has been the strength of the country in all of its perils, has been over-valued. Can it be shown that the system of tenantry of Europe is better than the freeholding of the United States? That is the question which is reached in the end of the inquiry. Of course advanced farming depends upon the amplitude of capital for improvements and equipment, so that the production may be both cheapened and increased, but is it better for the State that it should be in the hands of the landlord? That is quite contrary to American reasoning hitherto. It rather looks to us as though the writer of the paragraphs we have quoted was whistling to keep his courage up.

QUERIES AND REPLIES.

Alkali as a Fertilizer.

TO THE EDITOR:—A wheat grower wishes to know if it would pay to apply alkali scraped from alkali lands of San Joaquin plains to depleted wheat lands of adjacent foothills, transporting the same about 20 miles. I have informed him that there would be practically no hope of a commercial result. But, having no figures pertaining to the matter at hand, it has occurred to me that it might be of interest to others, as well as to him, to have an article on the subject, giving, at least approximate, weights and commercial values of components of these alkalies, of which no doubt you have analyses at hand. —READER, Merced Falls.

Perhaps we may at some convenient time be able to work up this matter from analyses, as you suggest. At the moment, however, it may be enough to say that you are right as to the negative commercial value of the undertaking. There is in the alkali efflorescence so much that is either destructive, or, at least, useless, as compared with the little that is useful, that the undertaking is not economical, to say the least of it, and if indulged in to any extent is dangerous. Another negative indication is that the proposition is not at all new, but has been acted upon from time to time for a quarter of a century and subsequently abandoned by all who have taken it up. It is reasonable to think that if there was anything in the proposition wide-awake wheat growers would not have put it into practice years ago. Or, is it reasonable to think that fertilizer dealers, who are bringing substances which furnish plant food from the uttermost parts of the world and selling them in our markets, would not have seized upon these proximate supplies? The percentage of undesirable substances, the occurrence of the modicum of good, which there is in the efflorescence, in connection with a mass of impurities from which it can not be economically separated—these are reasons enough to warrant your friend in letting the alkali alone or in undertaking drainage enterprises to get it into the ocean, and not in scraping and hauling to get it on the uplands from which it will be brought down by irrigation water to be again spread over the valley lands, which are better in the absence of it.

Orange Splitting and Fertilizers.

TO THE EDITOR:—Near Modesto, Stanislaus county, are many orange trees and not a few "groves." Since we have perfected the Modesto and Turlock irrigation districts, where the water belongs to and is managed by the people, independent of any monopolist or corporation, citrus fruits are becoming quite an industry. The fruit ripens for Thanksgiving and Christmas holidays. Mine are on fairly heavy, though not exactly adobe, soil. The fruit hereabouts, this season, split quite a little early in the season, and is not up to the average of former years in size. Can you tell the cause of and remedy for splitting? Would not fertilizing improve the size? If so, what is best to use? If commercial fertilizers, what brand; when, how and in what quantities applied?—ORANGE GROWER.

Most of your questions cannot be definitely answered in the present state of knowledge on the subject. Orange splitting is probably analogous to the cracking in other kinds of fruits and is, conjecturally, due to quick changes in atmospheric conditions in moisture, and possibly in temperature also. There is a mass of evidence on the connection of changes in soil moisture and in available amounts of plant food by fertilization, but it is too contradictory to warrant conclusions. As to the cause of splitting then it is, therefore, safest to say that we do not know. It is true that splitting has been bad everywhere this year, and the crop, as a whole, is running to smaller size, and both these things are seen in connection with all degrees of fertilization and watering. Just how to fertilize the orange is also a question which even those who have used most fertilizers cannot answer to their own satisfaction, and yet they are sure that they must continue to buy fertilizers. Accurate experiments are now in progress in the hope of finding out something. One thing is, however, pretty sure, that if you use stable manure according to the requirements of the soil and do not overdo it, you will have trees of better color, freer growth, and fruit running to larger sizes. But go at it easy; do not use too much. Let the tree tell you how it likes it, and warn you when you are reaching the danger point in overfeeding.

Peach Troubles.

TO THE EDITOR:—What is best to do with disease that comes on the peach trees? In the spring the leaves drop and the trees look like a fire had gone through them. Some call it shot-hole fungus. It is especially on the Orange cling. There is another trouble on my young Phillips cling and some freestones. The leaves become large, rank and all shapes, and after a time shrivel up and most all drop. What is best to do, and what kind of a spray to use and when to use it? I always spray every spring with lime, sulphur and salt cooked together.—GROWER, Kingsburg.

You have peach cure for one thing and you may have some other less easily explained trouble which was particularly injurious last winter because of the continued cool and wet weather when the tree ought to have had more heat for growing well. The best thing you can do is to give the trees a good treatment with winter form of Bordeaux mixture. Many other peach growers should do the same thing, so we give the Pierce formula, which has been widely approved, as follows:

Five pounds copper sulphate (bluestone).
Five pounds quicklime.
Fifty gallons water.

Dissolve the copper sulphate (bluestone) in a barrel containing twenty-five gallons of water. Slack the quicklime and then add sufficient water to make twenty-five gallons of milk of lime. Unite the two solutions by pouring one pailful of each at the same time into a third barrel. The milk of lime should be well stirred while being dipped from the barrel and should be passed through a fine wire screen when poured into the mixing barrel, but the copper solution should not be passed through the screen. Stir the mixture thoroughly at first and also occasionally while being applied as a spray to the tree.

In the preparation of the Bordeaux mixture it is necessary that the ingredients should be mixed in a wooden vessel. If an iron vat is used for dissolving the copper, it will go to the iron and the effect of the spray is largely neutralized. After it is prepared the mixture may be applied to the trees from the usual galvanized iron spray tank. Apply the remedy cold and as soon after it is prepared as possible. Never allow it to stand over night. The above spray is a fertilizer and invigorator of the tree and will effectually prevent curl leaf if applied very thoroughly from one to three weeks before the buds open. It can be applied with safety until the buds finally burst into full bloom.

Crimson Winter Rhubarb.

TO THE EDITOR:—By a southern California nurseryman I have been advised to write to you for information as to whether Crimson Winter rhubarb will be injured so as to be unmarketable by a temperature of 25° F. If you know of any literature on the subject of raising Crimson Winter rhubarb, kindly inform me of it and where I can procure it.—ENQUIRER, Gilroy.

Although we have never seen the plant endure 25° F., because in our garden at Berkeley the temperature has not gone below 27°, still we are quite sure that the plant will stand that limit, at least, because we know of it growing in valleys north of the bay where such a temperature is to be expected. You can get literature on the plant by addressing our advertisers who offer the plants.

Oiled Ditches—Pea Weevils.

TO THE EDITOR:—Has crude oil been used in place of cement in irrigation ditch? If so, what results? Is it advisable to plant peas that have some bugs in them? Can the bugs be killed in any way before planting? How would sulphuring or bluestoning do? —A SUBSCRIBER, Sacramento county.

Oiling ditches to prevent seepage has often been proposed. Who can give results of experience with it? Pea weevils can be killed by the use of bisulphide vapor, as described for disinfecting vine cuttings in our Vineyard department in last week's issue.

Dangerous Scrubs.

TO THE EDITOR:—Will you please answer in your queries if it is a misdemeanor to let a male animal run in his own field, if the fences are not good? Please state the law in California regarding such.—SUBSCRIBER, Arbuckle.

We do not know of any law except an action for trespass and damages and that recourse does not amount to much, probably, for owners of pure bred stock are kept awake nights by worrying over the danger and have been for as long as we can remember. If we are right there is no adequate remedy except to fence out such intruders and to shoot them if they break in.

Sap Sucker.

TO THE EDITOR:—I desire to obtain information about the piece of orange bark enclosed. The trees are grown in the oak woods, and I would like to know whether it is an insect or woodpeckers doing this mischief. The holes are eaten through the bark only. What can be done?—GROWER, Knights Ferry.

It looks to us like the work of a "sap sucker," one of the woodpeckers, as you intimate. We know no remedy save to watch for and shoot the bird.

WEATHER AND CROPS.

Report of the U. S. Weather Service for Week Ending December 26, 1905.

ALEXANDER MCADIE, Forecast Official and Section Director.

Sacramento Valley.

Cool and cloudy weather prevailed most of the week; light showers Tuesday and Wednesday. Dry northerly winds and much colder weather followed the rain and severe frosts occurred in most places. The rain was beneficial, and in some sections plowing and seeding were resumed. Grass has started a little, but feed is scarce and stock are in poor condition. Early sown wheat is very backward and needs warmer weather and heavy rain. The grain acreage will be far below that of last year unless more favorable conditions prevail. The frosts caused no damage, as all late crops have been harvested. Orange harvest is practically completed; the crop is about average in yield and quality.

Coast and Bay Sections.

Cool and cloudy weather prevailed nearly all the week with frequent heavy frosts. Generous rains fell in the central and northern sections and light rains in the south. High winds prevailed in some sections on the 21st and 22nd, but caused no material damage. The soil is now in very fair condition and plowing and seeding are progressing rapidly. Grass has made a good start, but warmer weather is needed for that and early sown wheat. All vegetation is backward, owing to the continued cool weather and scanty early rainfall. Oranges are looking well and there are no reports of damage by frost. Pruning is in progress in vineyards and orchards.

San Joaquin Valley.

Cold, cloudy and foggy weather prevailed during the past week, with light showers on Wednesday and Thursday. Killing frosts occurred several mornings and caused considerable damage to the olive crop. The orange crop was harvested before the cold spell and escaped damage. The late showers have improved the ground for farm work and plowing and seeding are making good progress. Green feed has started, but made little growth owing to the cold weather. The snow in the mountains is disappearing rapidly. Pruning orchards and vineyards is progressing. In all parts of the valley stock are thin and are being fed. Rain and warmer weather are needed for green feed and farming operations.

Southern California.

Light showers at the beginning of the week were beneficial to grain and grass. Clear and cool weather followed the rain and severe frosts occurred in many places. High winds caused slight damage. Timely warnings of heavy frosts were given, and, as they were generally heeded, it is probable the damage to oranges was very light. Tender new growth and lemon buds were somewhat injured. Grain is looking well and making excellent growth. Seeding is nearly completed in some sections and progressing rapidly in others. The grain acreage will be unusually large. Grass is making good growth and green feed is becoming quite plentiful.

EUREKA SUMMARY.—Rain fore part of week put ground in good condition to plow. Heavy frosts caused no serious damage to crops, but cold weather retarded growth of vegetation.

LOS ANGELES SUMMARY.—Clear and warm weather was followed by cold, with severe frost at end of week. Reports give meager information; some say tender citrus growth, young trees and small lemons were injured, others no injury. Extensive smudging saved much fruit; where there was no smudging in exposed orchards much fruit was badly frozen.

Rainfall and Temperature.

The following data for the week ending 5 A. M. Wednesday, December 27, 1905, are from official sources and are furnished by the United States Weather Bureau for the PACIFIC RURAL PRESS:

CALIFORNIA STATIONS.	Total Rainfall for the Week	Total Seasonal Rainfall to Date	Total Seasonal Rainfall Last Year to Same Date	Average Seasonal Rainfall to Date	Maximum Temperature for the week	Minimum Temperature for the week
Eureka	.53	8 64	13.33	17 44	56	32
Red Bluff	.06	2 67	12.10	10 53	52	26
Sacramento	.10	1.56	8 29	7.20	52	28
San Francisco	.67	2 57	9 63	8.69	56	40
San Jose	.56	3.16	5.38		54	30
Fresno	.02	1.26	5 07	3.38	18	28
Independence	.00	.43	.45	1 36	54	14
San Luis Obispo	.08	2 12	4.73	5 57	66	26
Los Angeles	T	3.11	1.90	5.31	72	36
San Diego	T	4 41	1 82	2 99	68	38
Yuma	.02	3 45	91	1.62	68	30

THE FIELD.

University Distribution of Seeds and Plants.

By E. J. Wickson, Acting Director of the University of California Experiment Station.

Last year's distribution was largely confined to the dissemination of cereals. This seemed justified by the urgent need of improving the quality of wheat both for local milling and for export, and by the opportunity to largely increase the exports of brewing barleys. The interest in improved cereals was demonstrated, and it seems desirable to minister to it in this year's offering also, and to add a number of attractive things in other classes of plants.

Aims and Methods of Distribution.—To reduce as much as practicable the vast amount of correspondence which is entailed upon the station by the distribution, we desire that the following points should be carefully considered by the applicants:

First.—Do not apply for things not mentioned in this bulletin. We cannot usually supply things previously offered for distribution.

Second.—We require the applicant to pay a small amount for each article, partly to bear the cost of collection and distribution, but chiefly as a guaranty that he has not merely an idle desire for what can be had for nothing, but intends to make trial for a definite end and will report results to us.

Third.—Applications may be made for one or more kinds of seeds, but an applicant should not order more than one package of a kind. If the supply of any kind of seed becomes exhausted the money will be returned, unless a second choice is mentioned by the sender. Postal notes are requested instead of stamps, whenever practicable. Any surplus left after filling orders will, as far as possible, be returned to the senders, deducting letter postage.

Fourth.—This distribution is conducted in co-operation with the Section of Seed and Plant Distribution, Bureau of Plant Industry, United States Department of Agriculture, and wherever Nos. are used they are the inventory Nos. of that section and should be preserved by recipients and used in their reports to us.

Wheats.—Painstaking and comprehensive work for the improvement of California cereals, and chiefly for the advancement of the quality and yield of wheats, is now proceeding in co-operation with the United States Department of Agriculture, the California participation being provided for first by donations from interested individuals and subsequently by an appropriation of the last Legislature. While this work is proceeding, it is important to secure trials of varieties by individual growers for comparative purposes. The following are therefore offered:

No. 9358. Beloglina. Of this variety Mr. M. A. Carleton, Cerealist of the United States Department, writes: "It is practically the same as the Kansas Hard Winter recently tried in California with apparent success in a number of places." We can furnish this variety in 1-pound packages, 15 cents each, postpaid; or in 10-pound sacks, 25 cents each; express charges to be paid by the receiver.

No. 15,801. Fretes. This is a promising bread wheat of the winter type; matures early and is adapted to semi-arid conditions. It is more rust resistant than the common California soft wheats. Seed in 1-pound packages, 15 cents each, postpaid.

No. 15,802. Chul. A winter wheat of the bread class; matures early; rather more liable to rust than the preceding. Seed in 1-pound packages, 15 cents each, postpaid.

Barleys.—Continuing the effort to secure good barleys from abroad, or at least to determine if any of them are superior to the common kinds of California, we offer the following varieties in 1-pound packages, 15 cents for each kind ordered, postpaid, as follows:

No. 12,023. Smyrna Brewing. Secured abroad by Mr. George C. Roeding, Fresno, and proving very strong growing and productive under trying conditions.

No. 11,620. Black Smyrna. Another variety secured by Mr. Roeding, and worth wider trial for hay and feed purposes.

No. 15,799. Tennessee Winter. Commended for trial in California by Mr. M. A. Carleton.

Nos. 5682 and 11,622. Hanna, or Moravian. This is proving very valuable in California, and has had wide popularity from our earlier distributions. The seed is in the trade, but we offer it again for small experiments in new localities.

No. 5893. Nuremberg. A hardy variety, carrying good heads on stout, stiff straw.

No. 5854. Funfstettener. A brewing variety from Bavaria, producing a very handsome grain.

No. 9877 Mariout. An Egyptian variety commended by the Khedivial Agricultural Society.

Oats.—Oats are gaining popularity in California, both for hay and grain purposes, also for green feeding in winter. We need especially hardy, rust resistant varieties, and the following should be widely tried to determine suitability. We offer seed of the following varieties in 1-pound packages, 15 cents each, postpaid:

No. 15,655. Culberson Winter. The Department at Washington furnishes us a liberal supply of this variety, desiring a thorough trial in California. Those who desire may order 10-pound packages at 25 cents each, express charges paid by receiver, instead of 1-pound packages by mail.

No. 12,878. Dun.
No. 15,798. Applerust Proof.
No. 15,856. Burt.
No. 15,857. Sixty Day.
No. 15,858. Red Algerian.

Rye.—Rye is also advancing in importance as a California cereal. The following should be tried by those who are growing the common variety. We offer 1-pound packages, 15 cents each, postpaid, or in 10-pound packages, 25 cents, express charges paid by receiver.

No. 15,800. Abruzzes. A superior rye grown in the Abruzzes province, a mountainous district east of Rome. The strain is one of the best known in Italy.

Acacia Trees.—We offer two acacias which have proved very satisfactory in Berkeley, on shallow soil with very little water, as likely to be widely useful in beautifying waste places, and to prove of some economic importance. Seed in small packets, 5 cents for each variety, postpaid.

Acacia Longifolia. A tree 20 to 30 feet in height known in Australia as the "White Sallow." The wood is pale yellow, light, tough and hard, and is used for tool handles, etc. The bark has some tanning value.

Acacia Baileyana. This species is locally known as "Cootamundra Silver Wattle," and the bark is used in tanning. It is a highly prized ornamental tree. The flowers are small, very numerous and of a bright golden color.

Pour boiling water on the seed and allow it to stand several hours after cooling. Sow in boxes of sandy loam and keep moist but not wet. Transplant when small.

Legumes for Green Manure and Forage.—Our experiments with hardy legumes adapted to winter growth for plowing-in as green manure, and in some cases for forage, have continued to yield interesting results. We offer this year several legumes to be locally tested as to their relative standing with burr clover and field peas, which are now widely grown for the purposes mentioned.

Horse Beans.—The horse bean commonly grown for market as a dry bean has recently been attracting some attention as a green manure plant. Beans of the same class from abroad have also been under observation at this station and are promising. Some of them may be acceptable for table use. We offer the following:

No. 4353. Sicilian Broad Bean, from Italy.
No. 1453. Picardy Horse Bean, from France.
No. 7035. Beheri Horse Bean, from Cairo, Egypt.
No. 7943. Loraine Horse Bean, from Paris, France.
Seed in 4-ounce packages, 5 cents each variety, postpaid.

Peas and Vegetables.—We offer a group of these which are in local esteem for a more extended trial:

No. 7709. Common Vetch. Very strong grower and approved both for forage and green manure.
No. 5572. Spurred Vetch, from Algeria. Good near the coast and on moist lands in the interior.
No. 5-02. Tangier Pea. Grows well near coast and makes a good record in the interior.
No. 533-5. Russian Vetch. Shows best growth near the coast.
No. 397-5. Another Russian variety commended for trial.
No. 7521. Jarosse from France, promising in experiments in southern California.
No. 7639. French pea from Algeria. Also promising in southern California.
No. 27-99. Ochrus pea from Italy. Very promising in the coast region, making as heavy growth as horse beans, but in a thick mat on the surface, while the horse bean is more upright.
Seed of any or all of the above in 4-ounce packages, 5 cents for each variety, postpaid.

Arabian Alfalfa.—This seed comes from a hot, dry region, where it has been grown continuously from ancient times. It is interesting to make a wide trial in comparison with the common alfalfa, the seed of which came to California after several acclimations in more humid climates, and may have been somewhat modified thereby. The Arabian plant is believed to be more rapid in growth and perhaps to yield more cuttings in the season; but trial alone can demonstrate its behavior in California. The seed is furnished us, after inoculation with nitrogen-bacteria, by the United States Department.

No. 12,992. Arabian Alfalfa, inoculated. Seed in 4-ounce packages, 5 cents each, postpaid.

Fiber Flaxes.—In view of the increasing interest in flax growing for the crop of fiber, owing to systematic experimentation proceeding in the Stockton district under the leadership of Dr. J. K. Toles, we offer seed of six of the best European varieties especially adapted to the fiber product. The applicant can order one or more varieties in 1-pound packages, 15 cents for each variety, postpaid.

Culinary Peas.—Mr. R. E. Mansell, in charge of the station garden at Berkeley, has given particular attention to the effort to determine whether the culinary peas popular in England are superior to those commonly grown in California. We offer several varieties which seem promising, that we may have the judgment of our correspondents upon them. The seed for distribution was grown in Berkeley from an importation from Sutton & Sons of England. The choice was made from two points of view—first, a dwarf habit of growth, but second, more particularly for fineness and richness of flavor, which seem somewhat lacking in the varieties commonly marketed in California. The "Autocrat" is sometimes described as a dwarf "Ne Plus Ultra," which is perhaps the highest praise that can be given to a pea when flavor is under consideration. The "Daisy" combines flavor and bearing qualities to a notable degree. The "English Wonder" is Sutton's selected strain, considerably more productive than the old type. The "British Wonder" is very productive and cooks well. We offer, then, the following varieties:

Autocrat.
Daisy.
English Wonder.
British Wonder.
Seed in 4-ounce packages, 5 cents for each variety postpaid.

Model Beet.—This variety is of Burpee's introduction, turnip-shaped and of good appearance, cooking well and having very little coarse fiber. Seed in packets, 2 cents each, postpaid.

Vegetable Marrow.—No. 4365. A white variety from Naples, very productive and having good cooking qualities. Seed in packets, 2 cents each, postpaid.

Bolivian Pepper.—Further trial of this variety justifies its redistribution. It is known in its native country as "Locoto pecante." The seed was imported by Mr. Edward M. Ehrhorn, Deputy Horticultural Commissioner. The plant grows vigorously to a height of 4 or 5 feet and has endured a temperature of 27° F. without injury and becomes perennial. The fruits are about 2 inches in length, very handsome bright red, intensely hot and are borne profusely. Seed in packets, 2 cents each, postpaid.

Halbert's Honey Watermelon. — No. 12,718. This is a Burpee variety originating in Texas. Claimed to be fully equal in flavor to the Kleckley Sweet and more even and regular in form, with richer, darker colored skin. Pronounced by Mr. A. J. Pieters of the United States Department of Agriculture strikingly fine as grown at the seed and plant introduction garden at Chico. Seed in packets, 2 cents, postpaid.

Application, with the amount specified for each variety ordered, should be made as soon as this announcement is received. We are unable to continue distribution throughout the year. Address, E. J. Wickson, Agricultural Experiment Station, Berkeley, Cal.

Berkeley, Dec. 9.

THE APIARY.

Discussion of Bee Diseases.

By N. E. France, at the Northeastern Beekeepers' Convention.

There is a marked difference between black brood, pickled brood, and foul brood. Foul brood, when it once strikes the lower side-wall, stays there as if fastened with glue. The bees cannot remove it except in one way. If those combs have been thoroughly fumigated with formaldehyde it has a chemical action on those and they do remove it in some cases, but not in all. That bee in the last dying effort gets quite a dark color, and it throws out its tongue frequently with force sufficient so that the tongue strikes the upper side-wall and as such will hold as if put there by glue. That will have a tendency, as the body of the bee dries out, to draw the head up. This tongue has a tendency still to hold, and in the sample I have here there are many of those larvæ at that age with the tongue still holding thread-like to the upper side-wall. That is the only reason I can give why always in foul brood the head of the larval bee has a Chinese-shoe-fashion or turn-up; it is because of that.

Now, the body of the bee becomes flattened and dark-brown, nearly coffee-color, and just at that point in giving way, as it drops down, there is a dark, very nearly, black streak across the body of the bee, and apparently on either side little brown streaks that will remain in that condition for about two days. It will continue on the point on the lower side-wall until it is no thicker than the side-wall of the comb, sometimes even thinner than that, but the head end of the bee having dried in that curled-up shape shows itself to the eye much quicker than the balance of it further back.

How to Look for It.—How to look at the comb is one of the most important features that the beekeepers of our country have not learned. They take a comb and hold it looking straight down into cells. I confess I can't see foul brood in that way. For the benefit of this bulletin we are getting out, I went to an artist the other day with this comb and told him I wanted to be photographed, but to take the picture from the rear. I wanted to show how to look down in the comb. As an illustration we will suppose this to be a comb of foul brood, and I want to look into it and there is the light—and by the way, never take candle light or electric light—you want good day light in order to see it satisfactorily. If I were to hold it upright, and stand with the light coming over my shoulder, I would still look down into the bottom of

the cell and see no foul brood. But let me tip the top towards me so that my eye looking in there will strike the lower side-wall about one-third the length towards the base, then I will see those black-brown heads readily all through the comb. You need never question it. Black brood or pickle brood will never have the appearance that foul brood does. In every State where I have found it, there is a marked difference. This photo is simply showing where I am holding up the comb. I made a streak on the negative showing the angle of the rays of light. It should be coming over the shoulder, and then tip the top of the comb toward you.

FUMIGATION.—Mr. Wheeler—Have you learned anything definite this last year about fumigation?

Mr. France—I took one apiary badly infected where there were several hundred combs, and from the fact that formaldehyde gas is one of the best disinfectants the medical world has to-day, there was a great possibility, and I had a box made by one of the best carpenters, which was perfectly airtight, all jointed, and white lead put in the joints. I put in that box quite a number of combs, leaving about an inch and a half space between each two combs. I had Mr. Weber's lamp and followed his directions with one exception—I gave twice the amount, and doubled the time in which it was fumigated. I aired the combs, and two days later I put them back into clean hives, put the bees back on those combs, and went to Los Angeles to the National Convention; came home, went immediately up there, and by the time I got back they had the brood hatched. In about three-quarters of those hives I found foul brood beginning to appear. I went to further investigation on the case and found this, that every frame I had fumigated had here and there a cell that was capped over at the time. Those that were not capped over the bees had cleaned out, and I could not see any foul brood, but where they had not taken that capping off seemingly the chemical properties of the acid had not destroyed the germs, and the brood in those cells was diseased. So that if I were to fumigate combs I should first uncap everything sealed and put it in an extractor, and I would throw that brood till I was satisfied I had thrown everything out of it possible, and then fumigate it. There is a possibility, but bear in mind we are running a great risk and I would not recommend it. I have carefully weighed the combs, carefully weighed the wax rendered from a set of combs, and considered the price of fumigation, and in Wisconsin we can change a hive infected with old and black combs to comb foundation at the cost of 12 cents per colony. Why do we put any stress upon the loss in that line? Those bees have as much new vigor and ambition to work on foundation over the other one as a boy has over a new suit of clothes.

SPRAYING.—Mr. Wheeler—We have heard a great deal about fumigating the hive with a spray; there is a man in California that has practiced that. He sprays the bottom-board and allows the fumes to go up in the combs.

Mr. France—I have tried that somewhat, but there is a marked difference between California's dry atmosphere and here. I question, with the experience I have had within the last two years, if the hive is thoroughly clean that there is any danger. I put the bees right back into the same hive on comb foundation, and I have no trouble.

Mr. Wheeler—Do you shake them out twice?

Mr. France—Yes. I tried two apiaries by shaking once, and in the majority of cases it cured it, but here and there would be a case in an apiary where it did not, and it would not be safe. We do not lose a great deal if we do this at the beginning of the honey-flow. As an illustration, up in central Wisconsin I reached an apiary of 15 or 20 colonies, all infected, quite late in the afternoon or evening of the first day of basswood bloom. The man was a very thorough man; his surroundings all showed it. I repeated to him what I would do with the apiary, were it mine. I said, "Do you understand it?" He said, "Yes" Now as a teacher I learned that the best way to know that the student understood what I told him was to let him tell it back to me again. I said, "You tell me, if you please, what you are going to do with those bees." He did, and I had to correct him only in two places, so I was satisfied he understood how to do it, and do it thoroughly. Thirty days later I returned to the apiary to see what the effect was. The same hives were there and I could find no indications of the disease. That was two years ago, and there is none there yet. So I am satisfied it is treated and cured. And on those hives was from 16 to 18, and on one hive 24, pounds of section comb honey within 30 days after they had been treated. That colony had not suffered very much.

From another apiary that had gone down from a large to a small number, the apiary having been treated, those bees had been taking first and second premiums at our Wisconsin State Fair. It doesn't hurt a boy to have a new suit of clothes. The cost is a very minor affair. The worst difficulty with me, for the first few years at least, was to adjust myself to the peculiar condition of each individual bee-keeper. There is the worst feature I find as an inspector. One man is glad you have come, and will do anything, even leave the harvest, if you please, to have that work attended to; the other man is the very opposite—he would sooner you would get away from there; he would promise anything to get rid of you, and the surroundings correspond. That is the man who needs an inspector, not the other man. In order to help out I have taken with me for the last two years a German wax-press, having a case made so that I could check it as baggage. Where I find a badly infected yard, with the class of bee-keeper whose surroundings are not favorable, I take off my coat and I stay there and clean up the premises myself, and take my wax-press and go on. If I leave it to him a neighbor who is making his living out of the business will suffer from the indifference of this friend.

THE ORNITHOLOGIST.

The California Quail.

By SYLVESTER D. JUDD, Assistant United States Biological Survey.

The California quail is generally dispersed over California below an altitude of 8000 feet and extends into southern Oregon and western Nevada. This name is used here to cover both the typical California quail—Lophortyx californicus—and the paler, more southerly form, called the valley quail—L. c. vallicola. It has been introduced into Washington and British Columbia, and efforts to introduce it into the Hawaiian Islands also have proved very successful, although of late years its numbers there have been much reduced by the mongoose, by which in time it is likely to be exterminated. Two geographic forms of the bird are recognized, a dark form and a light one, but as they do not differ in habits they are not distinguished in the following account. It is a beautiful bird with a most pleasing combination of colors and markings, its head being adorned by a glossy black crest, narrow at the base and gradually widening into gracefully recurving plumes, and the markings on the underparts resembling scales. It frequents brush-covered hillsides, canyons, thickets along water courses and the borders of roads, as well as vineyards and other cultivated fields. The nesting time of the species varies considerably according to locality and conditions. According to E. A. Mearns, it nests in March and April in Ventura county, Cal. Nests containing eggs were found during the last week of May in Tulare county, Cal., by J. E. McLellan. The eggs usually number 12 to 15, and are white or buff with spots.

These birds take kindly to civilization, and flocks are not rarely seen in the suburbs of large towns, where they range through the gardens and orchards. They often nest close to farm buildings, and W. Otto Emerson states that a pair nested within a rod of his front door, though nearly every hour people and vehicles were passing within 4 feet of the nest.

Instead of spending the night in a circle on the ground, like the bobwhite, the California quail chooses much safer places and roosts in bushes or low, thickly foliaged trees. This quail is even more confiding than the bobwhite, and frequently comes about farm buildings to eat with the chickens. It has been known to lay in confinement, and appears to yield readily to semi-domestication.

The valley quail has acquired the interesting habit of posting sentinels when feeding, which is described in detail by John J. Williams. Mr. Williams observed a flock enter a field and begin to feed, while a sentinel took his station in a peach tree and scanned the country about for danger. Presently he was relieved by a second bird, who took up a position on a brush pile and little later was relieved by a third, who kept guard while the other two fed with the flock.

Writing in 1891, Clark B. Streator says that about 100,000 are sold each year in the San Francisco market. It is not a perfect game bird, for it does not lie well to a dog, and when once flushed has a habit of running that is exasperating to the sportsman. The best way to hunt these quail is to keep the dog at heel and to run down the birds. This is likely to make them take wind and to break up the covey. The same result may be accomplished also by discharging the gun in the air. When a covey has been scattered in suitable cover they will lie well enough to a trained dog to give the hunter considerable sport, though it is poor in comparison with that afforded by the bobwhite. The beauty of this quail, its pleasant call notes, and its confidence in man make it a favorite, except where it damages the grape crop. In fall and winter where it is abundant hundreds of birds unite in great packs. Bendire, writing in 1892, says that within a decade packs of 500 were often found, but that at that time coveys even of fifty were rare in most places. In the fall of 1891 they were still very abundant on the west side of the San Joaquin valley, where E. W. Nelson, of the Biological Survey, records their slaughter by pot hunters. The hunters stationed themselves behind a brush blind near the one spring where the birds came to drink.

Thousands of them flocked thither for water during the day, and by waiting until many birds were bunched the hunters killed at least a score at each discharge of the gun. In a week of this butchery 8400 quails were killed. A record of 525 birds to four guns in a day in February, 1903, near San Diego, Cal., shows that birds are still abundant there, though far less numerous in most places than formerly.

The California quail might be introduced successfully in many sections between California and Texas where it does not occur at present. It already has been introduced into Colorado, where it will be protected by law at all seasons until 1920. Laws to prevent trapping and to limit the day's bag, together with absolute protection in sections where necessary, should suffice to preserve this beautiful species.

FOOD HABITS.—The general food habits of this quail have been ascertained by the examination of 601 stomachs, and it proves to be one of the most largely vegetarian of game birds. The material for investigation was collected in California, and represents every month of the year except May. Insects furnished but 2.15% of the food, and leaves, seeds and fruit 97.85%.

INSECT AND OTHER ANIMAL FOOD.—The 2.15% of animal food eaten by this quail is distributed as follows: Spiders, 0.03%; beetles, 0.22%; grasshoppers and crickets, 0.24%; ants and other Hymenoptera, 0.67%; miscellaneous insects, 0.99%. The beetles are both adults and larvæ, and belong to the following families. Chrysomelidœ (leaf-eating beetles), Tenebrionidœ (darking beetles), Elateridœ (wire-worms), Carabidœ (ground beetles), Dermestidœ (dermestids), Coccinellidœ (ladybirds) and snout beetles (suborder Rhynchphora). The leaf-eating beetles include Diabrotica soror, a western representative of the destructive twelve-spotted cucumber beetle. Flea beetles also are eaten, including species of the genus Haltica. Among the miscellaneous leaf-eating beetles may be mentioned the brilliant Gastroidea cœsia. Conspicuous among the ground beetles eaten is the common Agonoderus pallipes, and among the useful predaceous ladybirds the species Hippodamia convergens. Like the eastern bobwhite, the California quail feeds on ants of the families Formicidœ and Myrmicidœ. Sometimes twenty to thirty-five ants are taken at a meal. Of the other Hymenoptera, gall insects (Cynipidœ) and their galls make a significant proportion. Caterpillars and their pupæ are eaten. Cut-worms (Agrotic), measuring worms (Geometridœ), sphinx caterpillars (including Deilephila), and the cotton bollworm (Heliothis obseleta) make up the greater part of this food. Like the bobwhite again, this bird shows a relish for bugs. It eats leaf bugs (Capsidæ), bugs of the chinch bug family, such as Lygœus truculentis and L. bitriangularis, and stink bugs (Pentatomidœ), assassin bugs (Reduviidœ), flat bugs (Aradidœ), burrower bugs (Crytomenus), leaf hoppers (Jassidœ), tree hoppers (Membracidœ), plant lice and bugs of the genus Scolops (Fulgoridœ). The miscellaneous animal matter taken includes flies (Lucillia capesar), spiders and snails.

VEGETABLE FOOD—FRUIT.—The vegetable food of this quail amounts to 97.85% of its diet. The bird has an unsavory reputation among fruit growers, especially the owners of vineyards. Relative to this subject, Miss Florence A. Merriam, writing from San Diego county, Cal., says:

"In fact, the quail were so abundant as to be a pest. For several years great flocks of them came down the canyons to Major Merriam's vineyard, where they destroyed annually from twenty to thirty tons of fruit. In one season—July to October, 1881—one hundred and thirty dozen (1560) were trapped on his ranch. The result of this wholesale destruction was manifest when I returned to the valley in 1894. The birds were then rarely seen on the roads and seldom flushed in riding about the valley."

When this species becomes superabundant and plays havoc with crops it is well to remember that it can be so easily checked. W. H. Osgood, of the Biological Survey, has furnished the writer data on the frugivorous habits of the quail in central California. In one vineyard he saw a flock of about a thousand eating Zinfandel grapes. The birds do much damage in September, when the young are molting and they have collected in packs, as before described.

Walter E. Bryant, writing of the damage to fruit, offers testimony on the other side.

"In some parts of California there is a strong prejudice against the quail, owing to alleged damage to the grape. The evidence which I have thus far gathered shows that the quail do pick at the bunches of grapes, and not alone those bunches which are near or on the ground but the damage which they cause seems overestimated. Too often mutilated bunches of grapes are supposed to be due to the presence of quail in the vineyard; but there are other birds and mammals, also, which vary their diet with grapes. I have examined a number of quail's crops and gizzards without finding the presence of grapes, although the birds had been shot near and in vineyards. A quail's crop sent to me from Los Gatos, by Mr. A. H. Hawley, contained twenty-five small grapes; others had a few grapes, seeds and poison-oak berries.

"In the 601 stomachs of the valley quail examined by the Biological Survey grapes formed only 0.01% of the annual food. This small quantity is due, no doubt, to the fact that many of the birds were shot in regions remote from vineyards and many of them during the time when grapes were not in fruit. The total proportion of all kinds of fruit was only 7.60%, an amount so insignificant as to preclude the idea of serious damage. Where the birds are over-abundant and the

consequent damage great, trapping or advertising the conditions in sporting papers will probably result in reducing the numbers to normal. Of the 7.60% of fruits, grapes, as before stated, contributed 0.01%; plants of the genus Rhus, mainly Rhus diversiloba, 4.74%, and miscellaneous fruit, prunes and vaccinium 2.85%. The maximum quantity of fruit, amounting to 32.40% for the month, was taken in December, after the grapes had been picked."

Grain.—The relations of the California quail to grain are of considerable economic importance. W.T. Craig, of San Francisco, writes to the Department of Agriculture: "I have observed the quail enter a field of wheat to the number of thousands, and had they not been driven away they would have destroyed the whole crop." No other reports to the Biological Survey show the danger to grain from this quail to be so serious, but data at hand show that it does more or less damage to germinating grain. Two quail shot by Walter E. Bryant on a newly sown grain field had eaten, respectively, 185 kernels and 210 kernels of barley. Barley is important in California, where it is grown for hay, for grain feed and for beer making. There is, however, much volunteer barley, which many species of birds feed on and thus do good rather than harm. It is probable that quail do little or no harm to barley at harvest time, and the waste grain that they subsequently gather in stubble fields has no positive value. Of the yearly food of the 601 quail examined 6.18% was grain, divided as follows: Barley, 4.58%; wheat, 0.44%; corn and oats, 1.16%.

(TO BE CONTINUED.)

The Great American Desert—III.

Written by George J. Bancroft.

The sub-department that has the work referred to in charge is called the hydrographic survey, and recent bulletins issued by this department permit one who knows something of the desert to figure out a few general conclusions which are reasonably accurate.

In the first place, it is necessary to emphasize the fact that only a very small percentage of the arid territory is reclaimable by direct irrigation. I think this is a matter that is not generally understood; but indirectly the whole arid region will be benefited by increased irrigation, and I will try to show, later on, what the indirect possibilities are.

Viewing the subject in a broad way, there are six main drainage systems in which additional irrigation is possible by the expenditure of large sums of money. Practically all the "cheap water" has already been used.

By this I mean that where a man or group of men can build a ditch of reasonable length without overcoming any serious obstacles it has been done. The Reclamation Act will make possible the utilization of water in those localities where large areas of good land can be brought under irrigation only by the expenditure of large sums of money. Most of the main opportunities may be divided into two classes, viz., the diversion of large streams, which, of course, requires the construction of expensive diversion dams, and the construction of large reservoirs. Such undertakings require large capital and, in the past, few of them have been undertaken.

The main drainage areas where irrigation schemes are practical are the Columbia river basin, the Colorado river basin, the Rio Grande river basin, the western part of the Mississippi river basin, a little of the southern part of the basin of the Red River of the North, and the drainage area of the western slope of the Sierras. In these six main drainage areas there is a total "map area" of 892,000,000 acres.

The following table gives the total acreage already under irrigation in the several States and Territories of the arid region, together with the cost of the irrigation works. In the States given in this list there is a total map area of 749,000,000 acres, so it will be noticed that only about 1% of the land is now under irrigation:

	Acres.	Cost.
Arizona	185,396	$4,438,352
California	1,445,872	19,181,610
Colorado	1,611,271	11,758,703
Idaho	602,568	5,120,369
Montana	951,154	4,683,073
Nevada	504,168	1,537,559
New Mexico	203,893	4,165,312
Oregon	388,310	1,843,757
Utah	629,293	5,865,302
Washington	135,470	1,722,369
Wyoming	605,878	3,973,165
Totals	7,263,273	$64,289,601

It will be noticed from the above table that the total cost of putting all the present irrigated ground under water has been on the average $8.85 per acre. Nearly all the schemes that the Reclamation Service is considering will cost about $28 per acre. These figures illustrate what I mentioned above, that the energetic Western farmer has got all the cheap water already.

Orators at the irrigation congresses have figured all the way from 60,000,000 acres to 100,000,000 acres as the amount of ground that will eventually be reclaimed by the Reclamation Act. It is, of course, absolutely impossible to make an estimate that will be at all accurate until each stream in the irrigable region has been considered separately and the possible chances for diverting and storing water carefully considered and measured, but from the stream measurements of the hydrographic survey it can be computed that in the six main drainage areas mentioned above, there is water sufficient to irrigate 78,000,000 acres, and this agrees very closely with the estimate made in 1902 by F. H. Newell, the chief of the division of hydrography of the United States Geological Survey. Mr. Newell's estimate was 74,000,000 acres in practically the same area. Both estimates are based on the assumption that some way will be found to use all the available water. This is not likely, but it would seem reasonable that 75% of the available water might be used, particularly when it is considered that owing to the return of part of the water to the stream beds by seepage there will be a certain amount available several times. Figured in this way, we may reasonably expect 58,000,000 acres to be reclaimed.

The United States withdrew 40,000,000 acres from entry in view of proposed reclamation schemes, but after completing a large number of surveys all but about 1,045,000 acres was restored to entry and the following schemes undertaken:

State.	Name of Scheme.	Number of Acres Reclaimed.	Available Cash.
Arizona	Salt River	160,000	$240,849 25
California	Yuma	85,000	2,186,127 19
Colorado	Gunnison	100,000	1,921,248 00
Idaho	Minidoka	130,000	2,021,750 68
Kansas			139,929 14
Montana	Huntley	35,000	2,147,189 00
Nebraska	North Platte	100,000	550,500 06
Nevada	Truckee	200,000	65,919 35
New Mexico	Hondo	10,000	473,708 31
North Dakota	Fort Buford	60,000	4,503,089 47
Oklahoma			3,209,707 13
South Dakota	Bellefourche	60,000	979,932 75
Utah	Utah Lake	60,000	335,130 40
*Washington	Palouse River	100,000	3,121,863 15
Wyoming	Shoshone	100,000	1,234,718 87
Total		1,045,000	

*Construction postponed.

PROJECTS APPROVED BY SECRETARY OF INTERIOR.

State.	Projects.	Estimated Cost.	Acres Irrigable.
Oregon & California	Klamath Falls	$1,000,000	236,000
Oregon	Malheur	2,250,000	100,000
Montana	Milk River	1,000,000	200,000
N. Dakota, pumping	Bismark Buford-Trenton	55,000	33,000
Idaho	Payette-Boise	1,300,000	250,000

The reason that Kansas and Oklahoma have cash on hand for irrigation projects, but no projects under way, is because the country is so flat and the fall of the streams so slight that as yet the Reclamation Department has found no feasible way to get water out of the streams. The idea of installing pumping plants is now being considered.

In addition to the schemes mentioned in the above table there have been several large private schemes completed within the last year or so, and there are several others in process of construction. Prominent among the completed ones may be mentioned the Imperial Land Co. scheme, which has put 50,000 acres of land suitable for semi-tropical fruits in southern California under cultivation with water taken from the Colorado river, and the Twin Falls scheme of Idaho, which places under cultivation 270,000 acres of fine fruit and grain land.

We can see from what has already been done, and what it is possible yet to do, that some 7% or 8% of the Great American Desert may be put under cultivation, that only 1% was under cultivation before the passage of the Reclamation Act, and that the first series of enterprises will increase the irrigable land by 1,045,000 acres.

Possible Change of Climate on the Great American Desert.—I wish now to call attention to that most interesting question: "Will the reclamation work change the climate of the desert?" Of course, this question can not be definitely answered, or it would not be a question; but my travels on that part of the desert embraced by Inyo county, Cal., and southern Nevada have shown me that comparatively rapid changes have taken place in the climate of that locality; and if a climate may suddenly change for the worse, owing to evident causes, I see no reason why it should not change for the better if original conditions are restored. For instance, there are countless lake beds, some entirely dry and some with a little salt water in the bottom, and all of them showing successive beach marks in the perishable soil of the basin sides, registering the gradual drying up of the country. On one of the beach marks in the Salton Basin, San Diego county, Cal., may be seen stone fish traps, showing that the Salton desert was a fish-bearing lake within the time of human occupation of this continent. Near Osceola, Nev., one can see a crescent-shaped dike across the lower end of a large basin. This was evidently a reservoir built by the ancients. Faint traces of the old ditches may also be distinguished below the dam. There is no water to reserve nowadays.

Walker lake, in Esmeralda county, Nev., is fresh water at the upper end and brackish water at the lower end. Successive beach marks show that at one time it had an outlet to the south, and the fact that it is part salt and part fresh would indicate that the process of the concentration of the small amounts of salt, which all water contains, through the medium of evaporation, has not been in operation for a very great length of time.

One can not help picturing in one's imagination what a beautiful section of country this must have been when all these dry lake beds were filled with clear blue water and running streams, connected one with another. Then the hills were covered with tall cedars and the valleys with waving grass, and the elk, deer and buffalo wandered in herds through a land blessed with the finest climate imaginable, rich in verdure and beautiful with sparkling waters.

I was sitting at "Uncle John's" camp fire, discussing gold veins and things, when he showed me a bit of pottery he had washed out that day from the gravel 20 feet below the surface. I remarked that there must have been people living in that section for a long time.

"Yes, sir," he replied, "and lots of them. There are places where the ground seems like it is half made of fragments of pottery and things. This country used to be a very fertile country and lots of people lived here.

"Why I know a place down towards the Colorado river where there was an ancient city. The houses were adobe, and nothing is left of them, but they had the streets paved with flagstones and you can follow out miles of streets. There ain't water enough in that country nowadays to keep a pair of jackrabbits. There ain't a man that has prospected this country that ain't seen them signs of ancient peoples and lots of them." "How do you account for the country drying up, Uncle?" said I. "Well I'll tell you," and he put a greasewood coal in his pipe to keep it lit awhile, "you probably have noticed that every day you've been in this country the wind has blown from the west or southwest." I recalled that I had. "Well," he said, "if you was ever down in the Altar district near the Gulf of California or along the coast by San Diego, you probably have noted that the prevalent wind is a land breeze. Once in a while we do get a sea breeze here, but the Sierras suck it dry before it gets here." I had to take his word for that, never having investigated. "Well," he continued, "'taint but a short time ago that the Colorado river used to flow into the Salton desert, and the water backed up into the Death valley and parts of the Mojave desert. There is a whole lot of that country below sea level and it is all on the east side of the Sierras. At that time there was quite a chain of large inland fresh water lakes." I knew the Colorado river does, even nowadays, sometimes flood the Salton desert (it is doing it now), and I knew the basins he mentioned were all below sea level.

I have never been over the country that "Uncle John" mentioned, but he had, with his burro and his gold pan and his bright keen eyes, noting many things besides gold veins. As I said above, the old prospector's theory appeals to me. No one who has traveled on the Nevada desert can doubt that only a few centuries ago the country was a great deal more fertile than it is to-day. I saw a cedar butt 2½ feet in diameter in a well in the Saline basin, Inyo county, California, myself. There are no such cedars in the country nowadays, and while cedar is a very durable wood, I doubt if it had lain buried over 500 years. The slow climatic changes which result from the gradual tilting of the poles of the earth or from the rise or subsidence of large areas of the earth's crust, are altogether too slow to account for the comparatively sudden change that is recorded in the soils and rocks of Nevada. That the conditions that once prevailed in that section may be eventually reinstated by the reclamation work that has already been started, seems to me well within the limits of the possible.

Near Denver, Colo., we have had an unquestionable demonstration of the effect of irrigation on the rainfall. Around Denver there are about 200,000 acres of irrigated land. During the heat of the summer the evaporation is very great from this area and one can see the clouds form over the irrigated section. If the wind carries the clouds away from the mountains there is no result, but if they are carried over the mountains into cooler air, heavy showers almost always result. Of course there always were summer showers in the mountains, but that these showers have been heavier since irrigation began is proven by the fact that nearly every mountain meadow close to Denver has been badly cut to pieces by summer cloudbursts since irrigation became general.

It took thousands of years for the silt of these meadows to accumulate, and in twenty years a large part of it has gone; but while the mountain ranches have suffered the prairie ranches have had more water.

To return to the Colorado river basin, I believe that using the water to irrigate the deserts of Arizona and southern California will mean more rain higher up the river, and more rain will mean more water for irrigation, and this again will mean increased evaporation, so that by a constantly increasing yearly increment the climatic conditions will improve.

I think the same thing will take place wherever topographic and eolian conditions are right for precipitating from the air the moisture freshly acquired from the irrigated fields so that in time to come the 7% or 8% of land which it is possible to reclaim from the district may be the "little leaven that leaveneth the whole loaf."

Agricultural Review.

TO ORGANIZE NEW RESERVES.—Sacramento dispatch to the Chronicle, Dec. 23: State Forester Allen has received a notification from the Forestry Department in Washington that soon after the New Year two men will be sent from that department to assist in organizing the business of the new forest reserves of Yuba, Shasta and Tahoe, and to so arrange matters that there will be no trouble caused to grazers or others using the reservations. The two officials in question will proceed direct to Sacramento in order to work in unison with State Forester Allen.

Butte.

ORANGE GROWERS RECEIVE PAYMENT.—Oroville special to Sacramento Bee, Dec. 20: The directors of the Butte County Citrus Association met last evening and announced a payment of 50 cents per box of oranges to the shareholders as a return on the first pool sales and stated that later this would be increased to three and possibly four times that amount per box as returns were received. Packing is about completed, and the Association will stop on Saturday. The California Citrus Union has already finished the season's pack and closed up its packing house.

Kern.

INDIANS JICKING ORANGES AT TEJON.—Californian, Dec. 21: The first shipment of the famous Tejon oranges was made to-day, a consignment of 500 boxes going to Portland, Or. Earlier shipments might have been made had Supt. J. G. Stitt desired to rush the season and market oranges that were not fully ripe. But the Tejon oranges are so delicate of flavor and so finely colored that they find a ready sale at good prices, even if they are not first in the market. At the Tejon ranch the orange grove covers 25 acres and the crop this year is fine. The picking is being done by Indians, who are the wards of the ranch, and the packing, in the absence of other help, is done by Chinese. The Tejon crop this year is of excellent size, averaging 126 to the box.

Kings.

LONG SEASON OF HARVESTING.—Hanford Journal, Dec. 22: A. D. McKean, who has been operating at harvesting in Kings county and adjacent counties for several years past, was in Hanford recently. He said that he still had two weeks of alfalfa hulling ahead, but the recent rain had caused him to quit work, temporarily. This season has been a record breaker for him, in duration. He threshed wheat for seventy-six days, commencing in June; then he began alfalfa hulling and has been engaged for ninety days at that.

Los Angeles.

HOLIDAY BUSINESS GOOD FOR ORANGE GROWERS.—Los Angeles dispatch to the Chronicle, Dec. 23: It is reported at the California Fruit Growers' Exchange that, both in the number of carloads sold and the amount of money received, holiday business has been satisfactory. The receipts show 25 cents a box more money realized for navel oranges than a year ago. The exchange has sold this season 700 carloads more of citrus fruits than a year ago at the same date, and taken in for the fruit already sold approximately $1,300,000 in cash, which is being distributed to the growers.

Riverside.

COACHELLA WATERMELONS.—Los Angeles Herald: The Coachella Valley Producers' Association shipped 187 carloads of melons last summer from Coachella. These melons were grown on 690 acres, of which 529 were at Coachella, 107 at Durbrow and 54 at Mecca. These shipments brought gross receipts of $191,268.59, or net to the growers $101,829.50. The gross value of the watermelons shipped by the association amounted to $8832.17 and grapes, $2450.85 gross, making the amount sold by the association

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$202,550. Outside of the association there was sold about $20,000 worth, making in all over $220,000 sold from Coachella alone.

The greater portion of the cantaloupe crop is sent to Chicago, New York and other Eastern points in refrigerator cars. As the Coachella valley melons ripen fully six weeks earlier than those of Rocky Ford, Cal., the permanency of this remarkable industry is assured beyond a doubt. The grapes here are also placed upon the market from four to six weeks earlier than from other points. They brought returns last season of over $100 per ton. This year nearly 500 acres will be set to vines, mostly Malagas, as that variety has been found to be the best shipper for table grapes. The harvesting of broom corn is now in progress. This, with the sweet potato crop to be gathered this month, will increase the financial returns from Coachella. Sweet potatoes yield well.

Monterey.

STRAWBERRIES SENT TO NEW YORK.—Pajaronian, Dec. 21: Last Thursday O. O. Eaton furnished the Pajaro Valley Board of Trade with sixty baskets of strawberries which were shipped to Antioch to C. Blagman, secretary of the American Fruit Co., to be packed under a new process for shipment to New York. The berries, which were packed in crates of twenty-four boxes each, should have arrived in New York Monday. In order that the Board of Trade might know how they would look upon arrival at their Eastern destination, Mr. Blagman shipped a crate similarly processed at the time the berries were sent to New York, to Watsonville. President E. A. Hall opened the box this morning and found most of the berries in a very good state of preservation, although they had a very flat taste. Mr. O. O. Eaton, who was present at the time, said that such a showing was due to the season of the year more than to the method employed in processing. These crates, prepared for long-distance shipment, are lined with a dark, heavy paper and are supposed to be air-tight. The officials of the American Fruit Co. believe that berries can be kept fresh in this way for several months. The shipment was made as an experiment and upon its success depends the future of the undertaking.

PRICE FOR PAJARO APPLES.—Pajaronian, Dec. 21: Peckham & Peckham have received a cablegram from Sidney, Australia, announcing that a thousand boxes of Pajaro valley apples packed and shipped by them had sold in that city at $3.25 a box for the entire lot. The fruit consisted of Winesaps, Missouri Pippins and Newtown Pippins.

San Diego.

THE SEASON'S RAINFALL.—San Diego Union, Dec. 21: That San Diego is having an ideal season, so far as rainfall is concerned, is a matter of knowledge and rejoicing. But even to some persons who have paid close attention to the figures of the precipitation here, comparison of the local rainfall with that in other portions of the State will prove a revelation. A glance at the statistics shows that thus far this season conditions are reversed. With the exception of Eureka, one of the wettest places in the State, San Diego, instead of being near the bottom of the column in total rainfall, now leads the list, having had 4.13 inches as against 5.86 for Eureka. Red Bluff and San Francisco, which commonly fare much better than San Diego and most other places with respect to rain, are each far behind this city, Red Bluff having had 2.13 inches and San Francisco only 1.34.

San Joaquin.

SHEEP NEED GREEN FEED.—Stockton Independent: There are estimated to be 60,000 head of sheep in San Joaquin county, being fed upon straw and waiting for the green feed of the mountains to be matured after the rain sets in. Straw is in great demand and is being bought by the stack at the rate of from $3.50 to $4 per ton, and hauled away by the purchaser and scattered on the fields for the sheep. On Roberts island there are 40,000 sheep living on straw alone, while in the Terminous section there are at least 20,000 sheep grazing on green feed at the rate of 8 cents per head per month. The amount of straw obtainable is very limited and the price will probably advance as the winter sets in. Smaller flocks are being cared for in other sections of the country in the available green feed to be had.

Stanislaus.

LARGE ACREAGE IRRIGATED.—Modesto Herald, Dec. 21: Superintendent Hastings of the Turlock irrigation district has given the Herald figures showing the acreage of irrigated crops grown or cultivated in the Turlock irrigation district for the past season. The figures are gratifying, showing 25,815 acres received irrigation, while more than 1000 additional acres of trees, vines and alfalfa received nothing but sub-irrigation. The figures are as follows:

	Acres.
Alfalfa	19 795
Trees and vines	2 504
Sweet potatoes	845
Melons, garden, etc	2,671
Total	25 815

SECOND CROP APPLES.—San Jose Herald, Dec. 23: Last spring H. W. Bishop, who resides on the Mabury road, brought to the Mercury office samples of second crop blossoms and small apples from an apple tree in his orchard. Last evening he brought in several matured apples, of the Gravenstein variety, the product of these second crop blossoms. He has picked more than a bucketful from the tree, and many yet remain on its branches. The apples are of fair size and of excellent quality. Second crop blossoms are not uncommon, but matured second crop fruit is rare.

Sonoma.

CUTTINGS FOR VINEYARDISTS.—Ukiah Press, Dec. 22: The articles recently published in the Press regarding grape culture in this county have attracted the attention of outside vineyardists as well as local ones. Thos. Mellerish is offering to aid parties contemplating planting vineyards not only by the experience he has gained, but is willing to give them cuttings of the best known varieties of grapes for this soil and climate. They are now pruning at Villa Maria ranch near Asti, and at Windsor. If the farmers are now prepared to make the cuttings, ship them to their ranches and heal them in for transplanting in the spring, they can now obtain just as many as they want by going to the ranches and making their own cuttings. They will be pruning for the next two months, so any one wishing to obtain cuttings can, upon application to Mr. Mellerish, obtain letter to the foreman of the ranch accordingly.

Tehama.

TO GROW BEETS.—Red Bluff special to Bee, Dec. 21: The probabilities are that the beet sugar industry will yet invade this county and that one of the main centers in the State will be located within a dozen miles of the county seat. All of the river bottom land, under proper cultivation, is said to be suitable for the production of the sugar beet. Manager T. H. Ramsay, of the Cone Ranch Company, may decide to put in an experimental field of sugar beets during the coming spring.

Yuba.

POZZI CREAMERY TO INCORPORATE.—Marysville Appeal, Dec. 21: A deal has been closed in Marysville whereby the Pozzi creamery on Third and E streets will be incorporated and a company organized composed of some local business men and others will in the future operate the plant on a larger scale than it has been run in the past. George H. Hellman of San Francisco, Hubert Vischer, E. A. Forbes, Wallace Dinsmore, R. Pozzi, A. C. Bingham and others have purchased stock in the new company. Mr. Pozzi will remain as manager of the new company.

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The Home Circle.

Winter Time.

Late lies the wintry sun abed;
A frosty fiery sleepy head;
Blinks but an hour or two and then
A blood-red orange sets again—

Close by the jolly fire I sit
To warm my frozen bones a bit;
Or with a reindeer-sled explore
The colder countries 'round the door.

Black are my steps on silver sod;
Thick blows my frosty breath abroad.
And tree and house, and hill and lake
Are frosted like a wedding cake.

—Robert Louis Stevenson.

The Awakening of Hilary Strong.

Hilary Strong was ambitious. Up to his twenty-fifth year his aims had been indefinite, his desires unformulated. He was then an idealist, and it was only when he had outgrown his folly, as he afterwards called it, that his true nature asserted itself and he studied how to advance himself and his own interests.

Such, perhaps, were his musings as he sat in his study by an open fire on New Year's eve, a diary in one hand, the other pressed against his forehead. Outside, the wind blustered up the dark street, driving the snow before it and effectually deterring any patients from calling upon him for aid. He was glad of respite, and continued glancing over the entries in the book until one passage caught his attention. He read it to himself twice, and then aloud, slowly, as one who weighs every word:

"The reformed idealist is the one who is fitted for accomplishment. In this solitary state, be it enforced or otherwise, he learns to gain complete mastery over himself, and is in a better position to gain the mastery over others than is one who, from the very beginning, has devoted himself, heart and soul, to the welfare of his fellows. Moreover, the reformed idealist has thorough control over his passions, and is therefore able to make the heart subservient to the brain in his love affairs.

"The man who is ruled by his heart will ultimately be driven to his doom by a woman. The only way by which one can escape this fate is to throttle his affections at the critical moment, and then mount alone the ladder leading to ultimate success. Many an ambition has been undermined by love, which may truthfully be likened to a drug which acts upon one's head and feet, making the former light and the latter heavy. He who would be successful must know how to love, and whom to love. He must have reason for loving, yet no desire for love. He must be willing to banish love from his thoughts and to devote himself entirely to that which he wishes to accomplish. This is the basic principle of success in life."

He laid the book down and wondered who had written such awful conclusions, such damning evidence of a soul so dead that even the breath of God could not have quickened it into being. Yes, it was his own writing, although his letters were now less perfectly formed, his sentences less precise and studied. Ah! he remembered now. It was about the time when —. Hastily he took up the book again and read on:

"In my twenty-second year I fell in love. Now, that I am thirty, I can look back upon that time and write understandingly thereof. The girl who infatuated me was of a sweet and lovable nature, and also very weak. We were very happy together during that period of enforced idealism, contrary, as I perceive now, to my real nature; but afterwards when my ambition asserted itself, and I began to struggle in earnest in the great fight for success, there seemed to be something lacking in her. I had tired of her, as of a diamond which is not absolutely flawless. Pretty as she was, I saw that it was necessary to sacrifice her, and I told her so. She made no objection, no complaint; but as I left her room she said, with a strange emphasis, that I would be present at her death bed, and that she would take me herself into the presence of God for judgment. On my way home I passed the Cathedral of St. Paul, and I remember how ominous its deep-toned bell sounded as it called the worshipers to evening mass. For a few minutes I wavered, half willing to return and ask her forgiveness; but my reason reasserted itself and I hurried home. And from that day to this I have never heard of her, nor have I loved any woman; but success will be mine, because I am determined to possess it."

With a sigh Hilary Strong permitted the book to slip from between his fingers. His head dropped forward until his chin rested heavily upon his chest. He closed his eyes. He was now what the world might call a successful man. That is to say, he had gained a good practice and had a comfortable bank account. He had worked hard to do this, and people thought he was satisfied. On the other hand, what suffering he had gone through! They would not envy him, he told himself, if they but knew what his success had cost. Only a few Sundays previously, while visiting a sick patient in the country, he had walked over the hills, wondering why the old mood did not come over him again— the mood which had one time made him one with the bees and the sunshine, with the flowers, and the evening breeze. He was twenty years older. His ambition had been gratified; but at the cost of what?

Pulling himself together he rose to his feet and then wheeled the liver-colored armchair to his table, on which burned a crimson colored lamp. Then he picked up the diary and reseated himself, a look of determination expressing itself upon his grave, stern face.

"What foolishness!" he muttered. "What wicked foolishness! But perhaps it is not yet too late to make reparation. I wonder what has become of Nelly? I will find her even if it costs me everything I have made. I will write down how sorry I am, and some day she can read it and then burn the book. I wonder where she is?"

Having selected a pen from the rack, and assuring himself that the nib was in good condition, he prepared to write. But ere he placed it to the paper, he sat back again and considered well what he was about to say. There must be no hesitancy about this entry; no scratching out of words, no striving after effect. It would be read by nobody until she——

He smiled, and the hope that had entered his heart made his face almost transfigured. Then he leaned to his task.

"After twenty years of utter loneliness I take up my pen to acknowledge my guiltiness and to record a vow. I have sinned and I would atone. I have accomplished, but I have paid the price. To succeed, I sacrificed the friends of my youth. I trampled upon the hearts of those who befriended me. In my folly I drove them from me, and now I am alone. Twenty years ago I wronged her—the one whose name I fear to write lest she rise up and chide me for deserting her. Aye, she might do worse. She might call heaven's righteous vengeance upon me. I have merited it; and although I acknowledge my sin, is acknowledgment sufficient to ensure forgiveness? God grant it is. And here I vow to seek her out, that if she still be living I may make her my own. And if she be dead, may God, who pities the follies of youth, have mercy upon me. Amen."

Having made this entry, Hilary Strong sighed and laid down the pen. Looking at his watch he saw it was eleven o'clock. It would soon be the New Year. What would it contain for him? For a man past fifty it could not bring much, and yet he hoped. He lay back in his chair and listened to the terrible intoning of the wind, which sounded doubly clear, all other noises being deadened by the snow. He would commence to-morrow his search for this woman whom he had wronged. If only he were thirty again!

Musing thus, he was startled by a rap on the outer door, and, answering it in person, found a veiled woman dressed in gray standing on the steps. Looking her over quickly, he saw that she belonged to the poorer class, a thin shawl of the same color as her dress taking the place of a hat, and being held in place by fingers that were white enough to be those of the dead. Without waiting for Strong to speak, she told him to follow her without loss of time to a place where he was needed. When he asked what was the matter, she merely shrugged her shoulders and drew her shawl closer about her face. Hastily putting on his overcoat, and picking up his instruments and a few stimulants, Strong hurried after her. She repelled all attempts at conversation, and finally he followed her in silence, noticing how easily she walked on the slippery streets and wondering whither she would lead him.

In this manner they traversed the poorer quarter of the city; and finally, in one of the outlying streets, the woman stopped before a little two-story house that seemed to be the most dilapidated in the block—a block whose many empty lots and isolated structures reminded those who had occasion to pass that way of a decaying gum, the sorry fangs in which are made more hideous by the blackened cavities of teeth long since removed. At the weather-beaten and half-open door of this poverty-stricken hovel, the woman made a sign that it was unnecessary for her to enter, and that her companion should ascend alone. Eager to be of service, he gave no thought to his guide, but ran up the rickety stairs, his steps echoing through the place, which appeared to be as empty and chill as a grave. At the top of the landing, however, he found a room, the door of which was wide open. Peering into the darkness, he saw at the far end, near the window, a straw pallet on which a woman lay huddled.

Groping his way to the bedside, he placed his hand on her heart. Then he forced some brandy between her teeth, and, with a sigh, she slowly regained consciousness. In answer to his repeated questioning, she finally told him where to find a candle; then she closed her eyes again, as though eager to die. When the wretched room was partially illuminated, Hilary Strong took in its contents at a glance—the washstand, with its broken pitcher and bowl; a chair and a table, on which was piled a litter of garments, needles, thread, and one big crust of bread. One of the panes in the window was broken and the hole had been hastily covered with newspaper; but the pitiless wind had pressed in one of the corners and put the cold in possession. Shivering in spite of himself, he hastily approached the bed again, and, despite the awful change that had come over her, despite her white hair and haggard face, recognized in the doomed woman the girl who had loved him and for whom he was seeking.

For a second he was so taken possession of by horrors and remorse that he almost collapsed. While he had been living a life of comparative ease, she had been earning a meager pittance and working herself into the grave, from which he now saw it was impossible to save her. Of what avail now was his repentance, his desire to make her his wife?

Her face was still turned from him and her eyes were still closed. For a minute he wavered, wondering if it would not be best to let her go thus, without upbraiding him. Then his better self asserted itself. Kneeling down by the bedside, he took one of her cold hands in his.

"Nelly!" he cried. "Nelly! I have come. Speak to me!"

She moved her head wearily and recognized him just as her spirit was about to leave her body. But her face was almost as passionless as one who has passed on, and in her eyes there was neither love nor forgiveness.

He knew the meaning of the look, but he still hoped.

"Forgive me, Nelly," he repeated. "I did not know——"

Before he could finish his sentence she spoke, her voice already sounding far away, but doubly threatening.

"Remember my promise," she said, "We shall meet before long."

Before he could reply she was no more. Then, while he allowed his face to sink into the coverlet, as though afraid to look upon the marbled thing it shrouded, the awful silence of the room was suddenly broken by the booming of a deep bell. Clong! Clong! Clong! Clong! Its insistency was suggestive of the voice of Judgment, and, knowing his crime, Strong felt that there was now for him no hope, either of forgetfulness in this life or of forgiveness in that which is to come.

Clong! Clong! Clong! The reverberations brought back the memories of fifty years. Now his girl-love was standing beside him in the meadow, listening to his plans of the future; now he was telling her that he no longer loved her, and she was looking at him with that strange gaze, the malign purpose of which had only become apparent to him of late; and now she was dead, and although there was a great chasm between them, he instinctively felt that her passionless blue eyes were watching him, and that soon she would come forward to execute the threat she had made years ago.

Clong! Clong! In fancy he saw himself standing, naked to his very spirit. He knew that his examination was being proceeded with in silence. There was no one to arraign him and no one to defend him; but his isolation made his position more awful than had he been surrounded by a host of witnesses and judges, by whose arguments and clemency he might hope to profit.

Clong! Sounding louder and more prolonged, by reason of a lull in the wind, the pitiless clamor of the condemning bell now entered into the very soul of the wretched man. A fire of damning sound, it burned its way to the very center of his being, piercing his brain and maddening him; it seemed to him to be a foretaste of the flickering flames of hell; and coming as a climax to such excruciating and protracted soul's analysis, the wretched man screamed with all the terror of the lost.

The next minute he awoke. He had been dreaming, and his diary was lying open beside him. It was just midnight, and upon the crisp air rang out the chimes proclaiming the advent of the new year. For several seconds he sat breathless in his chair, the sweat rolling down his face, his hands trembling as though with palsy. And before the awful terror had passed from his soul, and before he could realize that his fear was only the result of his imagination, his door was opened silently, and a white-faced woman, attired in a gray wrapper, came toward him out of the dark. Then, with one loud cry, he sprang to his feet and plunged heavily forward; and before his frightened housekeeper could reach him, Hilary Strong was dead.—Farmers' Review.

The First Match.

In the nineteenth century—the century in which so many wonderful things were done — the fourth step in the development of the match was taken. In 1827, John Walker, a druggist in a small English town, tipped a splint with sulphur, chlorate of potash and sulphide of antimony, and rubbed it on sandpaper, and it burst into flame. The druggist had discovered the first friction-chemical match, the kind we use to-day. It is called friction-chemical because it is made by mixing certain chemicals together and rubbing them. Although Walker's match did not require the bottle of acid, it nevertheless was not a good one. It could be lighted only by hard rubbing, and it sputtered and threw fire in all directions. In a few years, however, phosphorus was substituted on the tip for antimony, and the change worked wonders. The match could now be lighted with very little rubbing, and it was no longer necessary to have sandpaper upon which to rub it. It would ignite when rubbed on any dry surface, and there was no longer any sputtering. This was the phosphorous match, the match with which we are familiar.

After the invention of the easily lighted phosphorous match there was no longer use for the dip-splint or the

strike-a-light. The old methods of getting a blaze were gradually laid aside and forgotten. The first phosphorous matches were sold at 25 cents a block—a block containing 144 matches—and they were used by but few. Now a hundred matches can be bought for a cent. It is said that in the United States we use about 150,000,000,000 matches a year. This, on an average, is about five matches a day for every person.—St. Nicholas.

Hints to Housekeepers.

Dandruff and some scalp troubles are greatly improved by the use of resinol soap, but a fine-tooth comb used two or three times a week keeps the hair in excellent order. If there is too much dandruff it is a good thing to use some carbolized vaseline on the scalp each time before the hair is washed.

Here is a very good suggestion from Good Housekeeping: Canaries are fond of green food, and when lettuce is scarce a substitute is offered in a little of their favorite seed planted in small flowerpots and allowed to grow. The birds like it all the better if they are allowed to pick out the plants themselves.

When unfortunate enough to rub or tear a piece from the outer surface of a black kid glove or kid shoe, take a few drops of sweet oil and mix it with an equal amount of black ink. Apply this mixture to the white spot, or any part that may be rubbed, and the spot will be hardly noticeable. This treatment will also freshen an old pair of black kid gloves.

The ugliest nails can be improved by taking the trouble daily to push back the hard skin that grows at the base of the nails. This should be done after the hands have been washed in soap and warm water and are still moist. A soft towel is the best thing to use for the purpose, or an ivory or bone implement, such as is sold in manicure sets.

When starching toilet covers, or anything that has fringe trimmings, double the cover into four, and gather the fringe tightly into the hand; hold it firmly while you dip the middle of the cover into the starch. When dry, shake the fringe well, comb carefully with a large toilet comb, and it will fall as softly and prettily as when new.

An old-fashioned remedy for soft gums and for loosening teeth is one that can be readily made at home. It consists of one ounce of coarsely powdered Peruvian bark steeped in half a pint of brandy for a fortnight. A tablespoonful at first, and later a teaspoonful, of this to a wine-glassful of water used to rinse the mouth will speedily improve the condition of the teeth and gums.

This substitute for aperient medicine is excellent for both children and adults, and keeps the skin nice and clear. Place some figs in a stewing jar, cover with good salad oil and stew very gently. When they are soft, sweeten with honey and flavor with ground ginger or lemon juice; stir all together thoroughly while hot, and for a dose take one or two figs. Prunes may be prepared in the same way if preferred.

The bath is a little tiresome to keep in good condition, unless great care is taken. When the enamel is dirty and discolored, take some paraffine, dip a piece of flannel into it and keep rubbing the bath gently until all dirt is removed; then wash with soap and warm water. Zinc goods can be made to look new in this way. Paraffine is used in so many ways and is of wonderful assistance to the housewife while waging her war against dirt.

"Coal oil will knock any cold," said C. C. Warren in the Baltimore News. "The idea of drinking coal oil may seem repugnant to some esthetic tastes, but one tablespoonful will fix the business for the most stubborn cold in head or body. Turpentine is another fine thing for general conditions. I firmly believe that if a man will take fifteen or twenty drops of turpentine in sugar once every two months he will never really be sick. It's an internal Turkish bath in effect, and leaves the system thoroughly cleansed and in good shape to take on new strength. There's no excuse for a cold, and it's a dangerous thing to pass by."

Good canary seed with good rape seed is the staple food for canary birds; a very little hemp seed may be added occasionally. Sopped bread is good for variety and green food should be given frequently. Dandelion blossoms and thistles going to seed are particularly pleasing to most birds.

The English Society of Arts offered a prize for the best process of cleansing silk, woolens and cotton fabrics—one that would not change their color nor injure them in any way. The winning recipe was as follows: Grate two good-sized potatoes into a pint of clear, clean, soft water. Strain through a coarse sieve into a gallon of water and let the liquid settle. Pour the starchy fluid from the sediment and it is ready for use. Rub the articles gently in the liquid, rinse thoroughly in clear water, dry and press.

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You carry a lantern for the light it gives. Why not get the one that gives the most and the best light? There is no question which one that is. Wherever lanterns are used in the world people are attracted by the

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FOR SALE
IN SUBDIVISIONS.

This famous and well-known farm, the home of the late Dr. Glenn, "the wheat king," has been surveyed and subdivided. It is offered for sale in any sized government subdivision at remarkably low prices, and in no case, it is believed, exceeding what it is assessed for county and State taxation purposes.

This great ranch runs up and down the west bank of the Sacramento river for 15 miles. It is located in a region that has never lacked an ample rainfall, and no irrigation is required.

The river is navigable at all seasons of the year, and freight and trading boats make regular rips

The closest personal inspection of the land by proposed purchasers is invited. Parties desiring to look at the land should go to Willows, California, and inquire for P. O. Elbe.

For further particulars and for maps, showing the subdivisions and prices per acre, address personally or by letter,

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DIVIDEND NOTICE

The German Savings and Loan Society,
526 CALIFORNIA STREET.

For the half year ending December 31, 1905, a dividend has been declared at the rate of three and six-tenths (3 6-10) per cent per annum on all deposits, free of taxes, payable on and after Tuesday, January 2, 1906.

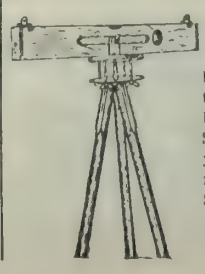
GEORGE TOURNY, Secretary.

DIVIDEND NOTICE

San Francisco Savings Union
532 California St., Cor. Webb.

For the half year ending with 31st December, 1905, a dividend has been declared at the rates per annum of three and six-tenths (3.60) per cent on term deposits, and three and one-third (3⅓) per cent on ordinary deposits, free of taxes, payable on and after Tuesday, January 2nd, 1906.

LOVELL WHITE, Cashier.



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Universal popularity is a sure sign of merit. The sales of **Empire** machines have increased by leaps and bounds; 1000 per cent in the past four years. That means something. It means a whole lot. With all this phenomenal success there is not one case where an **Empire** user has not become an enthusiastic friend of the little machine.

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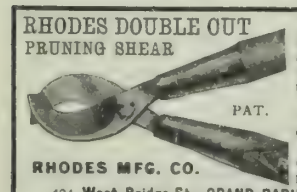
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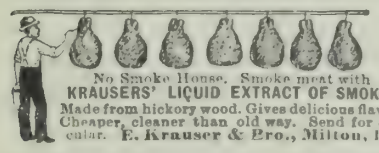
Cuts from both sides of limb and does not bruise the bark.

We pay Express charges on all orders.

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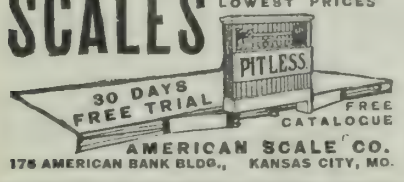
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THE DAIRY.

Butter King Very Properly Goes to Kingsburg.

To the Editor:—At the present time there is probably no cow in all the great dairy world that is better or more favorably known to the public than Juliana De Kol. Her colors are black and white and she is proud of them. And the Holstein breed is proud of her—doubly so when we consider that by her official milk and butter records she is the champion of all 2-year-old heifers at her first time in milk with the following production:

In 7 days 450.9 lbs. milk, 22 lbs. 9 ozs. butter, average test, 4.01%.
In 30 days 1852.7 lbs. milk, 92 lbs. 7 ozs. butter, average test, 3.99%.
In 60 days 3512.6 lbs. milk, 175 lbs. 9 ozs. butter, average test, 4%.
In 100 days 5866 lbs. milk, 283 lbs. 13 ozs. butter, average test, 3.87%.
In 7 days 405.9 lbs. milk, 18 lbs. 10 ozs. butter (100 days after freshening).

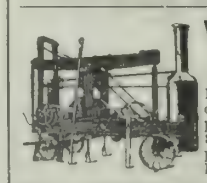
Just stop and consider. A 2-year-old heifer at her first time in milk averaging over 58½ pounds of 4% milk for sixty consecutive days!

Juliana De Kol has had two calves, both of them being bulls. The first, Butter King by name, was shown in the calf class over six months and under one year at the California State Fair in 1904, with the leading herds on the coast in competition. He was awarded first prize in his class and also headed first prize breeders' young herd and first prize (gold medal) young herd in grand sweepstakes.

Her second calf, Juliana's King of Riverside, born just prior to Juliana's continental trip to the St. Louis World's Fair, where she went by express in a special car to attend the Butter Makers' Convention, was shown at both the California State Fair and the Lewis & Clark Exposition at Portland, and at both of these fairs—like his brother at the State Fair last year—was awarded first prize as bull calf, headed the first prize young herd and was junior grand champion over all bulls under two years of age.

Butter King we have sold; we have decided to retain Juliana King of Riverside for use in our herd. Mr. J. F. Rouch of Kingsburg, Cal., who now owns a very fine herd of pure-bred Holsteins, is now the lucky owner of Butter King. Mr. Rouch started out with the idea of purchasing the best bull that money could buy to place at the head of his herd. He went at this work of choosing a herd header very systematically, engaging Mr. G. S. Hewitt, an old-time Holstein breeder and now located at Hanford, to co-operate with him in this important move. After a great amount of work, careful consideration and visiting many of the leading herds, they both agreed that Juliana de Kol's son, Butter King, is truly the equal, if not the superior, of any bull in this country, so he was chosen to go to Kingsburg to head this fine herd. As one would expect from the enviable position that this young bull occupied at the State Fair one year ago, he is a very choice individual, of good size and very handsomely marked. It is with the strongest assurance and greatest pleasure that we predict a world of success for Mr. Rouch, with Butter King at the head of his herd.

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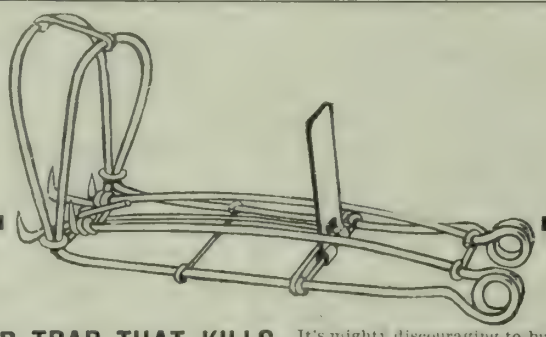
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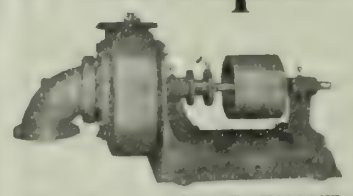
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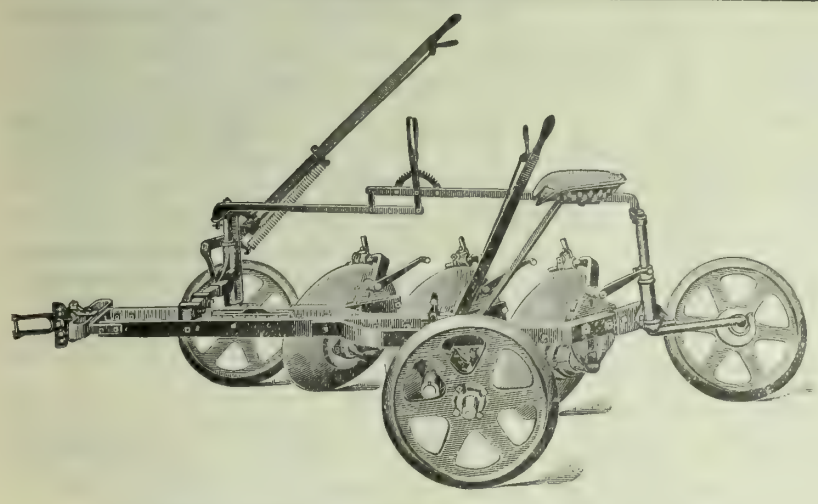
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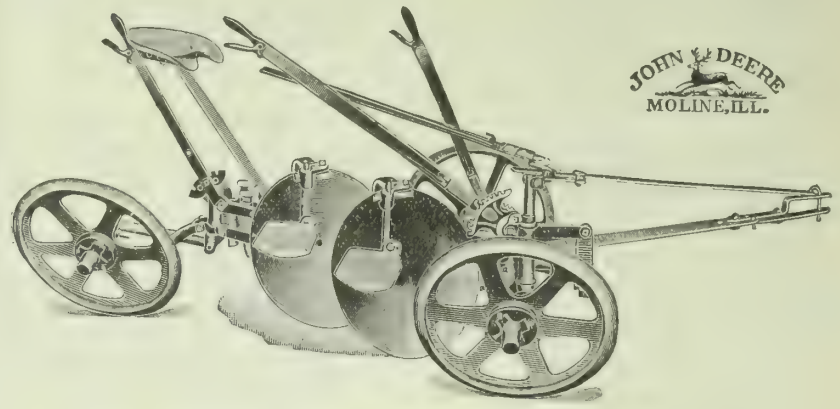
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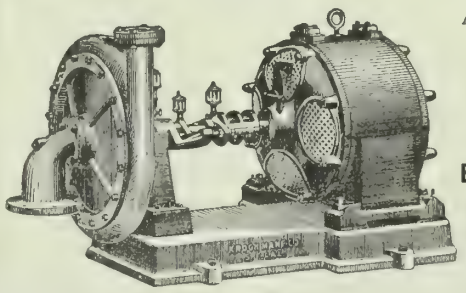
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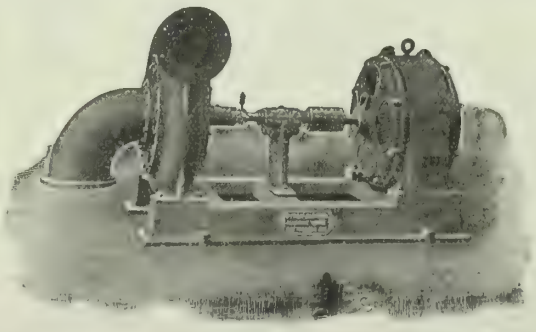


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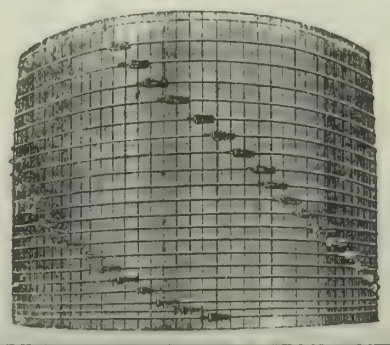
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Patrons of Husbandry.

For the Good of the Order.

To the Editor:—In reply to Mrs. R. S. Twitchell's article of December 9th, shall state that soon after sending my letter to press I was informed that there was a Committee on Press to do the writing for the State Grange, and, as I did not wish to trespass, it was my only letter except direct to the Granges.

As the space is not all taken I shall occasionally write articles for publication with the understanding that Grange matter from other sources be given a preference, if at any time there should not be room to print all received.

The thirty-ninth annual session of the National Grange has closed and its proceedings as printed in the daily press of Atlantic City have been most interesting. The Worthy Master's report is so good that it would be well not only for Patrons of Husbandry to read it carefully, but for every one eligible to become a member of a Grange.

The following is a clipping from his report showing some of the things the Grange has accomplished:

Influence on Legislation.—Along the line of legislation the influence of the Grange has been exerted for many years, moulding public opinion and crystallizing it into laws for the benefit of agriculture, the farmers and people in general. Among the laws already secured might be cited:

The Interstate Commerce law establishing an interstate commission to regulate transportation on a basis of equity between shippers and localities, and fairness between shippers and common carriers, and prevent discrimination between individuals and localities.

The securing and continuous existence of free rural delivery.

The Act of February 19, 1903, enlarging the powers of the Interstate Commerce Commission, and of the courts, to prevent secret rebates.

The so-called Sherman "anti-trust" law of 1890 and the various amendments since that time enacted.

The Act of February, 1903, creating the Department of Commerce, having authority to secure full information regarding the organization and operation of corporations engaged in interstate commerce.

The Hatch act for the establishing of experiment stations.

The separation of the agricultural schools from the classical colleges, and directing the additional appropriations for agricultural colleges be confined to instruction in agriculture and mechanic arts.

The Grout bill, protecting the dairy interest against the fraudulent selling of colored oleomargarine as butter.

The Act of 1902 to prevent the false branding of food products, protecting farmers from fraudulent imitations and consumers from the imposition of fraudulent imitations being sold to them as pure articles.

Not only in securing good laws was Grange influence potent, but in preventing the enactment of laws that would have been detrimental to public welfare. The preventing of the extension of many patents beyond a reasonable limit has saved millions of dollars to the people in the lowering of the prices of articles in common use, whose patents would have been extended.

In the defeat of the ship subsidy bill.

Preventing the ratification of reciprocity treaties that were manifestly unfair to the American farmer.

In the reports of the U. S. Circuit Courts will be found where the Grange defeated the pretended claims for royalties on slide gates and driven wells. In the reports of the Supreme Court of the United States will be found that important decision establishing and affirming the right of legislative supervision and control by Congress in interstate commerce and legislative supervision of all corporations.

Substantially every State in the Union has evidence of Grange thought and influence in equitable laws passed and now in force on taxation, transportation, insurance, pure food and various protective measures.

No one can fully state or even approximately estimate the value of these various laws to the farming interests of this country and public welfare. It is safe to say that the laws secured by Grange influence are worth billions of dollars to the American people, and to the farmers alone hundreds of millions of dollars.

You may expect an article in the near future stating some of the things the Grange is trying to accomplish.

Emily L. Burnham.

Healdsburg, Cal.

Revival of Grange Work.

To the Editor:—On returning from the East, I am glad to see that our old standby, the Pacific Rural Press, is still giving space for news concerning Patrons of Husbandry.

To his surprise, and without solicitation or suggestion, on the informal ballot, the writer was elected Lecturer of the State Grange at its Napa session. Studying the duties of that office, I despair of accomplishing what is designed or expected without hearty co-operation of State and subordinate officers. The former have already promised theirs, and one object of this letter is to appeal most earnestly for the latter.

The State Lecturer is supposed to receive regular reports from the lecturer of each subordinate and Pomona Granges, and to aid by suggestions and literature. My predecessors in office have complained of forgetfulness or neglect, not to say indifference and lack of courtesy from Lecturers. Not for any honor to the individual, or even the office, so much as the desire and determination of all Lecturers to advance the noble and useful Order to which we belong, and to add to its efficiency and influence, should be the ruling motives to make prompt and regular reports. It is the desire of the Worthy Master, officers and executive committee to have more field work done than heretofore. Weak Granges should be visited, encouraged and strengthened, numerically and otherwise. New Granges must be organized. How much time the writer can give to this work is not now certain. But the Worthy Master gives assurance that means and moral support shall not be withheld so long as results justify. Will all Lecturers who read this write me, at once, any cheering news, or make requests for needed help in any way? If this meet the eye of any member of any Grange, he or she would do me a favor by calling the attention of their Lecturer to the above request.

Items of News.—I do not think we have reported the organization of a Grange at Le Grand, Merced county, by Bro. John S. Dore. Bro. Thos. Jacob of Visalia, chairman of the executive committee, reports a good increase of members at the young Grange at Dinuba, Tulare county. He assisted at the initiation. He also advises me of openings for Granges at San Fernando, Los Angeles county, and Corning, Tehama County.

J. W. Webb, Lecturer State Grange.

Box 451, Modesto, Stanislaus county, Cal.

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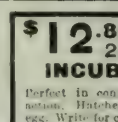
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THE CROCKER BARTLETT PEAR
Is out of sight compared with other pears
GOLDEN RULE NURSERY, Loomis, Cal.

The Markets.

San Francisco Produce Report.

San Francisco, Dec. 27, 1905.

CHICAGO WHEAT FUTURES.

Wheat futures in Chicago were as follows for the week named, price being for No. 2 Red per bushel:

	Dec.		May.	
Wednesday	$ 84½@	83⅞	88⅜@	87⅜
Thursday	83⅞@	83	88 @	87¼
Friday	83⅜@	82¼	87⅜ @	87
Saturday	82⅞@	82¼	87⅜@	87
*Monday	—@	—	—@	—
Tuesday	83¼@	82⅛	87¼@	86¾

CHICAGO CORN FUTURES.

Prices of futures on No. 2 corn per bushel in Chicago were as follows for the week:

	Dec.	May.
Wednesday	46⅛@44½	44⅛@44
Thursday	45⅛@44⅞	44⅜@44⅛
Friday	45¼@44⅛	44¼ @44
Saturday	44½@44¼	44¼ @ 44
*Monday	—@—	—@—
Tuesday	44⅝@43⅞	44¼@43⅞

SAN FRANCISCO WHEAT FUTURES.

The range of values in San Francisco for No. 1 White wheat per cental was as follows:

	Dec., 1905.	May, 1906.
Wednesday	$ —@—	$1 40⅜@1 40⅜
Thursday	—@—	1 40⅜@1 40⅜
Friday	—@—	1 41¼ @1 41
Saturday	—@—	1 40¼@1 40
*Monday	—@—	—@—
Tuesday	—@—	1 40¼@1 40¼

*Holiday.

Wheat.

Spot wheat is steady in price and a shade firmer as to tone. The large Oriental shipments from the North, together with the large amount of wheat which has already come forward to the market, has impressed traders with the idea that supplies of Northern wheat may not be inexhaustible, and the consequence is that while nearly all buyers of wheat have fairly large stocks, prices are being firmly held as quoted. There has been a fairly active market for futures, considering that some dullness is to be expected on account of the holidays. Prices for May wheat have ranged around $1.40 to $1.40¼, and the market seems to have a strong undertone. A late report of the general wheat situation, emanating from a neutral source in Chicago, says that wheat appears to be on a sound and legitimate basis, where neither the buyer nor the seller can look for anything radical in the way of price changes. An evidence of this sound condition in the wheat market is the fact that neither war, revolution, famine, nor the Argentine crop was able to greatly influence the market.

California Milling	$1 42	@1 47½
Cal. No. 1 shipping	1 40	@1 45
Northern Club	1 42½	@1 43¾
Northern Bluestem	1 45	@1 47½
Northern Red	1 35	@1 37½

PRICES OF FUTURES.

Tuesday, at the forenoon session of Exchange, May, 1906, wheat ranged from $1.40⅝@1.40⅝.

Flour.

Flour is quiet but steady. Owing to the fact that it is now just between seasons, the jobbers are finding a very dull market, and this, combined with the fact that flour has never regained its lost footing in the Orient, is having a rather depressing effect. Some very large shipments have been made to Japan, however, from Northern ports, and it is expected that the shortage of the rice crop there may have the effect of neutralizing the effect of the Chinese boycott.

Patents, California	$—	@4 85
Second Patents, California	—	@4 60
Straights	—	@4 25
Superfine No. 1	3 50	@3 75
Superfine No. 2	3 00	@3 40
Oregon Bakers'	4 15	@4 50
Washington Bakers'	4 25	@4 60
Eastern Patents	5 50	@—

Barley.

The spot barley market is firm, especially on bright lots of No. 1 feed. This grade is rather scarce, and is quickly snapped up when offered at the figure of $1.22½. Other grades of feed barley are also in request, but there is not the activity to the trading, and they are much more easily obtained, receipts having been fairly liberal for this grade. Barley futures have been active, May option selling between $1.21 and $1.23.

Brewing	$1 22½	@1 25
Feed, No. 1	1 20	@1 22½
Feed, fair to good	1 15	@1 17½
Chevalier, No. 1 to choice	1 25	@1 30
Chevalier, common to fair	1 20	@1 25

Oats.

The oat market is steady and prices are being well maintained. Arrivals from the North have not been so heavy as formerly, as it is said that prices in the North are too high to warrant much buying for shipment to San Francisco. Reds and blacks are firmly held, and choice lots readily bring top quotations.

White oats	$1 47½	@1 55
Black oats	—	@1 75
Red, choice	1 35	@1 65
Red, fair	1 25	@1 35

Corn

The corn market is firm. Yellow is scarce in both varieties, and the large variety is somewhat firmer in price. Western, to arrive, is quoted lower. White Egyptian corn is somewhat firmer in price.

Large White, good to choice	$1 35	@1 37½
Large Yellow	—	@1 25
Small Yellow	1 50	@1 55
Egyptian White	1 37½	@1 41½
Egyptian Brown	1 25	@1 27½

Rye.

The movement has been very light, as millers do not feel disposed to purchase heavily at these figures, believing that a decline is imminent. This belief is only founded on past markets and does not seem to be warranted by actual figures relating to supply and demand. Meanwhile, a good lot of rye continues to change hands occasionally at $1.52½ while the off grades move rather slowly at $1.45.

Good to choice	$1 45	@1 52½

Buckwheat.

There is practically no market for buckwheat at the present time, owing to the fact that stocks are very light and are for the most part in the hands of the millers. An occasional lot continues to arrive, and usually brings a figure close to the quotation of $1.75.

Good to choice	—	@1 75

Beans.

The market continues steady on both large and small whites, and on pinks with very little trading in any. Red Kidneys and Blackeyes are firm and in rather short supply, while red beans and Blackeyes are being firmly held at appearing quotations. The main feature of the market has been the rapid rise in the price of limas, which seems to be verifying the prediction made by various dealers right along, to the effect that one large local concern has the lima bean situation pretty thoroughly in hand. The price has now reached $4.75 per cental for choice.

Small White, good to choice	$3 00	@3 25
Large White	3 00	@2 60
Pinks	1 75	@2 00
Pinks, damaged	1 00	@1 25
Bayos, good to choice	3 50	@3 65
Red Kidneys	3 65	@3 90
Reds	3 00	@3 10
Limas, good to choice	4 50	@4 75
Black-eye Beans	4 60	@4 75

Dried Peas.

The market is firm on both California green peas and on Niles with stocks well cleaned up in both varieties. An occasional lot comes forward from Mendocino or Humboldt counties, and is readily picked up at appearing quotations. No appreciable quantity of Salinas peas showed up in the local market this season, most of them having gone south, where a better market was found.

Green Peas, California	$2 25	@2 40
Niles	1 75	@2 00

Hops.

There is very little change to be recorded in the hop market this week, as, with the exception of one fair sized sale of Sonomas at 10c, no appreciable business was transacted. It is expected, however, that after the holidays there will be some improvement, as the present season is characterized by the usual dullness which exists at this time in the year. Growers are more disposed to make concessions than formerly, as they realize that statistically the situation would scarcely warrant any better prices than those now prevailing.

Medium to fair	6	@—
Good brewing	8	@ 8¼
Prime	9	@—
Prime to choice	9½	@10½

Wool.

Locally the situation contains very little change from that recorded for the past several weeks. The Eastern market is developing some activity, however, and California and other Western wools are in somewhat better demand. A few sales of the fall clip have been made to the scourers at about the appearing quotations. An Eastern report states that about 300,000 pounds of California wools were disposed of in the Boston market last week at prices ranging from 28c to 30c.

FALL.		
Humboldt and Mendocino	15	@16½
Northern, free	14½	@16
Northern, defective	12	@14
Middle County, free	14	@16
Middle County, defective	12	@14
San Joaquin and Southern, free	10	@14
San Joaquin and Southern, defective	9	@11
SPRING.		
Oregon, valley	23	@25
Eastern Oregon	15	@17
Nevada	16	@20

Hay and Straw.

There has been but little activity in the hay market this week, owing to the holiday and the near approach of the end of the year. Arrivals have been fairly heavy, owing partly to a better supply of cars and partly to the rains, which give assurance of green feed and have released a large amount of hay heretofore held in the country for emergencies. There has been no change in prices, although the wet weather has made the market a little easier.

Wheat, choice	$14 00	@ 16 50
Wheat, other grades	8 00	@ 13 50
Wheat and Oat	9 00	@ 12 50
Tame Oat, fair to choice	8 00	@ 12 00
Wild Oat	6 00	@ 9 00
Barley	7 00	@ 9 50
Clover	6 00	@ 9 00
Alfalfa	7 00	@ 11 50
Stock hay	7 00	@ 8 00
Compressed	10 00	@ 13 00
Straw, ₱ bale	35	@ 55

Millstuffs.

There is a good demand for most kinds of feedstuffs, though a continuance of the rains is likely to affect prices somewhat in the near future by bringing out the green feed. Bran and middlings are in rather light supply and are a shade firmer, though quotably unchanged. Other varieties are steady at appearing quotations.

Alfalfa Meal, ₱ ton	$21 00	@ 22 00
Bran, ₱ ton	20 00	@ 21 00
Middlings	27 50	@ 29 00
Shorts, Oregon	21 00	@ 22 00
Barley, Rolled, choice	26 00	@ 27 00
Cornmeal	29 50	@ 30 50
Cracked Corn	30 00	@ 31 00
Oilcake Meal	39 00	@ 40 00
Cocoanut cake or meal	24 50	@ 25 50

Seeds.

The market on seeds continues quiet and is not expected to command attention before another month at least. Prices are being well maintained, as it is not expected that stocks will be any more than adequate to supply the local demand. Mustard seed prices are being firmly held, as stocks on hand are rather light, and it is expected that, owing to the satisfactory prices received for this year's crop, a larger area than last year will be devoted to mustard this year.

Alfalfa	$11 00	@14 00
Flax	—	@—
Mustard, Yellow	3 50	@ 3 75
Mustard, Trieste	4 50	@ 4 75
		Per lb.
Canary		6½@ 7
Rape		2½@ 3
Hemp		3½@ 4
Timothy		5½@ 6

Honey.

There have been fair-sized arrivals of honey this week, which have brought about the quoted prices. Growers are becoming more reconciled to the fact that the reports of tremendous honey shortages were erroneous and were doubtless circulated with the intention of bulling the market. White honey, both extracted and in the comb, is moving off readily, while amber is only in fair demand.

Extracted, Water White	4¾@ 5
Extracted, White	4½@ 4¾
Extracted, Light Amber	4 @ 4½
Extracted, Amber	3½@ 4
Extracted, Dark Amber	3 @ 3½
White Comb, 1-frames	9 @10
Amber Comb	7 @ 8

Beeswax

There has been a good steady demand for dark wax and supplies in the hands of jobbers are very light. Light wax is in fair request and prices are being well maintained.

Good to choice, light ₱ lb	26 @28
Dark	24 @25

Live Stock and Meats.

The meat market is in somewhat better shape than at any time during the past few weeks. Supplies of all kinds have been liberal and beef is a shade firmer in price. Hogs are active, the market having reached 6c for good stock under 250 pounds weight.

Allowing for the shrinkage of about 50%, which is exacted in buying cattle on the hoof, live cattle command as much or more per pound than dressed beef, the shrinkage exacted being the slaughterers' profit.

The following quotations for beef and mutton are based on prices realized by slaughterers from wholesale dealers:

Beef, 1st quality, dressed, net ₱ lb	5	@ 5½
Beef, 2nd quality	4½	@ 5
Beef, 3rd quality	3½	@ 4
Mutton—ewes, 8@9c; wethers	9½	@10
Hogs, hard grain, 150 to 250 lbs	—	@ 6
Hogs, large, hard, over 250 pounds	5½	@—
Hogs, small, fat, under 150 lbs	5¾	@ 6
Veal, large, ₱ lb	6	@ 7½
Veal, small, ₱ lb	8	@ 9
Lamb, spring, ₱ lb	10	@11

Hides, Skins and Tallow.

The hide market is very quiet and no large transactions are expected until after January 1st. Both in San Francisco and in the East the markets are inactive at unchanged prices. Quotations will probably ease off a little after the first of the year, but hides of good quality are scarce and can hardly go down perceptibly in price.

Nothing but select hides, clean and trimmed, will bring full figures. Culls of all kinds, either from grubs, cuts, hair slips, side brands or murrain, are not always readily placed at the lower figures.

	Sound.	Culls.
Heavy Steers, over 56 lbs	12 @—	12 @—
Medium Steers, 48 to 56 lbs	12 @—	11 @—
Light Steers, under 48 lbs	11½@—	10½@—
Heavy Cow Hides, over 50 lbs.	11½@—	10½@—
Light Cow Hides, under 50 lbs.	11½@—	10½@—
Stags	7 @ 8	7 @—
Wet Salted Kip	10½@—	10 @—
Wet Salted Veal	12 @—	11 @—
Wet Salted Calf	13 @—	12 @—
Dry Hides	19 @—	19 @—

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It is of the utmost importance that young trees, shrubs and vines for planting be true to name. They must also be well rooted and properly prepared for shipping and planting. Such are the trees from our nurseries.

We have four separate nurseries, comprising over eleven hundred acres, in different sections of the country, each having its peculiar soil best suited to the special requirements of different trees, shrubs and vines for their perfect development. It is a costly method for us to pursue, but it enables us to grow the very best on the market.

Calimyrna Figs.

Over fourteen years of careful experimenting with the growth of the Smyrna fig, or fig of commerce, in this country were required before we could say that we had been entirely successful in propagating this valuable fig, and for the past five years we have been growing this fig in its perfection, drying, packing and marketing it.

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There are several varieties of the Smyrna fig, but with our varied experience in this line we feel warranted in recommending one, the Calimyrna, as the most profitable and best for all commercial purposes. We are able to supply almost any desired quantity of these superior trees.

We protect the Calimyrna fig with a seal, which is attached to each bundle of trees.

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Peaches, Plums, Prunes, Pears, Apples, Apricots, Cherries, Olives, Nectarines, etc.

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and all of our citrus fruit trees are grown in our nursery at Exeter, which has a deep, rich loam and is particularly suited to this particular line. All of the standard varieties will be found in our stock of strictly first-class trees.

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As we are the largest growers on the coast of the best varieties of raisin, wine and table grapes, and also make a specialty of vines grafted on phylloxera resistant roots, we are in a position to fill your orders most satisfactorily.

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Our catalogue, in either English or Spanish, is profusely illustrated and gives a good idea of the immensity of our stock. We mail it free to any address on receipt of 5c postage. Price list mailed on application.

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Fresno, California.

Bags and Bagging.

There is little to be said concerning the market for bags and bagging except that there is practically nothing doing in a business way, and is not likely to be anything prior to the termination of the rainy season. The Calcutta market is a shade weaker for futures, June bags being quoted at 6½c and 6⅝c per pound.

Bean Bags	$ 6¼@—
Fruit Sacks, cotton, No. 1, 7¾@8¼; No. 2	7⅛@7⅜
Fruit Sacks, jute, as to quality	6½@7½
Grain Bags, Calcutta, 22x36, spot	7⅛@7¾
Wool Sacks, 4-lb	— @ 36
Wool Sacks, 3¼ lb	— @ 34

Poultry.

The market is bare of local stock, but very strong on all large varieties, large hens being in special demand. Steady prices are expected to prevail all this week and even an advance above top quotations may be received on extra fancy and large stock. The turkey market did not reach as high a figure as had been predicted for it, but a good average price was received, and all receipts were well cleaned up, leaving the market bare to-day. Turkeys will be wanted in the local market for the New Year trade.

Turkeys, choice Young, ₱ lb	$ 20 @ 21
Turkeys, live gobblers, ₱ lb	20 @ 21
Turkeys, live hens ₱ lb	20 @ 21
Hens, California, ₱ dozen	5 00 @ 5 50
Hens, large	6 50 @ 7 00
Roosters, old	5 00 @ 6 00
Roosters, young (full-grown)	6 00 @ 7 00
Fryers	5 50 @ 6 00
Broilers, large	3 50 @ 4 50
Broilers, small to medium	2 00 @ 3 00
Ducks, old, ₱ dozen	5 00 @ 6 00
Ducks, young, ₱ dozen	6 00 @ 8 00
Geese, ₱ pair	2 00 @ 2 25
Goslings, ₱ pair	2 00 @ 3 00
Pigeons, old, ₱ dozen	— @ 1 25
Pigeons, young	2 00 @ 2 25

Butter.

The butter market is firmer on nearly all grades, the high price of extras having caused the intermediate and lower grades to come into more general consumption.

Creamery, extras, ₱ lb	32 @33
Creamery, firsts	— @27½
Creamery, seconds	21 @25
Dairy, select	20 @25
Dairy, firsts	22 @25
Dairy, seconds	20 @22
California storage	23½@25½
Mixed Store	— @20

Cheese.

Steady prices on cheese prevailed during the week, and the general tone of the market is excellent. Receipts were fairly large, but were readily taken care of by a good demand.

California, fancy flat, new	13 @14½
California, good to choice	— @13
California, fair to good	11 @12½
California, "Young Americas"	13 @14
Eastern, new	16 @17

Eggs.

The market for fresh ranch eggs continues to decline, and it is predicted that a still lower level will be reached, as it was largely a speculative movement which had kept eggs up to their former high figure. Even Eastern eggs are weaker in price at this writing.

California, select, large, white and fresh.	— @35
California, select, irregular color & size.	30 @32½
California, good to choice store	— @30
Eastern firsts	23 @26
Eastern seconds	19 @20

Potatoes.

The market continues firm for fancy grades only, while all cheap stock is having a tendency to accumulate, owing to the falling off of the shipping demand for the South and Southwest. Fancy Salinas stock is in good demand, and, owing to the lightness of receipts, the top price of $1.50 is occasionally exceeded for exceptionally fine lots.

River Burbanks, ₱ cental	60 @ 80
Salinas Burbanks	1 15 @ 1 50
Oregon Burbanks	75 @ 1 15
Tomales	80 @ 90
Sweet Potatoes	1 25 @ 1 50

Vegetables.

The vegetable market is firmer. A brisk local demand, supplemented by news of heavy frosts in the south, has caused dealers here to advance prices materially. Egg plant is now selling at 10c to 15c per pound, and all other vegetables of kindred variety have advanced correspondingly, owing to the uncertainty as to the ability of supplies to continue to arrive. Bell peppers are bringing 12½c to 15c per pound, and green peppers 6c to 8c per pound. Tomatoes are easier, owing to the poor quality of arrivals, many shipments being so badly damaged, either by frost or rain, as to make them unsalable. The onion market is firm, with prices about as quoted, though there is considerable water damaged stock arriving which will not bring these figures.

Cauliflower, ₱ dozen	— @ 1 00
Beans, String, ₱ lb	8 @ 9
Cabbage, choice garden, ₱ 100 lbs	— @ 1 50
Egg Plant, ₱ lb	10 @ 15
Garlic, ₱ lb	7 @ 8
Onions, Oregon, ₱ ctl	1 30 @ 1 40
Onions, New Yellow Danvers, ₱ ctl	1 25 @ 1 40
Onions, Australian Brown, ₱ ctl	1 25 @ 1 45
Peas, Green, ₱ lb	6 @ 8
Peppers, Bell, ₱ lb	12½@ 15
Peppers, Green, ₱ lb	6 @ 8
Tomatoes, ₱ box or crate	75 @ 1 00
Artichokes, ₱ doz	50 @ 1 00
Cucumbers, ₱ dozen	1 00 @ 1 25
Carrots, ₱ sack	65 @ 75
Hubbard Squash, ₱ ton	— @20 00

NOTE.—Large boxes are what are known to the trade as "pay boxes," which have to be returned or paid for. They are open top, with hand holes in the ends, and weigh when filled from 50@60 lbs gross. Small boxes are free boxes, about the same as the regular fruit box, weighing when full from 20 to 30 lbs. gross.

Fresh Fruits.

The market is rather quiet, owing to the holidays. Apples are, however, somewhat firmer, as there was an unusual demand for holiday consumption as well as a considerable demand for Eastern shipment. The top quotation of $1.25 is sometimes exceeded for extra fancy stock, though the arrivals of such stock are not sufficiently large to justify a higher quotation. There are still a few grapes left in the local market, and such as are of desirable quality bring from $1.25 to $1.65 per crate. Persimmons are plentiful at appearing quotations.

Apples, choice to select, ₱ 50-lb box	1 00 @ 1 25
Apples, good to choice, ₱ 50-lb. box	75 @ 1 00
Figs, ₱ two layer	85 @ 1 00
Grapes, Verdell, crate	1 25 @ 1 65
Grapes, Tokay, ₱ crate	1 25 @ 1 65
Grapes, Muscat, ₱ crate	1 25 @ 1 65
Huckleberries, ₱ lb	— @ —
Persimmons, ₱ box	1 00 @ 1 50
Pomegranates, ₱ box	— @ 2 25
Pears, Winter Nelis	1 75 @ 2 50

Dried Fruits.

The market generally is quiet as to tone, but on no variety does there seem any disposition toward weakness. On the contrary, the strong statistical situation would seem to make for the advancement of prices on some varieties. Apples are especially firm, on account of the persistent reports of an Eastern shortage, and, though no shipment of dried apples of any consequence has been made to the East thus far, holders are encouraged by the fact that large shipments of fresh apples have been made, to believe that the reports were well founded, and that a demand will spring up later. Prunes are also firm in price, though there is not much trading being done, most of the stocks being already in second hands, while what remains in first hands is being held for a probable advance in price.

EVAPORATED OR BLEACHED.

Apples, 50-lb boxes, rings, pressed, good to choice	-@ 8
Apples, extra choice to fancy, 50-lb boxes	8½@ 9½
Apricots, Royal, good to choice, ₱ lb	7½@ 8¼
Apricots, Royal, fancy	8½@ 9
Figs, 10-lb box, 1-lb cartons	55 @62½
Nectarines, White and Stanwick, ₱ lb	8 @ 8½
Nectarines, red, ₱ lb	—@ 8
Peaches, unpeeled, good to choice	8¼@ 8¾
Peaches, unpeeled, fancy to extra fancy	9 @ 9½
Pears, standard, ₱ lb	—@ 8½
Pears, choice to fancy	10 @12
Plums, Black, pitted	5½@ 6½
Plums. Red, pitted	7 @ 8
Plums, Yellow, pitted	6 @ 8
Prunes, Silver, good to fancy	5½@ 8½
Prunes, in bags, 4 sizes, —@—c; 40-50s, 5@5¼c; 50-60s, 4¼@4½c; 60-70s, 3¾@4c; 70-80s, 3¼@3½c; 80-90s, 2¾@3c; 90-100s, 2½@2¾c; small, 2¼@2½c.	

COMMON SUN-DRIED.

Apples, sliced	5 @ 5½
Apples, quartered	4¾@ 5½
Figs, White, in bulk	2½@ 3
Figs, Black	2½@ 3

Raisins.

The local market remains rather quiet, but it is said that the market is gathering some strength in the East. Prices remain unchanged, however, and will doubtless continue so until after January 3, when bids on the bulk of the remainder of the 1905 crop in first hands will be opened by the Growers' Co. It is evident that the growers are becoming alarmed at their failure to find a market at the price set last fall, and their alarm is manifested by their resolution to call for bids. The amount now unsold in the hands of the company is said to be in the neighborhood of 12,000 tons.

(Fresno delivery except otherwise specified,)

London Layers, 2-crown, 20-lb box	1 40 @—
London Layers, 3-crown, 20-lb box	1 50 @—
Fancy Clusters, 4-crown, 20-lb box	2 00 @—
Dehesas, 20-lb box	2 50 @—
Imperials, 20-lb box	3 00 @—
2-Crown Standard loose Muscatel	5¾@ —c
3-Crown Standard	6 @ —c
4-Crown Standard	6½@ —c
Seedless Thompsons, 50-lb boxes	6½@ —c
Seedless Sultanas	5 @ —c
Fancy, 16-oz. Seeded	8¼@ —c
Choice, 16-oz. Seeded	8 c
Fancy, 12-oz. Seeded	6⅝c
Choice, 12-oz. Seeded	6⅜c

Citrus Fruits.

The orange market is quiet, but prices are being maintained at former quotations. Lemons are very weak, $2.25 being the top price for fancy stock. The range in prices for grape fruit is necessarily wide, owing to the large amount of small sized fruit which the new crop contains. Large, ripe grape fruit is scarce and finds a ready market. Limes are steady at appearing quotations.

Oranges, fancy	2 00 @2 50
Oranges, choice	1 25 @1 75
Oranges, standard	85 @1 25
Oranges, Seedlings	75 @1 00
Lemons, California, fancy, ₱ box	1 50 @2 25
Lemons, California, good to choice	1 00 @1 50
Lemons, California, standards	75 @1 00
Grape Fruit, ₱ box, new	1 50 @2 50
Limes, ₱ box	3 00 @4 00

Nuts.

There is practically no demand for either walnuts or almonds at this writing, the holiday demand having been supplied and prices being too high to warrant buying on speculation. A decline in the price of almonds is looked for, as prices are as high as they were at this time last year, when there were only about one-half as many nuts. Walnut prices will probably be firmly held and may even advance, as stocks are light and the crop was rather short.

Peanuts, fair to prime	4⅛@ 5⅛
Cal. Walnuts, No. 1 soft shell	-- @13
Cal. Walnuts, No. 2 soft shell	— @ 9
Cal. Walnuts, No. 1 hard shell	— @12½
Cal Walnuts, No 2 hard shell	@ 8½
Almonds, IXL, ₱ lb	11 @12
Almonds, Ne Plus Ultra, ₱ lb	11 @12
Almonds, Nonpareil, ₱ lb	11 @13
Almonds, Languedoc, ₱ lb	7½@—
Almonds, Golden State, ₱ lb	7 @—
Hard Shell, ₱ lb	5 @

California White Leghorns Are Good.

At the California Poultry Association Show in San Francisco, Nov. 27 to Dec. 2, 1905, premiums were awarded to C. B. Carrington of Hayward as follows:

S. C. White Leghorns—Cock, first; cockerel, first; hen, first; pens, first and second; also, specials for best twenty birds solid color, best ten birds solid color, best pair, best trio, best pen, any variety, and best display and collection of S. C. White Leghorns.

The Leghorns were judged by the two well-known judges, I. G. Orr, from Beaver, Pa., and Geo. Burgott, Lawton Station, New York. Both these gentlemen expressed their opinion that the Leghorns exhibited at this show were a very strong class and would have held their own at any of the Eastern shows.

WOOL.

Have you any on hand and unsold? If so, tell us how much and kind, and we will give you valuable information that will help you in selling.

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DIVIDEND NOTICE

California Safe Deposit and Trust Company,
Cor. California and Montgomery Sts.

For the six months ending December 31, 1905, dividends have been declared on the deposits in the savings department of this company, as follows: On term deposits at the rate of 3 6-10 per cent per annum, and on ordinary deposits at the rate of 3 per cent per annum, free of taxes, and payable on and after Tuesday, January 2, 1906.
J. DALZELL BROWN, Manager.

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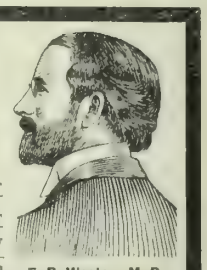
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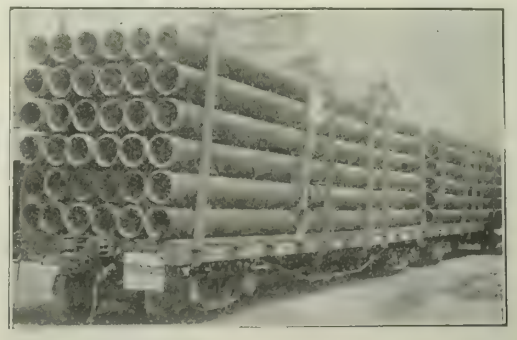
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